

Form C-141

State of New Mexico

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Oil Conservation Division

Incident ID	NDHR1915659759
District RP	1RP-5527
Facility ID	fDHR1915659632
Application ID	pDHR1915658052

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: agroves@pacalp.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 8, 2019

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

Re: Remediation Summary and Closure Report
Todd 15N Federal 14 Tie In
API No. N/A
GPS: Latitude 32.2872449 Longitude -103.7428015
UL "I", Sec. 23, T23S, R31E
Lea County, NM
NMOCD Ref. No. 1RP-5527

Tasman Geosciences (Tasman), on behalf of Plains Pipeline, LP., has prepared this Remediation Summary and Closure Report for the Release Site known as the Todd 15N Federal 14 Tie In. Details of the release are summarized below:

RELEASE DETAILS			
Type of Release: Crude Oil		Volume of Release: 10 bbls	
		Volume Recovered: 0 bbls	
Source of Release: Pipeline Tie In/Pig Trap		Date of Release: 5/16/19	Date of Discovery: 5/16/19
Was Immediate Notice Given?	Yes	If, YES, to Whom?	NMOCD Distict/BLM
Was a Watercourse Reached?	No	If YES, Volume Impacting the Watercourse: N/A	
Surface Owner: Federal		Mineral Owner: Federal	
Describe Cause of Problem and Remedial Action Taken:			
The release was attributed to the valve draining to the catch basin at the pig trap not properly being closed, resulting in the release of ten barrels of crude oil.			

Site Characteristics and Sample Location Map are provided as Figure 1, 2A and 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	101-128 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. Search results of the NMOSE and USGS databases indicated that there are no wells within the search criteria area. The approximate depth to groundwater was extrapolated from a Depth to Groundwater Map utilized by the NMOCD. Depth to groundwater information is provided as Appendix A.

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

Table I Closure Criteria for Soils Impacted by a Release			
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

One June 5, 2019 & June 18, 2019, Tasman personnel were on site to begin soil delineation of the accidental discharge. Four (4) verticals (V-1, V-2, V-3, V-4) were installed at depths ranging from seven (7) feet (ft.) in verticals V-1 and V-4 to depths of thirteen (13) ft. and fourteen (14) ft. in verticals V-3 and V-2 respectively. Soil samples were collected at one (1) ft. intervals and field screened for chloride and volatile organic compounds in an effort to determine the vertical extent of soil impacts.

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 42,020 mg/kg in soil sample V-3 @ S to below the laboratory reporting limit (RL) in soil sample V-3 @ 2'. 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)
Background @ S	6/18/2019	Surf.	In-Situ	<0.0003	<0.0003	<7.98	15.7	15.7	<8.01	15.7	<0.860
V-1 @ S	6/5/2019	Surf.	In-Situ	0.2840	16.4000	818	8,970	9,788	857	10,645	219.0
V-1 @ 1'	6/5/2019	1'	In-Situ	0.0003	0.2760	351	3,960	4,311	255	4,566	-
V-1 @ 2'	6/5/2019	2'	In-Situ	0.0008	0.5640	638	5,580	6,218	671	6,889	-
V-1 @ 3'	6/5/2019	3'	In-Situ	0.0050	0.7310	1,450	98,900	100,350	1,190	101,540	13.1
V-1 @ 4'	6/5/2019	4'	In-Situ	0.0010	0.3830	757	7,120	7,877	8,750	16,627	-
V-1 @ 5'	6/5/2019	5'	In-Situ	0.0006	0.3090	524	5,290	5,814	643	6,457	-
V-1 @ 6'	6/5/2019	6'	In-Situ	0.0008	0.0110	14.5	541	556	79.1	635	-
V-1 @ 7'	6/5/2019	7'	In-Situ	<0.0003	0.0050	<7.99	196	196	30	226	1.36
V-2 @ S	6/18/2019	2'	In-Situ	<0.0038	3.09	498	11,100	11,598	1,510	13,108	46.2
V-2 @ 1'	6/18/2019	1'	In-Situ	<0.0038	2.46	357	4,990	5,347	428	5,775	3.5
V-2 @ 2'	6/18/2019	2'	In-Situ	<0.0003	2.90	455	4,810	5,265	383	5,648	<0.862
V-2 @ 3'	6/18/2019	3'	In-Situ	<0.0003	3.52	543	4,990	5,533	376	5,909	<0.855
V-2 @ 4'	6/18/2019	4'	In-Situ	<0.0038	4.12	487	4,620	5,107	365	5,472	<0.858
V-2 @ 5'	6/18/2019	5'	In-Situ	<0.0038	4.90	585	4,300	4,885	323	5,208	<0.865
V-2 @ 6'	6/18/2019	6'	In-Situ	<0.0192	8.74	1,190	5,480	6,670	7,020	13,690	<0.853
V-2 @ 7'	6/18/2019	7'	In-Situ	0.0813	15.9	1,380	7,220	8,600	9,070	17,670	<0.853
V-2 @ 8'	6/18/2019	8'	In-Situ	<0.0038	<0.0003	129	1,890	2,019	165	2,184	-
V-2 @ 9'	6/18/2019	9'	In-Situ	<0.0038	<0.0003	24.1	900	924	89.0	1,013	-
V-2 @ 10'	6/18/2019	10'	In-Situ	<0.0038	<0.0003	8.22	52.8	61.02	<8.12	61	-
V-2 @ 11'	6/18/2019	11'	In-Situ	<0.0038	0.0281	74.5	1,870	1,945	145	2,090	-
V-2 @ 12'	6/18/2019	12'	In-Situ	<0.0038	<0.0003	16.5	620	636.5	61.0	698	-
V-2 @ 13'	6/18/2019	13'	In-Situ	<0.0038	<0.0003	10.3	343	353.3	42.0	395	-
V-2 @ 14'	6/18/2019	14'	In-Situ	<0.0038	<0.0003	<7.98	62.8	62.8	24.1	86.9	-

V-3 @ S	6/18/2019	Surf.	In-Situ	0.0008	0.0008	<7.99	<8.11	<7.99	<8.11	<7.99	-
V-3 @ 1'	6/18/2019	1'	In-Situ	<0.0003	<0.0003	<7.99	82.9	82.9	20.8	104	-
V-3 @ 2'	6/18/2019	2'	In-Situ	<0.0003	<0.0003	<7.97	17.4	17.4	<8.10	17.4	-
V-3 @ 3'	6/18/2019	3'	In-Situ	0.0008	0.0008	<7.99	11.9	11.9	<8.12	11.9	-
V-3 @ 4'	6/18/2019	4'	In-Situ	0.0008	0.0008	<7.99	<8.11	<7.99	<8.11	<7.99	-
V-3 @ 5'	6/18/2019	5'	In-Situ	<0.0003	<0.0003	<7.99	82.9	82.9	20.8	104	-
V-3 @ 6'	6/18/2019	6'	In-Situ	<0.0003	<0.0003	<7.97	17.4	17.4	<8.10	17.4	-
V-3 @ 7'	6/18/2019	7'	In-Situ	0.0008	0.0008	<7.99	11.9	11.9	<8.12	11.9	-
V-3 @ 8'	6/18/2019	8'	In-Situ	0.0008	0.0008	<7.99	<8.11	<7.99	<8.11	<7.99	-
V-3 @ 9'	6/18/2019	9'	In-Situ	<0.0003	<0.0003	<7.99	82.9	82.9	20.8	104	-
V-3 @ 10'	6/18/2019	10'	In-Situ	<0.0003	<0.0003	<7.97	17.4	17.4	<8.10	17.4	-
V-3 @ 11'	6/18/2019	11'	In-Situ	0.0008	0.0008	<7.99	11.9	11.9	<8.12	11.9	-
V-3 @ 12'	6/18/2019	12'	In-Situ	0.0008	0.0008	<7.99	<8.11	<7.99	<8.11	<7.99	-
V-3 @ 13'	6/18/2019	13'	In-Situ	<0.0003	<0.0003	<7.99	82.9	82.9	20.8	104	-
V-4 @ S	6/5/2019	Surf.	In-Situ	0.0046	0.578	480	4,940	5,420	328	5,748	6.2
V-4 @ 1'	6/5/2019	1	In-Situ	0.0004	0.7780	339	3,760	4,099	191	4,290	-
V-4 @ 2'	6/5/2019	2	In-Situ	<0.0003	0.0010	13.2	113	126.2	8.76	134.96	-
V-4 @ 3'	6/5/2019	3	In-Situ	<0.0003	<0.0003	13.2	155	168.2	14.7	182.9	<0.857
V-4 @ 4'	6/5/2019	4	In-Situ	<0.0003	<0.0003	14.1	14.6	28.7	<8.12	28.7	<0.858
V-4 @ 5'	6/5/2019	5	In-Situ	<0.0003	<0.0003	13.4	53.9	67.3	<8.13	67.3	-
V-4 @ 6'	6/5/2019	6	In-Situ	<0.0003	<0.0003	13.8	9.45	23.25	<8.10	23.25	-
V-4 @ 7'	6/5/2019	7	In-Situ	<0.0003	<0.0003	17.7	268	285.7	16.5	302.2	<0.855
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, Seventy-three (73) 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 BTEX and chloride concentrations were below the NMOCD closure criteria in each of the submitted samples. Analytical results also indicated that TPH concentrations ranged from 10,091 in soil sample FL-23 @ 7' to below the NMOCD closure criteria in the remaining samples. The area represented by sample FL-23 @ 7' was excavated, and one (1) additional composite soil sample (FL-23-B @ 15'), representing no more than 200 SqFt., was collected and submitted to the laboratory for analysis of TPH, BTEX, and chloride concentrations. In addition, the area represented by sample WSW-12N @ 6' was excavated due to visible staining and one soil sample (WSW-12N-B @ 6') was collected and submitted to the laboratory 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 @ 2'	7/18/2019	2'	In-Situ	<0.0003	<0.0003	<7.99	<8.11	<8.11	<8.11	<8.11	<0.860
FL-2 @ 4'	7/18/2019	4'	In-Situ	<0.0003	<0.0003	<7.99	19.0	19.0	<8.11	19.0	<0.860
FL-3 @ 8'	7/18/2019	8'	In-Situ	<0.0003	<0.0003	8.24	19.5	27.7	<8.11	27.7	<0.860
FL-4 @ 8'	7/18/2019	8'	In-Situ	<0.0003	<0.0003	<7.99	59.0	59.0	11.3	70.3	<0.860
FL-5 @ 8'	7/18/2019	8'	In-Situ	<0.0003	<0.0003	<7.99	11.3	11.3	<8.11	11.3	<0.860
FL-6 @ 8'	7/18/2019	8'	In-Situ	<0.0003	<0.0003	<7.99	18.3	18.3	<8.11	18.3	<0.860
FL-7 @ 8'	7/18/2019	8'	In-Situ	<0.0003	<0.0003	<7.99	10.2	10.2	<8.11	10.2	1.66
FL-9 @ 13'	7/22/2019	13'	In-Situ	<0.0003	<0.0003	<10.0	79.2	79.2	18.8	98.0	2.27
FL-10 @ 13'	7/22/2019	13'	In-Situ	<0.0003	<0.0003	<10.0	58.6	58.6	13.1	71.7	5.77
FL-11 @ 13'	7/22/2019	13'	In-Situ	<0.0003	<0.0003	<10.0	165	165	33.7	199	3.97
FL-12 @ 4'	7/22/2019	4'	In-Situ	<0.0003	<0.0003	<10.0	286	286	51.2	337	2.82
FL-13 @ 13'	7/22/2019	13'	In-Situ	<0.0003	<0.0003	10.1	452	462	73.8	536	3.67
FL-14 @ 4'	7/22/2019	4'	In-Situ	<0.0003	<0.0003	<10.0	177	177	63.7	241	3.95
FL-15 @ 13'	7/23/2019	13'	In-Situ	<0.0003	<0.0003	<10.0	15.8	15.8	<10.0	15.8	9.20
FL-16 @ 13'	7/23/2019	13'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	2.89
FL-17S @ 13'	7/25/2019	13'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	2.51
FL-17N @ 13'	7/25/2019	13'	In-Situ	<0.0003	<0.0003	26.3	638	664	94.8	759	3.50
FL-18S @ 13'	7/26/2019	13'	In-Situ	<0.0003	<0.0003	<10.0	15.9	15.9	<10.0	15.9	3.28
FL-18N @ 13'	7/26/2019	13'	In-Situ	<0.0003	<0.0003	<10.0	14.8	14.8	13.2	28.0	8.98
FL-19N @ 7'	7/31/2019	7'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	10.5
FL-19S @ 7'	7/31/2019	7'	In-Situ	<0.0003	<0.0003	<10.0	20.0	20.0	<10.0	20.0	10.8
FL-20N @ 7'	7/31/2019	7'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	10.1
FL-20S @ 7'	7/31/2019	7'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	91.8
FL-21N @ 8'	7/31/2019	8'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	10.3
FL-21 @ 8'	8/2/2019	8'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	10.5
FL-22 @ 8'	8/2/2019	8'	In-Situ	<0.0003	<0.0003	11.8	312	324	71.7	396	14.0
FL-23 @ 7'	8/2/2019	7'	Excavated	1.35	65.5	2,030	7,080	9,110	981	10,091	13.2
FL-23-b @ 15'	8/26/2019	15'	In-Situ	<0.0003	<0.0003	<10.0	155	<10.0	<10.0	155	95.1

NW -1	7/18/2019	-	In-Situ	<0.0003	<0.0003	<7.99	<8.11	<8.11	<8.11	<8.11	<0.860
NW -2	7/18/2019	-	In-Situ	<0.0003	<0.0003	<7.99	<8.11	<8.11	<8.11	<8.11	<0.860
NW -3	7/18/2019	-	In-Situ	<0.0003	<0.0003	<7.99	<8.11	<8.11	<8.11	<8.11	<0.860
NSW-4A @ 3'	7/22/2019	3'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	5.73
NSW-4B @ 9'	7/22/2019	9'	In-Situ	<0.0003	<0.0003	<10.0	10.3	10.3	<10.0	10.3	3.11
NSW-5A @ 3'	7/22/2019	3'	In-Situ	<0.0003	<0.0003	<10.0	14.3	14.3	<10.0	14.3	3.55
NSW-5B @ 9'	7/22/2019	9'	In-Situ	<0.0003	<0.0003	<10.0	41.9	41.9	13.2	55.1	3.00
NSW-6A @ 3'	7/22/2019	3'	In-Situ	<0.0003	<0.0003	<10.0	15.2	15.2	<10.0	15.2	4.92
NSW-6B @ 9'	7/22/2019	9'	In-Situ	<0.0003	<0.0003	<10.0	23.4	23.4	<10.0	23.4	12.4
NSW-8A @ 3'	7/22/2019	3'	In-Situ	<0.0003	<0.0003	11.5	65.3	<10.0	15.6	<10.0	5.00
NSW-8B @ 9'	7/22/2019	9'	In-Situ	<0.0003	<0.0003	<10.0	23.0	<10.0	<10.0	<10.0	6.02
NSW-10A @ 3'	7/22/2019	3'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	2.90
NSW-10B @ 9'	7/23/2019	9'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	3.11
NSW-12A @ 3'	7/25/2019	3'	In-Situ	<0.0003	<0.0003	<10.0	35.5	35.5	<10.0	35.5	2.22
NSW-12B @ 9'	7/25/2019	9'	In-Situ	<0.0003	<0.0003	<10.0	68.5	68.5	12.7	81.2	10.7
NSW-13A @ 3'	7/26/2019	3'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	4.44
NSW-13B @ 9'	7/26/2019	9'	In-Situ	<0.0003	<0.0003	<10.0	82.1	82.1	16.2	98.3	7.42
NSW-14 @ 3.5'	7/31/2019	3.5'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	11.6
NSW-15 @ 3.5'	7/31/2019	3.5'	In-Situ	<0.0003	<0.0003	<10.0	15.2	15.2	<10.0	15.2	10.3
NSW-16 @ 4'	7/31/2019	4'	In-Situ	<0.0003	<0.0003	<10.0	24.8	24.8	<10.0	24.8	18.8
NSW-16 @ 4'	8/2/2019	4'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	11.0
NSW-17 @ 3.5'	8/2/2019	3.5'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	9.39
SW-1	7/18/2019	-	In-Situ	<0.0003	<0.0003	<7.99	<8.11	<8.11	<8.11	<8.11	<0.860
SW-2	7/18/2019	-	In-Situ	<0.0003	<0.0003	<7.99	42.2	42.2	8.60	50.8	<0.860
SW-3	7/18/2019	-	In-Situ	<0.0003	<0.0003	<7.99	<8.11	<8.11	<8.11	<8.11	<0.860
SSW-4A @ 3'	7/22/2019	3'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	6.16
SSW-4B @ 9'	7/22/2019	9'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	5.93
SSW-5A @ 3'	7/22/2019	3'	In-Situ	<0.0003	<0.0003	<10.0	18.9	18.9	<10.0	18.9	3.55
SSW-5B @ 9'	7/22/2019	9'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	7.00
SSW-6 @ 9'	7/22/2019	9'	In-Situ	<0.0003	<0.0003	<10.0	25.2	25.2	<10.0	25.2	8.29
SSW-7 @ 2'	7/22/2019	2'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	2.08
SSW-8 @ 9'	7/22/2019	9'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	4.77
SSW-9 @ 2'	7/22/2019	2'	In-Situ	<0.0003	<0.0003	<10.0	50.2	50.2	23.0	73.2	9.86
SSW-10 @ 9'	7/23/2019	9'	In-Situ	<0.0003	<0.0003	10.0	234	244	25.5	270	3.22
SSW-11 @ 2'	7/23/2019	2'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	0.922
SSW-12A @ 3'	7/25/2019	3'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	2.96
SSW-12B @ 9'	7/25/2019	9'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	3.76
SSW-13 @ 6'	7/26/2019	6'	In-Situ	<0.0003	<0.0003	<10.0	70.8	70.8	14.2	85.0	4.45
SSW-14 @ 3.5'	7/31/2019	3.5'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	9.42
SSW-15 @ 3.5'	7/31/2019	3.5'	In-Situ	<0.0003	<0.0003	<10.0	23.9	23.9	<10.0	23.9	8.95
SSW-16 @ 4'	8/2/2019	4'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	11.50
SSW-17 @ 3.5'	8/2/2019	3.5'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	8.97
WW Comp	7/18/2019	-	In-Situ	<0.0003	<0.0003	<7.99	49.2	49.2	16.4	65.6	<0.860
WSW-7 @ 2'	7/22/2019	2'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	4.21
WSW-12S @ 6'	7/25/2019	6'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	1.45
WSW-12N @ 6'	8/9/2019	6'	In-Situ	0.0008	<0.0003	15.5	967	983	139	1,122	9.88
WSW-12N-b @ 6'	8/26/2019	6'	In-Situ	<0.0003	<0.0003	<10.0	<10.0	<10.0	<10.0	<10.0	3.7
Closure Criteria				10	50	-	-	1,000	-	2,500	20,000

Upon receiving laboratory analytical results from confirmation soil samples, the excavated area was backfilled with locally sourced, non-impacted "like" material.

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 a Release. Tasman on behalf of Plains, respectfully requests the NMOCD grant closure approval for the Todd 15N Federal 14 Tie In which occurred on May 15, 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.

Per BLM representative recommendation, "BLM #2" mix of seed will be utilized for the revegetation of the Site. On NMOCD and BLM approval of the preferred seed mix, the mixture will be broadcast at a rate two (2) times the suggested rate to compensate for broadcasting of the seed and the seeding activities will take place during the next favorable growing season. Following the broadcasting of the seed, mechanical means, such as a screen or disc harrow pulled behind a tractor, will be used to "set" the seed. The "BLM #2" seed mixed will be purchased from a reputable source and the "seed tags" will be retained as proof of seed quantity and quality.

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.

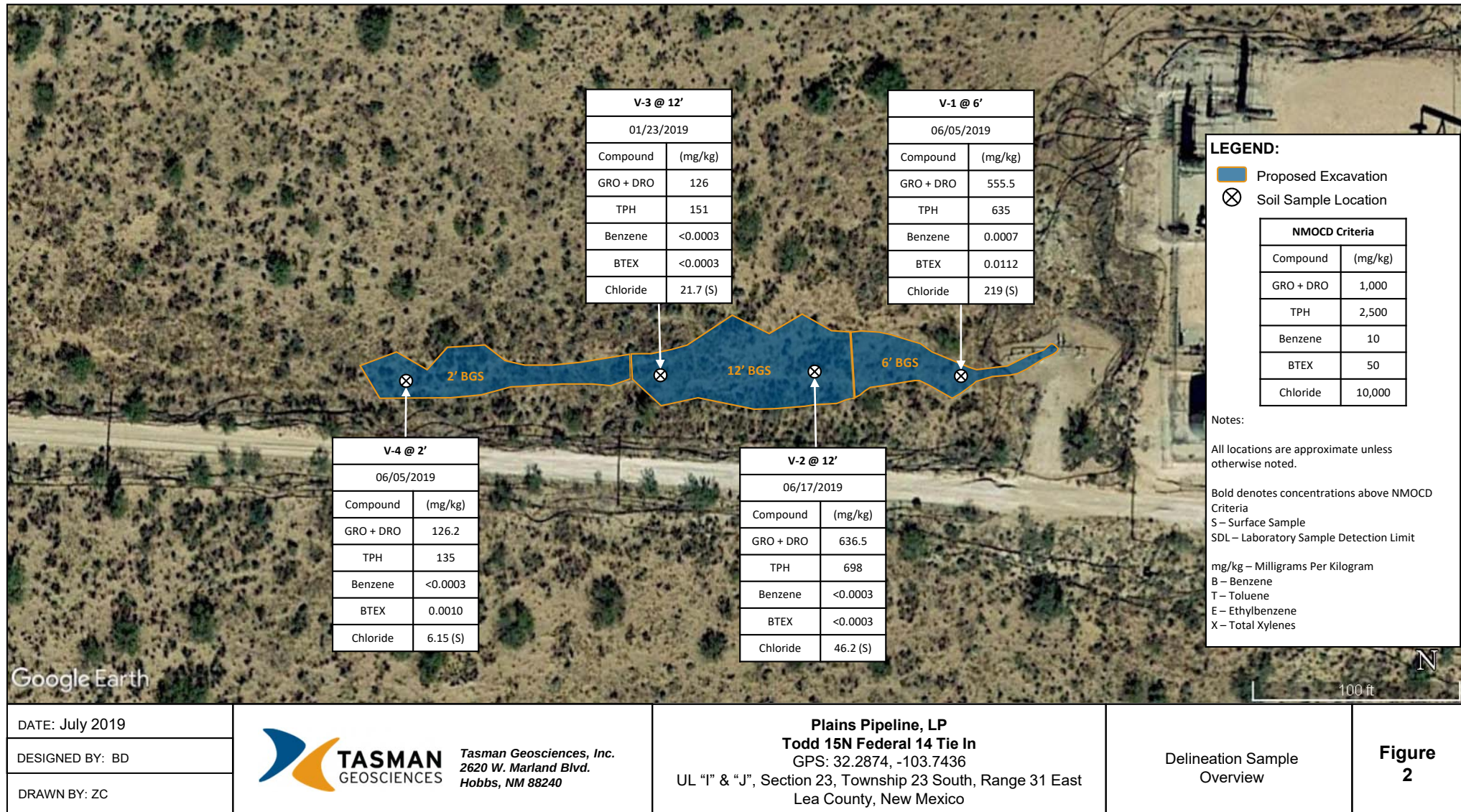
Respectfully,

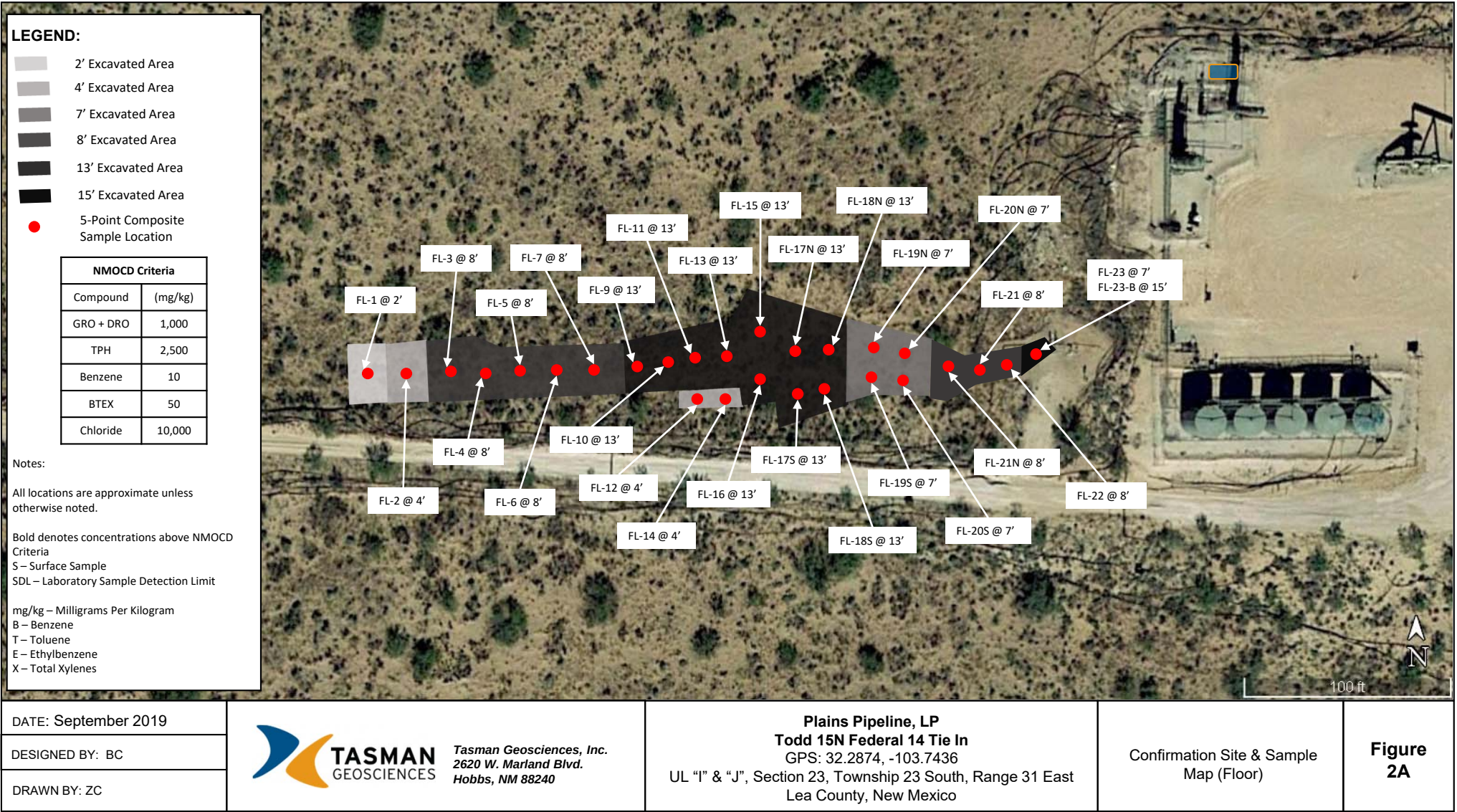
Zach Conder
Program Manager
zconder@tasman-geo.com
(806) 724-5943



Brian Cooper
Construction Supervisor
bcooper@tasman-geo.com
(806) 401-5356

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





DATE: September 2019

DESIGNED BY: BC

DRAWN BY: ZC

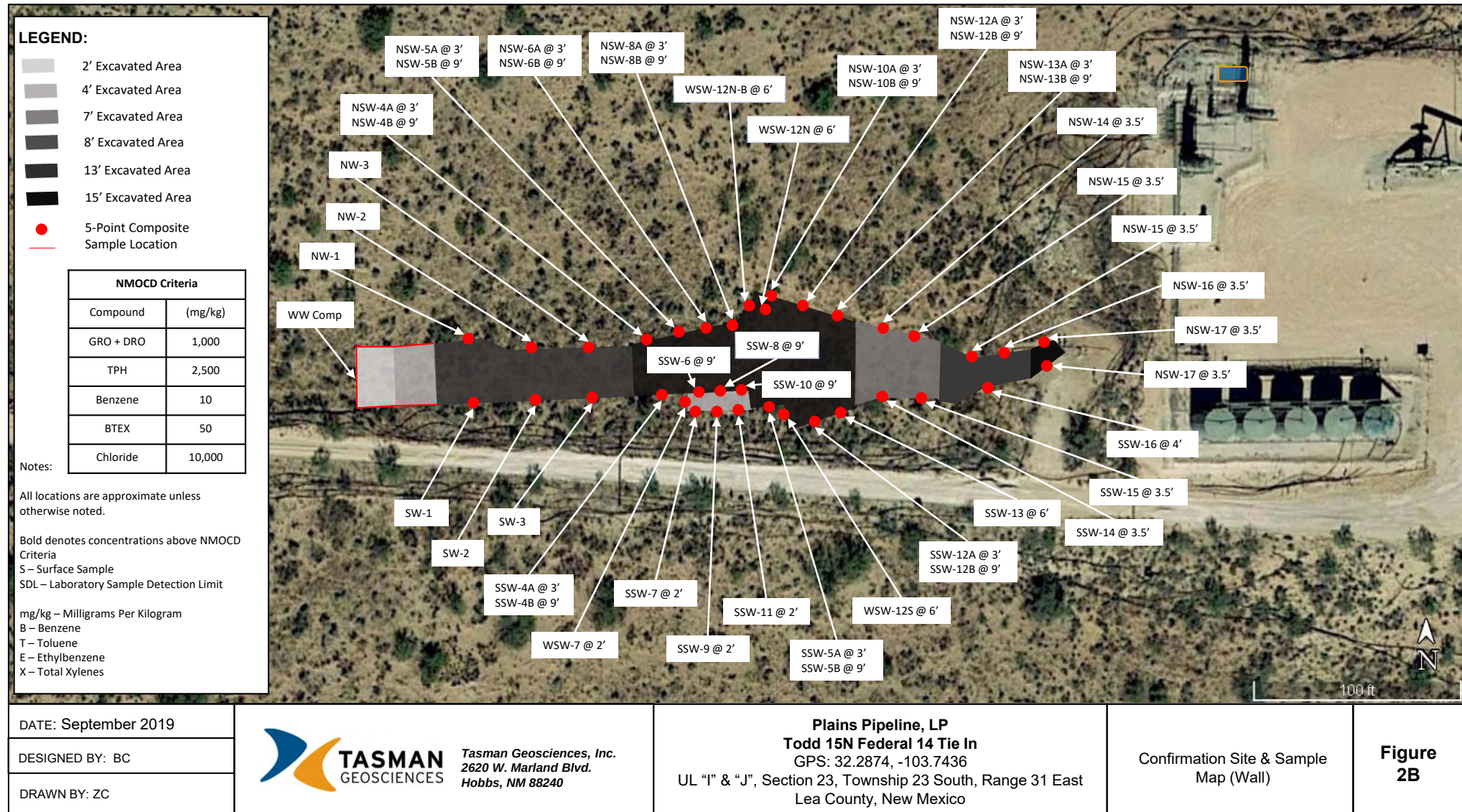
TASMAN
GEOSCIENCES

Tasman Geosciences, Inc.
2620 W. Marland Blvd.
Hobbs, NM 88240

Plains Pipeline, LP
Todd 15N Federal 14 Tie In
GPS: 32.2874, -103.7436
UL "I" & "J", Section 23, Township 23 South, Range 31 East
Lea County, New Mexico

Confirmation Site & Sample
Map (Floor)

**Figure
2A**





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Search Results -- 1 sites found

Agency code = usgs
site_no list =

- 321609103445901

Minimum number of levels = 1
[Save file of selected sites](#) to local disk for future upload

USGS 321609103445901 23S.31E.26.34411

Eddy County, New Mexico
Latitude 32°16'11.9", Longitude 103°45'01.2" NAD83
Land-surface elevation 3,451.00 feet above NGVD29
The depth of the well is 365 feet below land surface.
This well is completed in the Dewey Lake Redbeds (312DYLK) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source of measurement
1959-02-04			D 256.87				2 P		U	
1972-09-20			D 250.47				2		U	
1988-03-17			D 249.02				2		S	
2013-01-16	17:00 MST	m	101.55				2 P	S	USGS	
2013-02-14	08:00 MST	m					P	S	USGS	

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level date-time accuracy	m	Date is accurate to the Minute
Water-level accuracy		Not determined
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Status	P	Site was being pumped.
Method of measurement	S	Steel-tape measurement.
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Measuring agency	USGS	U.S. Geological Survey

5/22/2019

USGS Groundwater for USA: Water Levels -- 1 sites

Section	Code	Description
Source of measurement	R	Reported by person other than the owner, driller, or another government agency.
Source of measurement	S	Measured by personnel of reporting agency.
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.
Water-level approval status	P	Provisional data subject to revision.

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Title: Groundwater for USA: Water Levels
URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>



Page Contact Information: [USGS Water Data Support Team](#)
Page Last Modified: 2019-05-22 12:35:26 EDT
0.46 0.43 nadww02



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Data Category:

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Groundwater levels for the Nation

Search Results -- 1 sites found

Agency code = usgs

site_no list =

- 321809103481801

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

USGS 321809103481801 23S.31E.17.31141

Eddy County, New Mexico
Latitude 32°18'11.3", Longitude 103°48'23.4" NAD83
Land-surface elevation 3,326.00 feet above NGVD29
The depth of the well is 354 feet below land surface.
This well is completed in the Rustler Formation (312RSLR) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source of measurement
1959-02-04			D110.84				2P		U	
1987-10-15			D111.20				2		U	
1992-11-04			D109.68				2		S	
2013-01-16	16:30 MST	m	128.64				2R		SUSGS	

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level date-time accuracy	m	Date is accurate to the Minute
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Status	P	Site was being pumped.
Status	R	Site had been pumped recently.
Method of measurement	S	Steel-tape measurement.
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Measuring agency	USGS	U.S. Geological Survey
Source of measurement	S	Measured by personnel of reporting agency.

7/8/2019

USGS Groundwater for USA: Water Levels -- 1 sites

Section	Code	Description
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

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Title: Groundwater for USA: Water Levels
URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>



Page Contact Information: [USGS Water Data Support Team](#)
Page Last Modified: 2019-07-08 14:18:33 EDT
0.48 0.42 nadww01



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,
O=orphaned,
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 02258	C		ED	3	2	26	23S	31E		618055	3571853*	1159	662		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 618305.28

Northing (Y): 3572985.26

Radius: 1700

*UTM location was derived from PLSS - see Help

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

Analytical Report 627091

for

Tasman Geosciences, LLC

Project Manager: Zach Conder

Todd 15N Federal 14 Tie In 4 Release

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): **627091**
Todd 15N Federal 14 Tie In 4 Release
Project Address: Eddy 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) 627091. 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. 627091 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

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

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Sample Cross Reference 627091



Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
V-1 @ S	S	06-05-19 00:00		627091-001
V-1 @ 1'	S	06-05-19 00:00	1 ft	627091-002
V-1 @ 2'	S	06-05-19 00:00	2 ft	627091-003
V-1 @ 3'	S	06-05-19 00:00	3 ft	627091-004
V-1 @ 4'	S	06-05-19 00:00	4 ft	627091-005
V-1 @ 5'	S	06-05-19 00:00	5 ft	627091-006
V-1 @ 6'	S	06-05-19 00:00	6 ft	627091-007
V-1 @ 7'	S	06-05-19 00:00	7 ft	627091-008
V-4 @ S	S	06-05-19 00:00	ft	627091-009
V-4 @ 1'	S	06-05-19 00:00	1 ft	627091-010
V-4 @ 2'	S	06-05-19 00:00	2 ft	627091-011
V-4 @ 3'	S	06-05-19 00:00	3 ft	627091-012
V-4 @ 4'	S	06-05-19 00:00	4 ft	627091-013
V-4 @ 5'	S	06-05-19 00:00	5 ft	627091-014
V-4 @ 6'	S	06-05-19 00:00	6 ft	627091-015
V-4 @ 7'	S	06-05-19 00:00	7 ft	627091-016

**CASE NARRATIVE****Client Name: Tasman Geosciences, LLC****Project Name: Todd 15N Federal 14 Tie In 4 Release**

Project ID:

Work Order Number(s): 627091

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.

Batch: LBA-3092131 TPH by SW8015 Mod

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

Samples affected are: 627091-001.

Batch: LBA-3092423 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: 627091-002,627091-003,627091-004,627091-010,627091-006,627091-009,627091-005.



Certificate of Analytical Results

627091



Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: V-1 @ S

Matrix: Soil

Sample Depth:

Lab Sample Id: 627091-001

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: 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	219	4.95	0.850	mg/kg	06.11.19 16:07		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3092131

Date Prep: 06.12.19 14.00

Prep seq: 7679805

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	818	150	79.8	mg/kg	06.13.19 08:33		10
Diesel Range Organics (DRO)	C10C28DRO	8970	150	81.0	mg/kg	06.13.19 08:33		10
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	857	150	81.0	mg/kg	06.13.19 08:33		10
Total TPH	PHC635	10600		79.8	mg/kg	06.13.19 08:33		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	110	70 - 135	%		
o-Terphenyl	185	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	0.284	0.398	0.0765	mg/kg	06.14.19 04:39	J	199
Toluene	108-88-3	1.28	0.398	0.0906	mg/kg	06.14.19 04:39		199
Ethylbenzene	100-41-4	1.84	0.398	0.112	mg/kg	06.14.19 04:39		199
m_p-Xylenes	179601-23-1	8.68	0.795	0.202	mg/kg	06.14.19 04:39		199
o-Xylene	95-47-6	4.28	0.398	0.0685	mg/kg	06.14.19 04:39		199
Xylenes, Total	1330-20-7	13.0		0.0685	mg/kg	06.14.19 04:39		
Total BTEX		16.4		0.0685	mg/kg	06.14.19 04:39		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	112	70 - 130	%		



Certificate of Analytical Results

627091



Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: V-1 @ 1'

Matrix: Soil

Sample Depth: 1 ft

Lab Sample Id: 627091-002

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: 3092131

Date Prep: 06.12.19 14.00

Prep seq: 7679805

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	351	74.9	39.9	mg/kg	06.13.19 08:58		5
Diesel Range Organics (DRO)	C10C28DRO	3960	74.9	40.6	mg/kg	06.13.19 08:58		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	255	74.9	40.6	mg/kg	06.13.19 08:58		5
Total TPH	PHC635	4570		39.9	mg/kg	06.13.19 08:58		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	119	70 - 135	%		
o-Terphenyl	118	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	0.000391	0.00200	0.000386	mg/kg	06.13.19 22:13	J	1
Toluene	108-88-3	0.0247	0.00200	0.000457	mg/kg	06.13.19 22:13		1
Ethylbenzene	100-41-4	0.0168	0.00200	0.000566	mg/kg	06.13.19 22:13		1
m_p-Xylenes	179601-23-1	0.128	0.00401	0.00102	mg/kg	06.13.19 22:13		1
o-Xylene	95-47-6	0.106	0.00200	0.000345	mg/kg	06.13.19 22:13		1
Xylenes, Total	1330-20-7	0.234		0.000345	mg/kg	06.13.19 22:13		
Total BTEX		0.276		0.000345	mg/kg	06.13.19 22:13		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	177	70 - 130	%		**



Certificate of Analytical Results

627091



Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: V-1 @ 2'

Matrix: Soil

Sample Depth: 2 ft

Lab Sample Id: 627091-003

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: 3091980

Date Prep: 06.11.19 16.00

Prep seq: 7679721

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	638	74.8	39.9	mg/kg	06.12.19 02:16		5
Diesel Range Organics (DRO)	C10C28DRO	5580	74.8	40.5	mg/kg	06.12.19 02:16		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	671	74.8	40.5	mg/kg	06.12.19 02:16		5
Total TPH	PHC635	6890		39.9	mg/kg	06.12.19 02:16		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	127	70 - 135	%		
o-Terphenyl	125	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	0.000785	0.00201	0.000387	mg/kg	06.13.19 22:32	J	1
Toluene	108-88-3	0.0133	0.00201	0.000458	mg/kg	06.13.19 22:32		1
Ethylbenzene	100-41-4	0.0544	0.00201	0.000568	mg/kg	06.13.19 22:32		1
m_p-Xylenes	179601-23-1	0.286	0.00402	0.00102	mg/kg	06.13.19 22:32		1
o-Xylene	95-47-6	0.210	0.00201	0.000346	mg/kg	06.13.19 22:32		1
Xylenes, Total	1330-20-7	0.496		0.000346	mg/kg	06.13.19 22:32		
Total BTEX		0.564		0.000346	mg/kg	06.13.19 22:32		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	262	70 - 130	%		**



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: V-1 @ 3' Matrix: Soil Sample Depth: 3 ft
 Lab Sample Id: 627091-004 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: 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	13.1	4.95	0.850	mg/kg	06.11.19 16:14		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
 Analyst: ARM % Moist: Tech: ARM
 Seq Number: 3091980 Date Prep: 06.11.19 16.00
 Prep seq: 7679721

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	1450	74.8	39.9	mg/kg	06.12.19 02:35		5
Diesel Range Organics (DRO)	C10C28DRO	9890	74.8	40.5	mg/kg	06.12.19 02:35		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	1190	74.8	40.5	mg/kg	06.12.19 02:35		5
Total TPH	PHC635	12500		39.9	mg/kg	06.12.19 02:35		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	116	70 - 135	%		
o-Terphenyl	117	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	0.00471	0.00199	0.000383	mg/kg	06.13.19 22:51		1
Toluene	108-88-3	0.0197	0.00199	0.000453	mg/kg	06.13.19 22:51		1
Ethylbenzene	100-41-4	0.0703	0.00199	0.000561	mg/kg	06.13.19 22:51		1
m_p-Xylenes	179601-23-1	0.366	0.00398	0.00101	mg/kg	06.13.19 22:51		1
o-Xylene	95-47-6	0.270	0.00199	0.000342	mg/kg	06.13.19 22:51		1
Xylenes, Total	1330-20-7	0.636		0.000342	mg/kg	06.13.19 22:51		
Total BTEX		0.731		0.000342	mg/kg	06.13.19 22:51		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	106	70 - 130	%		
4-Bromofluorobenzene	314	70 - 130	%		**



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: V-1 @ 4'

Matrix: Soil

Sample Depth: 4 ft

Lab Sample Id: 627091-005

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: 3091980

Date Prep: 06.11.19 16.00

Prep seq: 7679721

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	757	74.9	40.0	mg/kg	06.12.19 02:54		5
Diesel Range Organics (DRO)	C10C28DRO	7120	74.9	40.6	mg/kg	06.12.19 02:54		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	876	74.9	40.6	mg/kg	06.12.19 02:54		5
Total TPH	PHC635	8750		40.0	mg/kg	06.12.19 02:54		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	101	70 - 135	%		
o-Terphenyl	82	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	0.00131	0.00200	0.000385	mg/kg	06.13.19 23:10	J	1
Toluene	108-88-3	0.0110	0.00200	0.000456	mg/kg	06.13.19 23:10		1
Ethylbenzene	100-41-4	0.0329	0.00200	0.000565	mg/kg	06.13.19 23:10		1
m_p-Xylenes	179601-23-1	0.196	0.00400	0.00101	mg/kg	06.13.19 23:10		1
o-Xylene	95-47-6	0.142	0.00200	0.000344	mg/kg	06.13.19 23:10		1
Xylenes, Total	1330-20-7	0.338		0.000344	mg/kg	06.13.19 23:10		
Total BTEX		0.383		0.000344	mg/kg	06.13.19 23:10		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	97	70 - 130	%		
4-Bromofluorobenzene	360	70 - 130	%		**



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: V-1 @ 5'

Matrix: Soil

Sample Depth: 5 ft

Lab Sample Id: 627091-006

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: 3091980

Date Prep: 06.11.19 16.00

Prep seq: 7679721

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	524	75.0	40.0	mg/kg	06.12.19 03:14		5
Diesel Range Organics (DRO)	C10C28DRO	5290	75.0	40.6	mg/kg	06.12.19 03:14		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	643	75.0	40.6	mg/kg	06.12.19 03:14		5
Total TPH	PHC635	6460		40.0	mg/kg	06.12.19 03:14		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	112	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	0.000643	0.00201	0.000386	mg/kg	06.13.19 23:29	J	1
Toluene	108-88-3	0.00836	0.00201	0.000457	mg/kg	06.13.19 23:29		1
Ethylbenzene	100-41-4	0.0295	0.00201	0.000567	mg/kg	06.13.19 23:29		1
m_p-Xylenes	179601-23-1	0.155	0.00402	0.00102	mg/kg	06.13.19 23:29		1
o-Xylene	95-47-6	0.115	0.00201	0.000346	mg/kg	06.13.19 23:29		1
Xylenes, Total	1330-20-7	0.270		0.000346	mg/kg	06.13.19 23:29		
Total BTEX		0.309		0.000346	mg/kg	06.13.19 23:29		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	227	70 - 130	%		**



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: V-1 @ 6'

Matrix: Soil

Sample Depth: 6 ft

Lab Sample Id: 627091-007

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: 3091980

Date Prep: 06.11.19 16.00

Prep seq: 7679721

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	14.5	15.0	7.99	mg/kg	06.12.19 03:33	J	1
Diesel Range Organics (DRO)	C10C28DRO	541	15.0	8.11	mg/kg	06.12.19 03:33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	79.1	15.0	8.11	mg/kg	06.12.19 03:33		1
Total TPH	PHC635	635		7.99	mg/kg	06.12.19 03:33		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	99	70 - 135	%		
o-Terphenyl	108	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	0.000795	0.00201	0.000387	mg/kg	06.13.19 23:48	J	1
Toluene	108-88-3	0.000614	0.00201	0.000458	mg/kg	06.13.19 23:48	J	1
Ethylbenzene	100-41-4	0.000956	0.00201	0.000568	mg/kg	06.13.19 23:48	J	1
m_p-Xylenes	179601-23-1	0.00488	0.00402	0.00102	mg/kg	06.13.19 23:48		1
o-Xylene	95-47-6	0.00392	0.00201	0.000346	mg/kg	06.13.19 23:48		1
Xylenes, Total	1330-20-7	0.00880		0.000346	mg/kg	06.13.19 23:48		
Total BTEX		0.0112		0.000346	mg/kg	06.13.19 23:48		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	97	70 - 130	%		
4-Bromofluorobenzene	100	70 - 130	%		



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: V-1 @ 7' Matrix: Soil Sample Depth: 7 ft
 Lab Sample Id: 627091-008 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: 3092072 Date Prep: 06.12.19 08.30
 Prep seq: 7679680

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	1.36	4.97	0.853	mg/kg	06.12.19 09:16	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
 Analyst: ARM % Moist: Tech: ARM
 Seq Number: 3091980 Date Prep: 06.11.19 16.00
 Prep seq: 7679721

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 03:52	U	1
Diesel Range Organics (DRO)	C10C28DRO	196	15.0	8.11	mg/kg	06.12.19 03:52		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	29.9	15.0	8.11	mg/kg	06.12.19 03:52		1
Total TPH	PHC635	226		7.99	mg/kg	06.12.19 03:52		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	117	70 - 135	%		
o-Terphenyl	123	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	<0.000382	0.00198	0.000382	mg/kg	06.14.19 00:07	U	1
Toluene	108-88-3	0.000724	0.00198	0.000452	mg/kg	06.14.19 00:07	J	1
Ethylbenzene	100-41-4	0.00175	0.00198	0.000560	mg/kg	06.14.19 00:07	J	1
m_p-Xylenes	179601-23-1	0.00148	0.00397	0.00101	mg/kg	06.14.19 00:07	J	1
o-Xylene	95-47-6	0.00104	0.00198	0.000342	mg/kg	06.14.19 00:07	J	1
Xylenes, Total	1330-20-7	0.00252		0.000342	mg/kg	06.14.19 00:07		
Total BTEX		0.00499		0.000342	mg/kg	06.14.19 00:07		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	92	70 - 130	%		



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: V-4 @ S

Matrix: Soil

Sample Depth:

Lab Sample Id: 627091-009

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: 3092072

Date Prep: 06.12.19 08.30

Prep seq: 7679680

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	6.15	5.02	0.862	mg/kg	06.12.19 09:37		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	480	15.0	7.98	mg/kg	06.11.19 03:09		1
Diesel Range Organics (DRO)	C10C28DRO	4940	15.0	8.10	mg/kg	06.11.19 03:09		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	328	15.0	8.10	mg/kg	06.11.19 03:09		1
Total TPH	PHC635	5750		7.98	mg/kg	06.11.19 03:09		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	84	70 - 135	%		
o-Terphenyl	109	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	0.00456	0.00200	0.000386	mg/kg	06.14.19 00:26		1
Toluene	108-88-3	0.0414	0.00200	0.000457	mg/kg	06.14.19 00:26		1
Ethylbenzene	100-41-4	0.0665	0.00200	0.000566	mg/kg	06.14.19 00:26		1
m_p-Xylenes	179601-23-1	0.296	0.00401	0.00102	mg/kg	06.14.19 00:26		1
o-Xylene	95-47-6	0.170	0.00200	0.000345	mg/kg	06.14.19 00:26		1
Xylenes, Total	1330-20-7	0.466		0.000345	mg/kg	06.14.19 00:26		
Total BTEX		0.578		0.000345	mg/kg	06.14.19 00:26		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	267	70 - 130	%		**



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: V-4 @ 1'

Matrix: Soil

Sample Depth: 1 ft

Lab Sample Id: 627091-010

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: 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	339	15.0	7.99	mg/kg	06.11.19 03:33		1
Diesel Range Organics (DRO)	C10C28DRO	3760	15.0	8.12	mg/kg	06.11.19 03:33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	191	15.0	8.12	mg/kg	06.11.19 03:33		1
Total TPH	PHC635	4290		7.99	mg/kg	06.11.19 03:33		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	104	70 - 135	%		
o-Terphenyl	104	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	0.000389	0.00200	0.000384	mg/kg	06.14.19 00:46	J	1
Toluene	108-88-3	0.0708	0.00200	0.000455	mg/kg	06.14.19 00:46		1
Ethylbenzene	100-41-4	0.0516	0.00200	0.000564	mg/kg	06.14.19 00:46		1
m_p-Xylenes	179601-23-1	0.298	0.00399	0.00101	mg/kg	06.14.19 00:46		1
o-Xylene	95-47-6	0.357	0.00200	0.000344	mg/kg	06.14.19 00:46		1
Xylenes, Total	1330-20-7	0.655		0.000344	mg/kg	06.14.19 00:46		
Total BTEX		0.778		0.000344	mg/kg	06.14.19 00:46		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	98	70 - 130	%		
4-Bromofluorobenzene	463	70 - 130	%		**



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: V-4 @ 2'

Matrix: Soil

Sample Depth: 2 ft

Lab Sample Id: 627091-011

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: 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	13.2	14.9	7.97	mg/kg	06.11.19 00:42	J	1
Diesel Range Organics (DRO)	C10C28DRO	113	14.9	8.10	mg/kg	06.11.19 00:42		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	8.76	14.9	8.10	mg/kg	06.11.19 00:42	J	1
Total TPH	PHC635	135		7.97	mg/kg	06.11.19 00:42		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	119	70 - 135	%		
o-Terphenyl	103	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	<0.000382	0.00198	0.000382	mg/kg	06.14.19 01:48	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	06.14.19 01:48	U	1
Ethylbenzene	100-41-4	0.000625	0.00198	0.000560	mg/kg	06.14.19 01:48	J	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	06.14.19 01:48	U	1
o-Xylene	95-47-6	0.000407	0.00198	0.000342	mg/kg	06.14.19 01:48	J	1
Xylenes, Total	1330-20-7	0.000407		0.000342	mg/kg	06.14.19 01:48	J	
Total BTEX		0.00103		0.000342	mg/kg	06.14.19 01:48	J	

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



Certificate of Analytical Results

627091



Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: V-4 @ 3' Matrix: Soil Sample Depth: 3 ft
 Lab Sample Id: 627091-012 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: 3092072 Date Prep: 06.12.19 08.30
 Prep seq: 7679680

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.857	4.99	0.857	mg/kg	06.12.19 09:45	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	13.2	15.0	7.99	mg/kg	06.11.19 01:07	J	1
Diesel Range Organics (DRO)	C10C28DRO	155	15.0	8.12	mg/kg	06.11.19 01:07		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	14.7	15.0	8.12	mg/kg	06.11.19 01:07	J	1
Total TPH	PHC635	183		7.99	mg/kg	06.11.19 01:07		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	109	70 - 135	%		
o-Terphenyl	100	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	0.00201	0.000386	mg/kg	06.14.19 02:07	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	06.14.19 02:07	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	06.14.19 02:07	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.14.19 02:07	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.14.19 02:07	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	06.14.19 02:07	U	
Total BTEX		<0.000346		0.000346	mg/kg	06.14.19 02:07	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	91	70 - 130	%		
4-Bromofluorobenzene	82	70 - 130	%		



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: V-4 @ 4'

Matrix: Soil

Sample Depth: 4 ft

Lab Sample Id: 627091-013

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: 3092072

Date Prep: 06.12.19 08.30

Prep seq: 7679680

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.865	5.04	0.865	mg/kg	06.12.19 09:52	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	14.1	15.0	7.99	mg/kg	06.11.19 01:32	J	1
Diesel Range Organics (DRO)	C10C28DRO	14.6	15.0	8.12	mg/kg	06.11.19 01:32	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.12	15.0	8.12	mg/kg	06.11.19 01:32	U	1
Total TPH	PHC635	28.7		7.99	mg/kg	06.11.19 01:32		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	113	70 - 135	%		
o-Terphenyl	111	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	<0.000384	0.00200	0.000384	mg/kg	06.14.19 17:24	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.14.19 17:24	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.14.19 17:24	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.14.19 17:24	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.14.19 17:24	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	06.14.19 17:24	U	
Total BTEX		<0.000344		0.000344	mg/kg	06.14.19 17:24	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	89	70 - 130	%		



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: V-4 @ 5'

Matrix: Soil

Sample Depth: 5 ft

Lab Sample Id: 627091-014

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: 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	13.4	15.0	8.00	mg/kg	06.11.19 01:56	J	1
Diesel Range Organics (DRO)	C10C28DRO	53.9	15.0	8.13	mg/kg	06.11.19 01:56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	06.11.19 01:56	U	1
Total TPH	PHC635	67.3		8.00	mg/kg	06.11.19 01:56		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	116	70 - 135	%		
o-Terphenyl	112	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	<0.000385	0.00200	0.000385	mg/kg	06.14.19 02:45	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	06.14.19 02:45	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	06.14.19 02:45	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	06.14.19 02:45	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.14.19 02:45	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	06.14.19 02:45	U	
Total BTEX		<0.000344		0.000344	mg/kg	06.14.19 02:45	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	89	70 - 130	%		



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: **V-4 @ 6'** Matrix: Soil Sample Depth: 6 ft
 Lab Sample Id: 627091-015 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: 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	13.8	15.0	7.98	mg/kg	06.11.19 02:21	J	1
Diesel Range Organics (DRO)	C10C28DRO	9.45	15.0	8.10	mg/kg	06.11.19 02:21	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.10	15.0	8.10	mg/kg	06.11.19 02:21	U	1
Total TPH	PHC635	23.3		7.98	mg/kg	06.11.19 02:21		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	111	70 - 135	%		
o-Terphenyl	108	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	<0.000383	0.00199	0.000383	mg/kg	06.14.19 03:04	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	06.14.19 03:04	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	06.14.19 03:04	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.14.19 03:04	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	06.14.19 03:04	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	06.14.19 03:04	U	
Total BTEX		<0.000342		0.000342	mg/kg	06.14.19 03:04	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	80	70 - 130	%		



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: V-4 @ 7'

Matrix: Soil

Sample Depth: 7 ft

Lab Sample Id: 627091-016

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: 3092072

Date Prep: 06.12.19 08.30

Prep seq: 7679680

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.855	4.98	0.855	mg/kg	06.12.19 10:57	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	17.7	15.0	7.99	mg/kg	06.11.19 02:45		1
Diesel Range Organics (DRO)	C10C28DRO	268	15.0	8.11	mg/kg	06.11.19 02:45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	16.5	15.0	8.11	mg/kg	06.11.19 02:45		1
Total TPH	PHC635	302		7.99	mg/kg	06.11.19 02:45		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	119	70 - 135	%		
o-Terphenyl	124	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	<0.000387	0.00201	0.000387	mg/kg	06.14.19 03:23	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	06.14.19 03:23	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	06.14.19 03:23	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.14.19 03:23	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.14.19 03:23	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	06.14.19 03:23	U	
Total BTEX		<0.000346		0.000346	mg/kg	06.14.19 03:23	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	96	70 - 130	%		
4-Bromofluorobenzene	92	70 - 130	%		



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

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	%		

Sample Id: **7679680-1-BLK** Matrix: Solid Sample Depth:
 Lab Sample Id: 7679680-1-BLK Date Collected: Date Received:
 Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
 Analyst: CHE % Moist: Tech: CHE
 Seq Number: 3092072 Date Prep: 06.12.19 08.30
 Prep seq: 7679680

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	06.12.19 08:54	U	1



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

Sample Id: **7679721-1-BLK** Matrix: Solid Sample Depth:
 Lab Sample Id: 7679721-1-BLK Date Collected: Date Received:
 Analytical Method: TPH by SW8015 Mod Prep Method: 1005
 Analyst: ARM % Moist: Tech: ARM
 Seq Number: 3091980 Date Prep: 06.11.19 16.00
 Prep seq: 7679721

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	06.11.19 19:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	06.11.19 19:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	06.11.19 19:50	U	1
Total TPH	PHC635	<8.00		8.00	mg/kg	06.11.19 19:50	U	

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

Sample Id: **7679805-1-BLK** Matrix: Solid Sample Depth:
 Lab Sample Id: 7679805-1-BLK Date Collected: Date Received:
 Analytical Method: TPH by SW8015 Mod Prep Method: 1005
 Analyst: ARM % Moist: Tech: ARM
 Seq Number: 3092131 Date Prep: 06.12.19 14.00
 Prep seq: 7679805

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 22:40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	06.12.19 22:40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	06.12.19 22:40	U	1
Total TPH	PHC635	<8.00		8.00	mg/kg	06.12.19 22:40	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	85	70 - 135	%		



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In 4 Release

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	%		



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: Todd 15N Federal 14 Tie In 4 Release

Work Orders : 627091,

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	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
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	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
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	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
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	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0327	0.0300	109	70-130	
4-Bromofluorobenzene	0.0255	0.0300	85	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	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
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: Todd 15N Federal 14 Tie In 4 Release

Work Orders : 627091,

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 #: 3091980

Sample: 7679721-1-BLK / BLK

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/11/19 19:50

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.6	100	92	70-135	
o-Terphenyl	45.9	50.0	92	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: Todd 15N Federal 14 Tie In 4 Release

Work Orders : 627091,

Project ID:

Lab Batch #: 3091980

Sample: 7679721-1-BKS / BKS

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/11/19 20:10

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	57.8	50.0	116	70-135	

Lab Batch #: 3091980

Sample: 7679721-1-BSD / BSD

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/11/19 20:29

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	58.6	50.0	117	70-135	

Lab Batch #: 3091980

Sample: 627199-001 S / MS

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/11/19 21:08

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	60.0	50.0	120	70-135	

Lab Batch #: 3091980

Sample: 627199-001 SD / MSD

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/11/19 21:27

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	99.8	127	70-135	
o-Terphenyl	61.1	49.9	122	70-135	

Lab Batch #: 3092131

Sample: 7679805-1-BLK / BLK

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/12/19 22:40

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.1	100	94	70-135	
o-Terphenyl	42.7	50.0	85	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: Todd 15N Federal 14 Tie In 4 Release

Work Orders : 627091,

Project ID:

Lab Batch #: 3092131

Sample: 7679805-1-BKS / BKS

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/12/19 23:04

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	43.7	50.0	87	70-135	

Lab Batch #: 3092131

Sample: 7679805-1-BSD / BSD

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/12/19 23:29

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	45.2	50.0	90	70-135	

Lab Batch #: 3092131

Sample: 627201-001 S / MS

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/13/19 00:18

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.4	99.9	93	70-135	
o-Terphenyl	41.3	50.0	83	70-135	

Lab Batch #: 3092131

Sample: 627201-001 SD / MSD

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/13/19 00:42

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	43.7	50.0	87	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: Todd 15N Federal 14 Tie In 4 Release

Work Order #: 627091

Project ID:

Analyst: DVM

Date Prepared: 06/13/2019

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: 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	

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: Todd 15N Federal 14 Tie In 4 Release

Work Order #: 627091

Project ID:

Analyst: CHE

Date Prepared: 06/12/2019

Date Analyzed: 06/12/2019

Lab Batch ID: 3092072

Sample: 7679680-1-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	242	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	

Analyst: ARM

Date Prepared: 06/11/2019

Date Analyzed: 06/11/2019

Lab Batch ID: 3091980

Sample: 7679721-1-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	1090	109	1000	1060	106	3	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1000	1020	102	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



BS / BSD Recoveries



Project Name: Todd 15N Federal 14 Tie In 4 Release

Work Order #: 627091

Project ID:

Analyst: ARM

Date Prepared: 06/12/2019

Date Analyzed: 06/12/2019

Lab Batch ID: 3092131

Sample: 7679805-1-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	1050	105	1000	1020	102	3	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1000	100	1000	1020	102	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 Recoveries

Project Name: Todd 15N Federal 14 Tie In 4 Release



Work Order #: 627091

Lab Batch #: 3092423

Date Analyzed: 06/13/2019

QC- Sample ID: 627089-001 S

Reporting Units: mg/kg

Project ID:

Date Prepared: 06/13/2019

Analyst: DVM

Batch #: 1

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

Version: 1.0%



Form 3 - MS / MSD Recoveries



Project Name: Todd 15N Federal 14 Tie In 4 Release

Work Order # 627091

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: 3092072

QC- Sample ID: 627091-008 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/12/2019

Date Prepared: 06/12/2019

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	1.36	249	271	108	249	271	108	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: Todd 15N Federal 14 Tie In 4 Release

Work Order # 627091

Project ID:

Lab Batch ID: 3092072

QC- Sample ID: 627091-016 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/12/2019

Date Prepared: 06/12/2019

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	<0.855	249	242	97	249	242	97	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	

Lab Batch ID: 3091980

QC- Sample ID: 627199-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/11/2019

Date Prepared: 06/11/2019

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)	<8.00	1000	1150	115	998	1130	113	2	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1130	113	998	1120	112	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.



Form 3 - MS / MSD Recoveries



Project Name: Todd 15N Federal 14 Tie In 4 Release

Work Order # 627091

Project ID:

Lab Batch ID: 3092131

QC- Sample ID: 627201-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/13/2019

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)	10.2	999	940	93	1000	1050	104	11	70-135	20	
Diesel Range Organics (DRO)	<8.12	999	889	89	1000	996	100	11	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)

Page 1 Of 2

San Antonio, Texas (210-509-3334)
Phoenix, Arizona (480-355-0900)
Midland, Texas (432-704-5251)

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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: zoonder@tasman-geo.com Phone No: 806-724-5943						Project Name/Number: Todd TSN Federal 14 Tie In 4 Release Project Location: Eddy County, NM Invoice To: PAALP C/O Amber Groves Invoice:						Xenco Job # 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											
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	RCl	TCLP RCRA8	NORM	Paint Filter	TCLP Benzene	Field Comments		
1	V-1 @ S	Surf.	6/5/2019		S	1	HCl	NaOH/Zn	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	X	X							
2	V-1 @ 1'	1'	6/5/2019		S	1									X	X							
3	V-1 @ 2'	2'	6/5/2019		S	1									X	X							
4	V-1 @ 3'	3'	6/5/2019		S	1									X	X							
5	V-1 @ 4'	4'	6/5/2019		S	1									X	X							
6	V-1 @ 5'	5'	6/5/2019		S	1									X	X							
7	V-1 @ 6'	6'	6/5/2019		S	1									X	X							
8	V-1 @ 7'	7'	6/5/2019		S	1									X	X							
9	V-4 @ S	Surf.	6/5/2019		S	1									X	X							
10	V-4 @ 1'	1'	6/5/2019		S	1									X	X							
11	V-4 @ 2'	2'	6/5/2019		S	1									X	X							
12	V-4 @ 3'	3'	6/5/2019		S	1									X	X							
Turnaround Time (Business days)						Data Deliverable Information						Notes:											
☐ Same Day TAT ☐ 5 Day TAT						☐ Level II Std QC ☐ Level IV (Full Data Pkg raw data)						Please email results to: zconder@tasman-geo.com											
☐ Next Day EMERGENCY ☐ 7 Day TAT						☐ Level III Std QC+ Forms ☐ TRRP Level IV						boriffin@tasman-geo.com											
☐ 2 Day EMERGENCY ☒ Contract TAT						☐ Level 3 (CLP Forms) ☐ UST / RG -411						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: 1. [Signature] Relinquished by: 3. [Signature] Relinquished by: 5. [Signature]												SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY						Received By: 2. [Signature] Relinquished By: 4. [Signature]					
Date Time: Date Time: Date Time:												Date Time: Date Time: Date Time:						Relinquished By: Relinquished By: Relinquished By:					
On Ice Cooler Temp. Thermo. Corr. Factor												Preserved where applicable						On Ice Cooler Temp. Thermo. Corr. Factor					

Dallas Texas (214-902-0500)
www.xencoco.com

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ORIGIN ID: H08A (5/01) 392-1950

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ACTWGT: 49.00 LB MAN
CAD: 0909328/CAFE3211
DIMS: 29x15x14 IN
BILL RECIPIENT

MAIL SERVICES ETC, LLC
4008 N GRIMES
HOBBS, NM 88240
UNITED STATES US

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Page 130140-624 RIT EXP 031919

Analytical Report 628664

for
Tasman Geosciences, LLC

Project Manager: Z Conder

Todd 5 Fed Tie

2019-063

01-JUL-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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01-JUL-19

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

Reference: XENCO Report No(s): **628664**
Todd 5 Fed Tie
Project Address:

Z 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) 628664. 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. 628664 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

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

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Sample Cross Reference 628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
V-2 @ S	S	06-18-19 09:00		628664-001
V-2 @ 1'	S	06-18-19 09:10	1 ft	628664-002
V-2 @ 2'	S	06-18-19 09:20	2 ft	628664-003
V-2 @ 3'	S	06-18-19 09:30	3 ft	628664-004
V-2 @ 4'	S	06-18-19 09:40	4 ft	628664-005
V-2 @ 5'	S	06-18-19 09:50	5 ft	628664-006
V-2 @ 6'	S	06-18-19 10:00	6 ft	628664-007
V-2 @ 7'	S	06-18-19 10:10	7 ft	628664-008
V-2 @ 8'	S	06-18-19 10:20	8 ft	628664-009
V-2 @ 9'	S	06-18-19 10:30	9 ft	628664-010
V-2 @ 10'	S	06-17-19 10:40	10 ft	628664-011
V-2 @ 11'	S	06-17-19 10:50	11 ft	628664-012
V-2 @ 12'	S	06-17-19 11:00	12 ft	628664-013
V-2 @ 13'	S	06-17-19 11:10	13 ft	628664-014
V-2 @ 14'	S	06-17-19 11:20	14 ft	628664-015
V-3 @ S	S	06-17-19 09:00		628664-016
V-3 @ 1'	S	06-17-19 09:10	1 ft	628664-017
V-3 @ 2'	S	06-17-19 09:20	2 ft	628664-018
V-3 @ 3'	S	06-17-19 09:30	3 ft	628664-019
V-3 @ 4'	S	06-17-19 09:40	4 ft	628664-020
V-3 @ 5'	S	06-17-19 09:50	5 ft	628664-021
V-3 @ 6'	S	06-17-19 10:00	6 ft	628664-022
V-3 @ 7'	S	06-17-19 10:10	7 ft	628664-023
V-3 @ 8'	S	06-17-19 10:20	8 ft	628664-024
V-3 @ 9'	S	06-17-19 10:30	9 ft	628664-025
V-3 @ 10'	S	06-17-19 10:40	10 ft	628664-026
V-3 @ 11'	S	06-17-19 10:50	11 ft	628664-027
V-3 @ 12'	S	06-17-19 11:00	12 ft	628664-028
V-3 @ 13'	S	06-17-19 11:10	3 - FT	628664-029
background @ S	S	06-17-19 11:20		628664-030

**CASE NARRATIVE****Client Name: Tasman Geosciences, LLC****Project Name: Todd 5 Fed Tie**Project ID: 2019-063
Work Order Number(s): 628664Report Date: 01-JUL-19
Date Received: 06/21/2019

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-3093435 TPH by SW8015 Mod

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

Samples affected are: 628664-030.

Batch: LBA-3093436 TPH by SW8015 Mod

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

Samples affected are: 628664-017,628664-020,628664-019,628664-018.

Batch: LBA-3093525 Inorganic Anions by EPA 300/300.1

Lab Sample ID 628927-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 628664-023.

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

Batch: LBA-3093943 BTEX by EPA 8021

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

Samples affected are: 628664-027,628664-026,628664-021,628664-024,628664-022.

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

**CASE NARRATIVE****Client Name: Tasman Geosciences, LLC****Project Name: Todd 5 Fed Tie**Project ID: 2019-063
Work Order Number(s): 628664Report Date: 01-JUL-19
Date Received: 06/21/2019

Batch: LBA-3094004 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: 628664-012,628664-001,628664-019,628664-018,628664-017,628664-008,628664-007,628664-016,628664-020,628664-006,628664-005,628664-004,628664-003,628664-002,628664-009.

Lab Sample ID 628664-013 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, 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: 628664-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020.

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

Batch: LBA-3094061 BTEX by EPA 8021

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

Samples affected are: 629400-001 S,628664-023.

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



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-2 @ S

Matrix: Soil

Sample Depth:

Lab Sample Id: 628664-001

Date Collected: 06.18.19 09.00

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093547

Date Prep: 06.25.19 14.00

Prep seq: 7680690

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	46.2	4.95	0.850	mg/kg	06.25.19 15:09		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	498	74.7	39.9	mg/kg	06.25.19 02:06		5
Diesel Range Organics (DRO)	C10C28DRO	11100	74.7	40.5	mg/kg	06.25.19 02:06		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	1510	74.7	40.5	mg/kg	06.25.19 02:06		5
Total TPH	PHC635	13100		39.9	mg/kg	06.25.19 02:06		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	74	70 - 135	%		
o-Terphenyl	75	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00383	0.0199	0.00383	mg/kg	06.30.19 07:06	U	10
Toluene	108-88-3	0.175	0.0199	0.00454	mg/kg	06.30.19 07:06		10
Ethylbenzene	100-41-4	0.228	0.0199	0.00563	mg/kg	06.30.19 07:06		10
m_p-Xylenes	179601-23-1	1.94	0.0398	0.0101	mg/kg	06.30.19 07:06		10
o-Xylene	95-47-6	0.751	0.0199	0.00343	mg/kg	06.30.19 07:06		10
Xylenes, Total	1330-20-7	2.69		0.00343	mg/kg	06.30.19 07:06		
Total BTEX		3.09		0.00343	mg/kg	06.30.19 07:06		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	92	70 - 130	%		
4-Bromofluorobenzene	162	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-2 @ 1'

Matrix: Soil

Sample Depth: 1 ft

Lab Sample Id: 628664-002

Date Collected: 06.18.19 09.10

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093547

Date Prep: 06.25.19 14.00

Prep seq: 7680690

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	3.46	5.05	0.867	mg/kg	06.25.19 15:14	J	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	357	15.0	7.99	mg/kg	06.25.19 02:30		1
Diesel Range Organics (DRO)	C10C28DRO	4990	15.0	8.12	mg/kg	06.25.19 02:30		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	428	15.0	8.12	mg/kg	06.25.19 02:30		1
Total TPH	PHC635	5780		7.99	mg/kg	06.25.19 02:30		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	78	70 - 135	%		
o-Terphenyl	108	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00384	0.0200	0.00384	mg/kg	06.30.19 06:44	U	10
Toluene	108-88-3	0.0261	0.0200	0.00455	mg/kg	06.30.19 06:44		10
Ethylbenzene	100-41-4	0.107	0.0200	0.00564	mg/kg	06.30.19 06:44		10
m_p-Xylenes	179601-23-1	1.62	0.0399	0.0101	mg/kg	06.30.19 06:44		10
o-Xylene	95-47-6	0.702	0.0200	0.00344	mg/kg	06.30.19 06:44		10
Xylenes, Total	1330-20-7	2.32		0.00344	mg/kg	06.30.19 06:44		
Total BTEX		2.46		0.00344	mg/kg	06.30.19 06:44		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	92	70 - 130	%		
4-Bromofluorobenzene	222	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-2 @ 2'

Matrix: Soil

Sample Depth: 2 ft

Lab Sample Id: 628664-003

Date Collected: 06.18.19 09.20

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093547

Date Prep: 06.25.19 14.00

Prep seq: 7680690

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.862	5.02	0.862	mg/kg	06.25.19 15:20	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	455	15.0	7.98	mg/kg	06.25.19 02:55		1
Diesel Range Organics (DRO)	C10C28DRO	4810	15.0	8.10	mg/kg	06.25.19 02:55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	383	15.0	8.10	mg/kg	06.25.19 02:55		1
Total TPH	PHC635	5650		7.98	mg/kg	06.25.19 02:55		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	81	70 - 135	%		
o-Terphenyl	120	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00383	0.0199	0.00383	mg/kg	06.30.19 06:22	U	10
Toluene	108-88-3	0.0747	0.0199	0.00453	mg/kg	06.30.19 06:22		10
Ethylbenzene	100-41-4	0.140	0.0199	0.00561	mg/kg	06.30.19 06:22		10
m_p-Xylenes	179601-23-1	2.02	0.0398	0.0101	mg/kg	06.30.19 06:22		10
o-Xylene	95-47-6	0.670	0.0199	0.00342	mg/kg	06.30.19 06:22		10
Xylenes, Total	1330-20-7	2.69		0.00342	mg/kg	06.30.19 06:22		
Total BTEX		2.90		0.00342	mg/kg	06.30.19 06:22		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	198	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-2 @ 3'

Matrix: Soil

Sample Depth: 3 ft

Lab Sample Id: 628664-004

Date Collected: 06.18.19 09.30

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093547

Date Prep: 06.25.19 14.00

Prep seq: 7680690

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.855	4.98	0.855	mg/kg	06.25.19 15:25	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	543	15.0	8.00	mg/kg	06.25.19 03:19		1
Diesel Range Organics (DRO)	C10C28DRO	4990	15.0	8.13	mg/kg	06.25.19 03:19		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	376	15.0	8.13	mg/kg	06.25.19 03:19		1
Total TPH	PHC635	5910		8.00	mg/kg	06.25.19 03:19		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	85	70 - 135	%		
o-Terphenyl	105	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00383	0.0199	0.00383	mg/kg	06.30.19 06:00	U	10
Toluene	108-88-3	0.0726	0.0199	0.00453	mg/kg	06.30.19 06:00		10
Ethylbenzene	100-41-4	0.307	0.0199	0.00561	mg/kg	06.30.19 06:00		10
m_p-Xylenes	179601-23-1	2.19	0.0398	0.0101	mg/kg	06.30.19 06:00		10
o-Xylene	95-47-6	0.952	0.0199	0.00342	mg/kg	06.30.19 06:00		10
Xylenes, Total	1330-20-7	3.14		0.00342	mg/kg	06.30.19 06:00		
Total BTEX		3.52		0.00342	mg/kg	06.30.19 06:00		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	97	70 - 130	%		
4-Bromofluorobenzene	252	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-2 @ 4'

Matrix: Soil

Sample Depth: 4 ft

Lab Sample Id: 628664-005

Date Collected: 06.18.19 09.40

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093547

Date Prep: 06.25.19 14.00

Prep seq: 7680690

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	06.25.19 15:31	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	487	15.0	7.99	mg/kg	06.25.19 03:44		1
Diesel Range Organics (DRO)	C10C28DRO	4620	15.0	8.11	mg/kg	06.25.19 03:44		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	365	15.0	8.11	mg/kg	06.25.19 03:44		1
Total TPH	PHC635	5470		7.99	mg/kg	06.25.19 03:44		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	76	70 - 135	%		
o-Terphenyl	99	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00382	0.0198	0.00382	mg/kg	06.30.19 05:37	U	10
Toluene	108-88-3	0.107	0.0198	0.00452	mg/kg	06.30.19 05:37		10
Ethylbenzene	100-41-4	0.377	0.0198	0.00560	mg/kg	06.30.19 05:37		10
m_p-Xylenes	179601-23-1	2.71	0.0397	0.0101	mg/kg	06.30.19 05:37		10
o-Xylene	95-47-6	0.928	0.0198	0.00342	mg/kg	06.30.19 05:37		10
Xylenes, Total	1330-20-7	3.64		0.00342	mg/kg	06.30.19 05:37		
Total BTEX		4.12		0.00342	mg/kg	06.30.19 05:37		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	97	70 - 130	%		
4-Bromofluorobenzene	267	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-2 @ 5'

Matrix: Soil

Sample Depth: 5 ft

Lab Sample Id: 628664-006

Date Collected: 06.18.19 09.50

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093547

Date Prep: 06.25.19 14.00

Prep seq: 7680690

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.865	5.04	0.865	mg/kg	06.25.19 15:36	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	585	14.9	7.97	mg/kg	06.25.19 04:08		1
Diesel Range Organics (DRO)	C10C28DRO	4300	14.9	8.10	mg/kg	06.25.19 04:08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	323	14.9	8.10	mg/kg	06.25.19 04:08		1
Total TPH	PHC635	5210		7.97	mg/kg	06.25.19 04:08		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	84	70 - 135	%		
o-Terphenyl	98	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00385	0.0200	0.00385	mg/kg	06.30.19 05:14	U	10
Toluene	108-88-3	0.148	0.0200	0.00456	mg/kg	06.30.19 05:14		10
Ethylbenzene	100-41-4	0.484	0.0200	0.00565	mg/kg	06.30.19 05:14		10
m_p-Xylenes	179601-23-1	3.24	0.0400	0.0101	mg/kg	06.30.19 05:14		10
o-Xylene	95-47-6	1.03	0.0200	0.00344	mg/kg	06.30.19 05:14		10
Xylenes, Total	1330-20-7	4.27		0.00344	mg/kg	06.30.19 05:14		
Total BTEX		4.90		0.00344	mg/kg	06.30.19 05:14		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	246	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-2 @ 6'

Matrix: Soil

Sample Depth: 6 ft

Lab Sample Id: 628664-007

Date Collected: 06.18.19 10.00

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093547

Date Prep: 06.25.19 14.00

Prep seq: 7680690

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.853	4.97	0.853	mg/kg	06.25.19 15:53	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	1190	74.7	39.9	mg/kg	06.25.19 10:13		5
Diesel Range Organics (DRO)	C10C28DRO	5480	74.7	40.5	mg/kg	06.25.19 10:13		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	350	74.7	40.5	mg/kg	06.25.19 10:13		5
Total TPH	PHC635	7020		39.9	mg/kg	06.25.19 10:13		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	101	70 - 135	%		
o-Terphenyl	120	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.0192	0.0998	0.0192	mg/kg	06.30.19 04:06	U	50
Toluene	108-88-3	0.697	0.0998	0.0227	mg/kg	06.30.19 04:06		50
Ethylbenzene	100-41-4	1.24	0.0998	0.0282	mg/kg	06.30.19 04:06		50
m_p-Xylenes	179601-23-1	5.16	0.200	0.0506	mg/kg	06.30.19 04:06		50
o-Xylene	95-47-6	1.64	0.0998	0.0172	mg/kg	06.30.19 04:06		50
Xylenes, Total	1330-20-7	6.80		0.0172	mg/kg	06.30.19 04:06		
Total BTEX		8.74		0.0172	mg/kg	06.30.19 04:06		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	90	70 - 130	%		
4-Bromofluorobenzene	142	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-2 @ 7'

Matrix: Soil

Sample Depth: 7 ft

Lab Sample Id: 628664-008

Date Collected: 06.18.19 10.10

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093547

Date Prep: 06.25.19 14.00

Prep seq: 7680690

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.853	4.97	0.853	mg/kg	06.25.19 15:58	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	1380	74.9	40.0	mg/kg	06.25.19 10:38		5
Diesel Range Organics (DRO)	C10C28DRO	7220	74.9	40.6	mg/kg	06.25.19 10:38		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	468	74.9	40.6	mg/kg	06.25.19 10:38		5
Total TPH	PHC635	9070		40.0	mg/kg	06.25.19 10:38		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	101	70 - 135	%		
o-Terphenyl	129	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0813	0.100	0.0193	mg/kg	06.30.19 03:43	J	50
Toluene	108-88-3	2.16	0.100	0.0229	mg/kg	06.30.19 03:43		50
Ethylbenzene	100-41-4	2.42	0.100	0.0284	mg/kg	06.30.19 03:43		50
m_p-Xylenes	179601-23-1	8.37	0.201	0.0509	mg/kg	06.30.19 03:43		50
o-Xylene	95-47-6	2.89	0.100	0.0173	mg/kg	06.30.19 03:43		50
Xylenes, Total	1330-20-7	11.3		0.0173	mg/kg	06.30.19 03:43		
Total BTEX		15.9		0.0173	mg/kg	06.30.19 03:43		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	86	70 - 130	%		
4-Bromofluorobenzene	162	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-2 @ 8'

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 628664-009

Date Collected: 06.18.19 10.20

Date Received: 06.21.19 11.34

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	129	15.0	7.99	mg/kg	06.25.19 05:22		1
Diesel Range Organics (DRO)	C10C28DRO	1890	15.0	8.11	mg/kg	06.25.19 05:22		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	165	15.0	8.11	mg/kg	06.25.19 05:22		1
Total TPH	PHC635	2180		7.99	mg/kg	06.25.19 05:22		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	99	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	06.30.19 12:12	U	1
Toluene	108-88-3	0.00714	0.00200	0.000457	mg/kg	06.30.19 12:12		1
Ethylbenzene	100-41-4	0.0159	0.00200	0.000566	mg/kg	06.30.19 12:12		1
m_p-Xylenes	179601-23-1	0.0552	0.00401	0.00102	mg/kg	06.30.19 12:12		1
o-Xylene	95-47-6	0.0228	0.00200	0.000345	mg/kg	06.30.19 12:12		1
Xylenes, Total	1330-20-7	0.0780		0.000345	mg/kg	06.30.19 12:12		
Total BTEX		0.101		0.000345	mg/kg	06.30.19 12:12		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	91	70 - 130	%		
4-Bromofluorobenzene	162	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-2 @ 9'

Matrix: Soil

Sample Depth: 9 ft

Lab Sample Id: 628664-010

Date Collected: 06.18.19 10.30

Date Received: 06.21.19 11.34

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	24.1	15.0	7.99	mg/kg	06.25.19 06:11		1
Diesel Range Organics (DRO)	C10C28DRO	900	15.0	8.12	mg/kg	06.25.19 06:11		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	89.0	15.0	8.12	mg/kg	06.25.19 06:11		1
Total TPH	PHC635	1010		7.99	mg/kg	06.25.19 06:11		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	80	70 - 135	%		
o-Terphenyl	83	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	06.30.19 11:50	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	06.30.19 11:50	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	06.30.19 11:50	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.30.19 11:50	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.30.19 11:50	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	06.30.19 11:50	U	
Total BTEX		<0.000346		0.000346	mg/kg	06.30.19 11:50	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	91	70 - 130	%		
4-Bromofluorobenzene	122	70 - 130	%		



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-2 @ 10'

Matrix: Soil

Sample Depth: 10 ft

Lab Sample Id: 628664-011

Date Collected: 06.17.19 10.40

Date Received: 06.21.19 11.34

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	8.22	15.0	7.99	mg/kg	06.25.19 00:54	J	1
Diesel Range Organics (DRO)	C10C28DRO	52.8	15.0	8.12	mg/kg	06.25.19 00:54		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.12	15.0	8.12	mg/kg	06.25.19 00:54	U	1
Total TPH	PHC635	61.0		7.99	mg/kg	06.25.19 00:54		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	92	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	06.30.19 11:28	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	06.30.19 11:28	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	06.30.19 11:28	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	06.30.19 11:28	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	06.30.19 11:28	U	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	06.30.19 11:28	U	
Total BTEX		<0.000345		0.000345	mg/kg	06.30.19 11:28	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	91	70 - 130	%		
4-Bromofluorobenzene	112	70 - 130	%		



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-2 @11'

Matrix: Soil

Sample Depth: 11 ft

Lab Sample Id: 628664-012

Date Collected: 06.17.19 10:50

Date Received: 06.21.19 11:34

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14:00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	74.5	15.0	7.98	mg/kg	06.25.19 06:36		1
Diesel Range Organics (DRO)	C10C28DRO	1870	15.0	8.10	mg/kg	06.25.19 06:36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	145	15.0	8.10	mg/kg	06.25.19 06:36		1
Total TPH	PHC635	2090		7.98	mg/kg	06.25.19 06:36		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	82	70 - 135	%		
o-Terphenyl	95	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17:08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	06.30.19 11:06	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	06.30.19 11:06	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	06.30.19 11:06	U	1
m_p-Xylenes	179601-23-1	0.0134	0.00402	0.00102	mg/kg	06.30.19 11:06		1
o-Xylene	95-47-6	0.0147	0.00201	0.000346	mg/kg	06.30.19 11:06		1
Xylenes, Total	1330-20-7	0.0281		0.000346	mg/kg	06.30.19 11:06		
Total BTEX		0.0281		0.000346	mg/kg	06.30.19 11:06		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	92	70 - 130	%		
4-Bromofluorobenzene	139	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-2 @12'

Matrix: Soil

Sample Depth: 12 ft

Lab Sample Id: 628664-013

Date Collected: 06.17.19 11.00

Date Received: 06.21.19 11.34

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	16.5	14.9	7.97	mg/kg	06.25.19 07:00		1
Diesel Range Organics (DRO)	C10C28DRO	620	14.9	8.10	mg/kg	06.25.19 07:00		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	61.0	14.9	8.10	mg/kg	06.25.19 07:00		1
Total TPH	PHC635	698		7.97	mg/kg	06.25.19 07:00		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	87	70 - 135	%		
o-Terphenyl	83	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	06.30.19 10:44	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	06.30.19 10:44	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	06.30.19 10:44	UX	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.30.19 10:44	UX	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.30.19 10:44	UX	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	06.30.19 10:44	U	
Total BTEX		<0.000346		0.000346	mg/kg	06.30.19 10:44	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	89	70 - 130	%		
4-Bromofluorobenzene	115	70 - 130	%		



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-2 @ 13'

Matrix: Soil

Sample Depth: 13 ft

Lab Sample Id: 628664-014

Date Collected: 06.17.19 11.10

Date Received: 06.21.19 11.34

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	10.3	15.0	7.99	mg/kg	06.25.19 07:24	J	1
Diesel Range Organics (DRO)	C10C28DRO	343	15.0	8.12	mg/kg	06.25.19 07:24		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	42.0	15.0	8.12	mg/kg	06.25.19 07:24		1
Total TPH	PHC635	395		7.99	mg/kg	06.25.19 07:24		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	83	70 - 135	%		
o-Terphenyl	80	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	06.30.19 12:56	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	06.30.19 12:56	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	06.30.19 12:56	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	06.30.19 12:56	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	06.30.19 12:56	U	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	06.30.19 12:56	U	
Total BTEX		<0.000345		0.000345	mg/kg	06.30.19 12:56	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	115	70 - 130	%		



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-2 @ 14'

Matrix: Soil

Sample Depth: 14 ft

Lab Sample Id: 628664-015

Date Collected: 06.17.19 11.20

Date Received: 06.21.19 11.34

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

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	06.25.19 07:48	U	1
Diesel Range Organics (DRO)	C10C28DRO	62.8	15.0	8.10	mg/kg	06.25.19 07:48		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	24.1	15.0	8.10	mg/kg	06.25.19 07:48		1
Total TPH	PHC635	86.9		7.98	mg/kg	06.25.19 07:48		

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

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	06.30.19 12:34	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	06.30.19 12:34	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	06.30.19 12:34	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.30.19 12:34	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.30.19 12:34	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	06.30.19 12:34	U	
Total BTEX		<0.000346		0.000346	mg/kg	06.30.19 12:34	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	96	70 - 130	%		
4-Bromofluorobenzene	120	70 - 130	%		



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-3 @ S

Matrix: Soil

Sample Depth:

Lab Sample Id: 628664-016

Date Collected: 06.17.19 09.00

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093547

Date Prep: 06.25.19 14.00

Prep seq: 7680690

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	21.7	4.97	0.853	mg/kg	06.25.19 16:15		1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	631	74.9	39.9	mg/kg	06.25.19 08:12		5
Diesel Range Organics (DRO)	C10C28DRO	16300	74.9	40.6	mg/kg	06.25.19 08:12		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	1520	74.9	40.6	mg/kg	06.25.19 08:12		5
Total TPH	PHC635	18500		39.9	mg/kg	06.25.19 08:12		

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

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00384	0.0200	0.00384	mg/kg	06.30.19 04:29	U	10
Toluene	108-88-3	0.208	0.0200	0.00455	mg/kg	06.30.19 04:29		10
Ethylbenzene	100-41-4	0.458	0.0200	0.00564	mg/kg	06.30.19 04:29		10
m_p-Xylenes	179601-23-1	2.93	0.0399	0.0101	mg/kg	06.30.19 04:29		10
o-Xylene	95-47-6	1.13	0.0200	0.00344	mg/kg	06.30.19 04:29		10
Xylenes, Total	1330-20-7	4.06		0.00344	mg/kg	06.30.19 04:29		
Total BTEX		4.73		0.00344	mg/kg	06.30.19 04:29		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	194	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-3 @ 1'

Matrix: Soil

Sample Depth: 1 ft

Lab Sample Id: 628664-017

Date Collected: 06.17.19 09.10

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093547

Date Prep: 06.25.19 14.00

Prep seq: 7680690

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	1.78	5.00	0.858	mg/kg	06.25.19 16:20	J	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	1130	74.8	39.9	mg/kg	06.25.19 08:36		5
Diesel Range Organics (DRO)	C10C28DRO	10700	74.8	40.5	mg/kg	06.25.19 08:36		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	854	74.8	40.5	mg/kg	06.25.19 08:36		5
Total TPH	PHC635	12700		39.9	mg/kg	06.25.19 08:36		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	102	70 - 135	%		
o-Terphenyl	170	70 - 135	%		**

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.0192	0.100	0.0192	mg/kg	06.30.19 02:04	U	50
Toluene	108-88-3	0.344	0.100	0.0228	mg/kg	06.30.19 02:04		50
Ethylbenzene	100-41-4	0.566	0.100	0.0282	mg/kg	06.30.19 02:04		50
m_p-Xylenes	179601-23-1	3.91	0.200	0.0507	mg/kg	06.30.19 02:04		50
o-Xylene	95-47-6	1.33	0.100	0.0172	mg/kg	06.30.19 02:04		50
Xylenes, Total	1330-20-7	5.24		0.0172	mg/kg	06.30.19 02:04		
Total BTEX		6.15		0.0172	mg/kg	06.30.19 02:04		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	91	70 - 130	%		
4-Bromofluorobenzene	156	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-3 @ 2'

Matrix: Soil

Sample Depth: 2 ft

Lab Sample Id: 628664-018

Date Collected: 06.17.19 09.20

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093547

Date Prep: 06.25.19 14.00

Prep seq: 7680690

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.865	5.04	0.865	mg/kg	06.25.19 16:26	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	1060	74.9	40.0	mg/kg	06.25.19 09:00		5
Diesel Range Organics (DRO)	C10C28DRO	8340	74.9	40.6	mg/kg	06.25.19 09:00		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	721	74.9	40.6	mg/kg	06.25.19 09:00		5
Total TPH	PHC635	10100		40.0	mg/kg	06.25.19 09:00		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	93	70 - 135	%		
o-Terphenyl	150	70 - 135	%		**

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.0192	0.0996	0.0192	mg/kg	06.30.19 01:41	U	50
Toluene	108-88-3	0.303	0.0996	0.0227	mg/kg	06.30.19 01:41		50
Ethylbenzene	100-41-4	0.596	0.0996	0.0281	mg/kg	06.30.19 01:41		50
m_p-Xylenes	179601-23-1	4.52	0.199	0.0505	mg/kg	06.30.19 01:41		50
o-Xylene	95-47-6	1.54	0.0996	0.0171	mg/kg	06.30.19 01:41		50
Xylenes, Total	1330-20-7	6.06		0.0171	mg/kg	06.30.19 01:41		
Total BTEX		6.96		0.0171	mg/kg	06.30.19 01:41		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	90	70 - 130	%		
4-Bromofluorobenzene	195	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-3@ 3'

Matrix: Soil

Sample Depth: 3 ft

Lab Sample Id: 628664-019

Date Collected: 06.17.19 09.30

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093547

Date Prep: 06.25.19 14.00

Prep seq: 7680690

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.862	5.02	0.862	mg/kg	06.25.19 16:31	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	1140	75.0	40.0	mg/kg	06.25.19 09:25		5
Diesel Range Organics (DRO)	C10C28DRO	7600	75.0	40.6	mg/kg	06.25.19 09:25		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	565	75.0	40.6	mg/kg	06.25.19 09:25		5
Total TPH	PHC635	9310		40.0	mg/kg	06.25.19 09:25		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	91	70 - 135	%		
o-Terphenyl	156	70 - 135	%		**

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.0825	0.0994	0.0191	mg/kg	06.30.19 01:18	J	50
Toluene	108-88-3	0.910	0.0994	0.0226	mg/kg	06.30.19 01:18		50
Ethylbenzene	100-41-4	1.67	0.0994	0.0281	mg/kg	06.30.19 01:18		50
m_p-Xylenes	179601-23-1	7.53	0.199	0.0504	mg/kg	06.30.19 01:18		50
o-Xylene	95-47-6	2.26	0.0994	0.0171	mg/kg	06.30.19 01:18		50
Xylenes, Total	1330-20-7	9.79		0.0171	mg/kg	06.30.19 01:18		
Total BTEX		12.5		0.0171	mg/kg	06.30.19 01:18		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	157	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-3@ 4'

Matrix: Soil

Sample Depth: 4 ft

Lab Sample Id: 628664-020

Date Collected: 06.17.19 09.40

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093547

Date Prep: 06.25.19 14.00

Prep seq: 7680690

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.853	4.97	0.853	mg/kg	06.25.19 16:37	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093436

Date Prep: 06.24.19 14.00

Prep seq: 7680673

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	708	74.9	39.9	mg/kg	06.25.19 09:49		5
Diesel Range Organics (DRO)	C10C28DRO	6960	74.9	40.6	mg/kg	06.25.19 09:49		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	505	74.9	40.6	mg/kg	06.25.19 09:49		5
Total TPH	PHC635	8170		39.9	mg/kg	06.25.19 09:49		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	102	70 - 135	%		
o-Terphenyl	150	70 - 135	%		**

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00384	0.0200	0.00384	mg/kg	06.30.19 04:51	U	10
Toluene	108-88-3	0.175	0.0200	0.00455	mg/kg	06.30.19 04:51		10
Ethylbenzene	100-41-4	0.561	0.0200	0.00564	mg/kg	06.30.19 04:51		10
m_p-Xylenes	179601-23-1	2.78	0.0399	0.0101	mg/kg	06.30.19 04:51		10
o-Xylene	95-47-6	0.963	0.0200	0.00344	mg/kg	06.30.19 04:51		10
Xylenes, Total	1330-20-7	3.74		0.00344	mg/kg	06.30.19 04:51		
Total BTEX		4.48		0.00344	mg/kg	06.30.19 04:51		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	266	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-3 @ 5'

Matrix: Soil

Sample Depth: 5 ft

Lab Sample Id: 628664-021

Date Collected: 06.17.19 09.50

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093547

Date Prep: 06.25.19 14.00

Prep seq: 7680690

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	06.25.19 16:42	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093435

Date Prep: 06.24.19 11.00

Prep seq: 7680672

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	517	74.9	39.9	mg/kg	06.24.19 19:06		5
Diesel Range Organics (DRO)	C10C28DRO	5400	74.9	40.6	mg/kg	06.24.19 19:06		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	398	74.9	40.6	mg/kg	06.24.19 19:06		5
Total TPH	PHC635	6320		39.9	mg/kg	06.24.19 19:06		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	99	70 - 135	%		
o-Terphenyl	149	70 - 135	%		**

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3093943

Date Prep: 06.28.19 17.12

Prep seq: 7681018

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00387	0.0201	0.00387	mg/kg	06.30.19 06:53	U	10
Toluene	108-88-3	0.0710	0.0201	0.00458	mg/kg	06.30.19 06:53		10
Ethylbenzene	100-41-4	0.227	0.0201	0.00568	mg/kg	06.30.19 06:53		10
m_p-Xylenes	179601-23-1	1.37	0.0402	0.0102	mg/kg	06.30.19 06:53		10
o-Xylene	95-47-6	0.415	0.0201	0.00346	mg/kg	06.30.19 06:53		10
Xylenes, Total	1330-20-7	1.79		0.00346	mg/kg	06.30.19 06:53		
Total BTEX		2.08		0.00346	mg/kg	06.30.19 06:53		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	206	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-3 @ 6'

Matrix: Soil

Sample Depth: 6 ft

Lab Sample Id: 628664-022

Date Collected: 06.17.19 10.00

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093547

Date Prep: 06.25.19 14.00

Prep seq: 7680690

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	06.25.19 16:48	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093435

Date Prep: 06.24.19 11.00

Prep seq: 7680672

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	62.5	15.0	7.99	mg/kg	06.24.19 19:31		1
Diesel Range Organics (DRO)	C10C28DRO	1240	15.0	8.11	mg/kg	06.24.19 19:31		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	109	15.0	8.11	mg/kg	06.24.19 19:31		1
Total TPH	PHC635	1410		7.99	mg/kg	06.24.19 19:31		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	81	70 - 135	%		
o-Terphenyl	98	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3093943

Date Prep: 06.28.19 17.12

Prep seq: 7681018

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.30.19 05:47	U	1
Toluene	108-88-3	0.0101	0.00200	0.000455	mg/kg	06.30.19 05:47		1
Ethylbenzene	100-41-4	0.00827	0.00200	0.000564	mg/kg	06.30.19 05:47		1
m_p-Xylenes	179601-23-1	0.0601	0.00399	0.00101	mg/kg	06.30.19 05:47		1
o-Xylene	95-47-6	0.0175	0.00200	0.000344	mg/kg	06.30.19 05:47		1
Xylenes, Total	1330-20-7	0.0776		0.000344	mg/kg	06.30.19 05:47		
Total BTEX		0.0960		0.000344	mg/kg	06.30.19 05:47		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	96	70 - 130	%		
4-Bromofluorobenzene	145	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-3 @ 7'

Matrix: Soil

Sample Depth: 7 ft

Lab Sample Id: 628664-023

Date Collected: 06.17.19 10.10

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093525

Date Prep: 06.25.19 15.00

Prep seq: 7680691

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.867	5.05	0.867	mg/kg	06.25.19 21:52	UX	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093435

Date Prep: 06.24.19 11.00

Prep seq: 7680672

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	1660	74.7	39.9	mg/kg	06.24.19 19:56		5
Diesel Range Organics (DRO)	C10C28DRO	8380	74.7	40.5	mg/kg	06.24.19 19:56		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	647	74.7	40.5	mg/kg	06.24.19 19:56		5
Total TPH	PHC635	10700		39.9	mg/kg	06.24.19 19:56		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	109	70 - 135	%		
o-Terphenyl	146	70 - 135	%		**

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: JHB

% Moist:

Tech: JHB

Seq Number: 3094061

Date Prep: 06.30.19 17.00

Prep seq: 7681048

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.230	0.100	0.0192	mg/kg	07.01.19 14:32		50
Toluene	108-88-3	2.30	0.100	0.0228	mg/kg	07.01.19 14:32		50
Ethylbenzene	100-41-4	6.58	0.100	0.0282	mg/kg	07.01.19 14:32		50
m_p-Xylenes	179601-23-1	14.4	0.200	0.0507	mg/kg	07.01.19 14:32		50
o-Xylene	95-47-6	6.36	0.100	0.0172	mg/kg	07.01.19 14:32		50
Xylenes, Total	1330-20-7	20.8		0.0172	mg/kg	07.01.19 14:32		
Total BTEX		29.9		0.0172	mg/kg	07.01.19 14:32		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	118	70 - 130	%		
4-Bromofluorobenzene	209	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-3 @ 8'

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 628664-024

Date Collected: 06.17.19 10.20

Date Received: 06.21.19 11.34

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093435

Date Prep: 06.24.19 11.00

Prep seq: 7680672

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	684	15.0	7.98	mg/kg	06.24.19 20:21		1
Diesel Range Organics (DRO)	C10C28DRO	4350	15.0	8.10	mg/kg	06.24.19 20:21		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	312	15.0	8.10	mg/kg	06.24.19 20:21		1
Total TPH	PHC635	5350		7.98	mg/kg	06.24.19 20:21		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	88	70 - 135	%		
o-Terphenyl	104	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3093943

Date Prep: 06.28.19 17.12

Prep seq: 7681018

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00383	0.0199	0.00383	mg/kg	06.30.19 06:09	U	10
Toluene	108-88-3	0.512	0.0199	0.00454	mg/kg	06.30.19 06:09		10
Ethylbenzene	100-41-4	0.842	0.0199	0.00563	mg/kg	06.30.19 06:09		10
m_p-Xylenes	179601-23-1	3.62	0.0398	0.0101	mg/kg	06.30.19 06:09		10
o-Xylene	95-47-6	1.92	0.0199	0.00343	mg/kg	06.30.19 06:09		10
Xylenes, Total	1330-20-7	5.54		0.00343	mg/kg	06.30.19 06:09		
Total BTEX		6.89		0.00343	mg/kg	06.30.19 06:09		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	261	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-3 @ 9'

Matrix: Soil

Sample Depth: 9 ft

Lab Sample Id: 628664-025

Date Collected: 06.17.19 10.30

Date Received: 06.21.19 11.34

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093435

Date Prep: 06.24.19 11.00

Prep seq: 7680672

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	06.24.19 20:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	92.9	14.9	8.10	mg/kg	06.24.19 20:46		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	37.0	14.9	8.10	mg/kg	06.24.19 20:46		1
Total TPH	PHC635	130		7.97	mg/kg	06.24.19 20:46		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	88	70 - 135	%		
o-Terphenyl	84	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3093943

Date Prep: 06.28.19 17.12

Prep seq: 7681018

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.30.19 05:25	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	06.30.19 05:25	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	06.30.19 05:25	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.30.19 05:25	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	06.30.19 05:25	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	06.30.19 05:25	U	
Total BTEX		<0.000342		0.000342	mg/kg	06.30.19 05:25	U	

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



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-3 @ 10'

Matrix: Soil

Sample Depth: 10 ft

Lab Sample Id: 628664-026

Date Collected: 06.17.19 10.40

Date Received: 06.21.19 11.34

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093435

Date Prep: 06.24.19 11.00

Prep seq: 7680672

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	115	15.0	7.99	mg/kg	06.24.19 21:11		1
Diesel Range Organics (DRO)	C10C28DRO	1620	15.0	8.12	mg/kg	06.24.19 21:11		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	161	15.0	8.12	mg/kg	06.24.19 21:11		1
Total TPH	PHC635	1900		7.99	mg/kg	06.24.19 21:11		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	73	70 - 135	%		
o-Terphenyl	102	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3093943

Date Prep: 06.28.19 17.12

Prep seq: 7681018

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	06.30.19 05:03	U	1
Toluene	108-88-3	0.0179	0.00200	0.000456	mg/kg	06.30.19 05:03		1
Ethylbenzene	100-41-4	0.0184	0.00200	0.000565	mg/kg	06.30.19 05:03		1
m_p-Xylenes	179601-23-1	0.106	0.00400	0.00101	mg/kg	06.30.19 05:03		1
o-Xylene	95-47-6	0.0383	0.00200	0.000344	mg/kg	06.30.19 05:03		1
Xylenes, Total	1330-20-7	0.144		0.000344	mg/kg	06.30.19 05:03		
Total BTEX		0.181		0.000344	mg/kg	06.30.19 05:03		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	86	70 - 130	%		
4-Bromofluorobenzene	152	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-3 @ 11'

Matrix: Soil

Sample Depth: 11 ft

Lab Sample Id: 628664-027

Date Collected: 06.17.19 10.50

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093527

Date Prep: 06.25.19 15.15

Prep seq: 7680692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.857	4.99	0.857	mg/kg	06.26.19 01:40	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093435

Date Prep: 06.24.19 11.00

Prep seq: 7680672

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	43.5	15.0	7.99	mg/kg	06.24.19 21:36		1
Diesel Range Organics (DRO)	C10C28DRO	1110	15.0	8.11	mg/kg	06.24.19 21:36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	125	15.0	8.11	mg/kg	06.24.19 21:36		1
Total TPH	PHC635	1280		7.99	mg/kg	06.24.19 21:36		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	81	70 - 135	%		
o-Terphenyl	95	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3093943

Date Prep: 06.28.19 17.12

Prep seq: 7681018

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	06.30.19 04:41	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	06.30.19 04:41	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	06.30.19 04:41	U	1
m_p-Xylenes	179601-23-1	0.0131	0.00401	0.00102	mg/kg	06.30.19 04:41		1
o-Xylene	95-47-6	0.00772	0.00200	0.000345	mg/kg	06.30.19 04:41		1
Xylenes, Total	1330-20-7	0.0208		0.000345	mg/kg	06.30.19 04:41		
Total BTEX		0.0208		0.000345	mg/kg	06.30.19 04:41		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	142	70 - 130	%		**



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-3 @ 12'

Matrix: Soil

Sample Depth: 12 ft

Lab Sample Id: 628664-028

Date Collected: 06.17.19 11.00

Date Received: 06.21.19 11.34

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093435

Date Prep: 06.24.19 11.00

Prep seq: 7680672

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	06.24.19 22:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	126	15.0	8.12	mg/kg	06.24.19 22:01		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	24.6	15.0	8.12	mg/kg	06.24.19 22:01		1
Total TPH	PHC635	151		7.99	mg/kg	06.24.19 22:01		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	83	70 - 135	%		
o-Terphenyl	78	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3093943

Date Prep: 06.28.19 17.12

Prep seq: 7681018

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	06.30.19 04:19	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	06.30.19 04:19	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	06.30.19 04:19	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.30.19 04:19	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.30.19 04:19	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	06.30.19 04:19	U	
Total BTEX		<0.000346		0.000346	mg/kg	06.30.19 04:19	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	113	70 - 130	%		



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: V-3 @ 13'

Matrix: Soil

Sample Depth: 3 - FT

Lab Sample Id: 628664-029

Date Collected: 06.17.19 11.10

Date Received: 06.21.19 11.34

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093435

Date Prep: 06.24.19 11.00

Prep seq: 7680672

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	9.28	14.9	7.97	mg/kg	06.24.19 22:26	J	1
Diesel Range Organics (DRO)	C10C28DRO	76.0	14.9	8.10	mg/kg	06.24.19 22:26		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	17.8	14.9	8.10	mg/kg	06.24.19 22:26		1
Total TPH	PHC635	103		7.97	mg/kg	06.24.19 22:26		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	87	70 - 135	%		
o-Terphenyl	87	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3093943

Date Prep: 06.28.19 17.12

Prep seq: 7681018

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	06.30.19 03:57	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	06.30.19 03:57	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	06.30.19 03:57	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.30.19 03:57	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.30.19 03:57	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	06.30.19 03:57	U	
Total BTEX		<0.000346		0.000346	mg/kg	06.30.19 03:57	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	105	70 - 130	%		



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: **background @ S**

Matrix: Soil

Sample Depth:

Lab Sample Id: 628664-030

Date Collected: 06.17.19 11.20

Date Received: 06.21.19 11.34

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093549

Date Prep: 06.25.19 16.30

Prep seq: 7680720

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.860	5.01	0.860	mg/kg	06.26.19 11:04	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3093435

Date Prep: 06.24.19 11.00

Prep seq: 7680672

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	06.24.19 22:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.7	15.0	8.10	mg/kg	06.24.19 22:51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.10	15.0	8.10	mg/kg	06.24.19 22:51	U	1
Total TPH	PHC635	15.7		7.98	mg/kg	06.24.19 22:51		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	81	70 - 135	%		
o-Terphenyl	61	70 - 135	%		**

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3093943

Date Prep: 06.28.19 17.12

Prep seq: 7681018

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.30.19 03:35	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.30.19 03:35	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.30.19 03:35	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.30.19 03:35	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.30.19 03:35	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	06.30.19 03:35	U	
Total BTEX		<0.000344		0.000344	mg/kg	06.30.19 03:35	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	92	70 - 130	%		
4-Bromofluorobenzene	97	70 - 130	%		



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: 7680672-1-BLK	Matrix: Solid	Sample Depth:
Lab Sample Id: 7680672-1-BLK	Date Collected:	Date Received:
Analytical Method: TPH by SW8015 Mod	% Moist:	Prep Method: 1005
Analyst: ARM	Date Prep: 06.24.19 11.00	Tech: ARM
Seq Number: 3093435	Prep seq: 7680672	

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	06.24.19 12:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	06.24.19 12:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	06.24.19 12:26	U	1
Total TPH	PHC635	<8.00		8.00	mg/kg	06.24.19 12:26	U	

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

Sample Id: 7680673-1-BLK	Matrix: Solid	Sample Depth:
Lab Sample Id: 7680673-1-BLK	Date Collected:	Date Received:
Analytical Method: TPH by SW8015 Mod	% Moist:	Prep Method: 1005
Analyst: ARM	Date Prep: 06.24.19 14.00	Tech: ARM
Seq Number: 3093436	Prep seq: 7680673	

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	06.24.19 23:41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	06.24.19 23:41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	06.24.19 23:41	U	1
Total TPH	PHC635	<8.00		8.00	mg/kg	06.24.19 23:41	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	97	70 - 135	%		
o-Terphenyl	92	70 - 135	%		



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: **7680690-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7680690-1-BLK

Date Collected:

Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093547

Date Prep: 06.25.19 14.00

Prep seq: 7680690

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	06.25.19 14:00	U	1

Sample Id: **7680691-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7680691-1-BLK

Date Collected:

Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093525

Date Prep: 06.25.19 15.00

Prep seq: 7680691

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	06.25.19 21:37	U	1

Sample Id: **7680692-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7680692-1-BLK

Date Collected:

Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093527

Date Prep: 06.25.19 15.15

Prep seq: 7680692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	06.26.19 00:17	U	1

Sample Id: **7680720-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7680720-1-BLK

Date Collected:

Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3093549

Date Prep: 06.25.19 16.30

Prep seq: 7680720

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	06.26.19 09:01	U	1



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: **7681017-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7681017-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3094004

Date Prep: 06.28.19 17.08

Prep seq: 7681017

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.30.19 10:22	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.30.19 10:22	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.30.19 10:22	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.30.19 10:22	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.30.19 10:22	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	06.30.19 10:22	U	
Total BTEX		<0.000344		0.000344	mg/kg	06.30.19 10:22	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	87	70 - 130	%		
4-Bromofluorobenzene	98	70 - 130	%		

Sample Id: **7681018-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7681018-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: DVM

Seq Number: 3093943

Date Prep: 06.28.19 17.12

Prep seq: 7681018

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.29.19 10:21	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.29.19 10:21	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.29.19 10:21	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.29.19 10:21	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.29.19 10:21	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	06.29.19 10:21	U	
Total BTEX		<0.000344		0.000344	mg/kg	06.29.19 10:21	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	100	70 - 130	%		



Certificate of Analytical Results

628664



Tasman Geosciences, LLC, Hobbs, NM

Todd 5 Fed Tie

Sample Id: **7681048-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7681048-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: JHB

% Moist:

Tech: JHB

Seq Number: 3094061

Date Prep: 06.30.19 17.00

Prep seq: 7681048

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	07.01.19 01:52	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	07.01.19 01:52	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	07.01.19 01:52	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	07.01.19 01:52	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	07.01.19 01:52	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	07.01.19 01:52	U	
Total BTEX		<0.000344		0.000344	mg/kg	07.01.19 01:52	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	86	70 - 130	%		
4-Bromofluorobenzene	111	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 **SQL** Sample 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: Todd 5 Fed Tie

Work Orders : 628664,

Project ID: 2019-063

Lab Batch #: 3093943

Sample: 7681018-1-BKS / BKS

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/29/19 08:28

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	0.0299	0.0300	100	70-130	

Lab Batch #: 3093943

Sample: 7681018-1-BSD / BSD

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/29/19 08:50

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	0.0321	0.0300	107	70-130	

Lab Batch #: 3093943

Sample: 628189-002 S / MS

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/29/19 09:12

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	0.0335	0.0300	112	70-130	

Lab Batch #: 3093943

Sample: 628189-002 SD / MSD

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/29/19 09:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0291	0.0300	97	70-130	
4-Bromofluorobenzene	0.0332	0.0300	111	70-130	

Lab Batch #: 3093943

Sample: 7681018-1-BLK / BLK

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/29/19 10:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0283	0.0300	94	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: Todd 5 Fed Tie

Work Orders : 628664,

Project ID: 2019-063

Lab Batch #: 3094004

Sample: 7681017-1-BKS / BKS

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/30/19 08:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0289	0.0300	96	70-130	
4-Bromofluorobenzene	0.0326	0.0300	109	70-130	

Lab Batch #: 3094004

Sample: 7681017-1-BSD / BSD

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/30/19 08:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0293	0.0300	98	70-130	
4-Bromofluorobenzene	0.0342	0.0300	114	70-130	

Lab Batch #: 3094004

Sample: 628664-013 S / MS

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/30/19 09:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0279	0.0300	93	70-130	
4-Bromofluorobenzene	0.0361	0.0300	120	70-130	

Lab Batch #: 3094004

Sample: 628664-013 SD / MSD

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/30/19 09:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0289	0.0300	96	70-130	
4-Bromofluorobenzene	0.0383	0.0300	128	70-130	

Lab Batch #: 3094004

Sample: 7681017-1-BLK / BLK

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/30/19 10:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0260	0.0300	87	70-130	
4-Bromofluorobenzene	0.0294	0.0300	98	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: Todd 5 Fed Tie

Work Orders : 628664,

Project ID: 2019-063

Lab Batch #: 3094061

Sample: 7681048-1-BKS / BKS

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/30/19 23:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0262	0.0300	87	70-130	
4-Bromofluorobenzene	0.0317	0.0300	106	70-130	

Lab Batch #: 3094061

Sample: 7681048-1-BSD / BSD

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 07/01/19 00:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0248	0.0300	83	70-130	
4-Bromofluorobenzene	0.0356	0.0300	119	70-130	

Lab Batch #: 3094061

Sample: 629400-001 S / MS

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 07/01/19 00:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0250	0.0300	83	70-130	
4-Bromofluorobenzene	0.0416	0.0300	139	70-130	**

Lab Batch #: 3094061

Sample: 629400-001 SD / MSD

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 07/01/19 01:00

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0245	0.0300	82	70-130	
4-Bromofluorobenzene	0.0354	0.0300	118	70-130	

Lab Batch #: 3094061

Sample: 7681048-1-BLK / BLK

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 07/01/19 01:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0257	0.0300	86	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: Todd 5 Fed Tie

Work Orders : 628664,

Project ID: 2019-063

Lab Batch #: 3093435

Sample: 7680672-1-BLK / BLK

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/24/19 12:26

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	51.2	50.0	102	70-135	

Lab Batch #: 3093435

Sample: 7680672-1-BKS / BKS

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/24/19 12:50

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.2	100	86	70-135	
o-Terphenyl	52.8	50.0	106	70-135	

Lab Batch #: 3093435

Sample: 7680672-1-BSD / BSD

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/24/19 13:15

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.8	100	88	70-135	
o-Terphenyl	53.3	50.0	107	70-135	

Lab Batch #: 3093435

Sample: 628029-001 S / MS

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/24/19 14:05

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.3	99.7	84	70-135	
o-Terphenyl	47.0	49.9	94	70-135	

Lab Batch #: 3093435

Sample: 628029-001 SD / MSD

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/24/19 14:30

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.2	100	74	70-135	
o-Terphenyl	43.7	50.0	87	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: Todd 5 Fed Tie

Work Orders : 628664,

Project ID: 2019-063

Lab Batch #: 3093436

Sample: 7680673-1-BLK / BLK

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/24/19 23:41

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.6	100	97	70-135	
o-Terphenyl	46.2	50.0	92	70-135	

Lab Batch #: 3093436

Sample: 7680673-1-BKS / BKS

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/25/19 00:05

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.0	100	90	70-135	
o-Terphenyl	48.2	50.0	96	70-135	

Lab Batch #: 3093436

Sample: 7680673-1-BSD / BSD

Batch: 1 **Matrix:** Solid

Units: mg/kg

Date Analyzed: 06/25/19 00:29

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.0	100	88	70-135	
o-Terphenyl	48.5	50.0	97	70-135	

Lab Batch #: 3093436

Sample: 628664-011 S / MS

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/25/19 01:18

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.2	99.8	73	70-135	
o-Terphenyl	38.5	49.9	77	70-135	

Lab Batch #: 3093436

Sample: 628664-011 SD / MSD

Batch: 1 **Matrix:** Soil

Units: mg/kg

Date Analyzed: 06/25/19 01:42

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.0	99.8	80	70-135	
o-Terphenyl	46.0	49.9	92	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: Todd 5 Fed Tie

Work Order #: 628664

Project ID: 2019-063

Analyst: FOV

Date Prepared: 06/28/2019

Date Analyzed: 06/30/2019

Lab Batch ID: 3094004

Sample: 7681017-1-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	0.0783	79	0.100	0.0895	90	13	70-130	35	
Toluene	<0.000453	0.0994	0.0769	77	0.100	0.0884	88	14	70-130	35	
Ethylbenzene	<0.000561	0.0994	0.0845	85	0.100	0.0940	94	11	70-130	35	
m_p-Xylenes	<0.00101	0.199	0.169	85	0.200	0.187	94	10	70-130	35	
o-Xylene	<0.000342	0.0994	0.0825	83	0.100	0.0918	92	11	70-130	35	

Analyst: FOV

Date Prepared: 06/28/2019

Date Analyzed: 06/29/2019

Lab Batch ID: 3093943

Sample: 7681018-1-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	0.0875	88	0.101	0.0847	84	3	70-130	35	
Toluene	<0.000457	0.100	0.0838	84	0.101	0.0820	81	2	70-130	35	
Ethylbenzene	<0.000566	0.100	0.0899	90	0.101	0.0872	86	3	70-130	35	
m_p-Xylenes	<0.00102	0.200	0.178	89	0.201	0.175	87	2	70-130	35	
o-Xylene	<0.000345	0.100	0.0865	87	0.101	0.0840	83	3	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: Todd 5 Fed Tie

Work Order #: 628664

Project ID: 2019-063

Analyst: JHB

Date Prepared: 06/30/2019

Date Analyzed: 06/30/2019

Lab Batch ID: 3094061

Sample: 7681048-1-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	0.0744	74	0.100	0.0720	72	3	70-130	35	
Toluene	<0.000457	0.100	0.0847	85	0.100	0.0920	92	8	70-130	35	
Ethylbenzene	<0.000566	0.100	0.0881	88	0.100	0.101	101	14	70-130	35	
m_p-Xylenes	<0.00102	0.200	0.171	86	0.200	0.191	96	11	70-130	35	
o-Xylene	<0.000345	0.100	0.0820	82	0.100	0.0917	92	11	70-130	35	

Analyst: CHE

Date Prepared: 06/25/2019

Date Analyzed: 06/25/2019

Lab Batch ID: 3093547

Sample: 7680690-1-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	254	102	250	253	101	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: Todd 5 Fed Tie

Work Order #: 628664

Project ID: 2019-063

Analyst: CHE

Date Prepared: 06/25/2019

Date Analyzed: 06/25/2019

Lab Batch ID: 3093525

Sample: 7680691-1-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	275	110	250	273	109	1	90-110	20	

Analyst: CHE

Date Prepared: 06/25/2019

Date Analyzed: 06/26/2019

Lab Batch ID: 3093527

Sample: 7680692-1-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	273	109	250	272	109	0	90-110	20	

Analyst: CHE

Date Prepared: 06/25/2019

Date Analyzed: 06/26/2019

Lab Batch ID: 3093549

Sample: 7680720-1-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	226	90	250	226	90	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: Todd 5 Fed Tie

Work Order #: 628664

Project ID: 2019-063

Analyst: ARM

Date Prepared: 06/24/2019

Date Analyzed: 06/24/2019

Lab Batch ID: 3093435

Sample: 7680672-1-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	1010	101	1000	1010	101	0	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1070	107	1000	1060	106	1	70-135	20	

Analyst: ARM

Date Prepared: 06/24/2019

Date Analyzed: 06/25/2019

Lab Batch ID: 3093436

Sample: 7680673-1-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	1040	104	1000	1050	105	1	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1110	111	1000	1140	114	3	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: Todd 5 Fed Tie

Work Order #: 628664

Project ID: 2019-063

Lab Batch ID: 3093943

QC- Sample ID: 628189-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/29/2019

Date Prepared: 06/28/2019

Analyst: FOV

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	<0.000386	0.100	0.0795	80	0.100	0.0781	78	2	70-130	35	
Toluene	<0.000457	0.100	0.0717	72	0.100	0.0698	70	3	70-130	35	
Ethylbenzene	<0.000566	0.100	0.0697	70	0.100	0.0683	68	2	70-130	35	X
m_p-Xylenes	<0.00102	0.200	0.142	71	0.201	0.139	69	2	70-130	35	X
o-Xylene	<0.000345	0.100	0.0717	72	0.100	0.0701	70	2	70-130	35	

Lab Batch ID: 3094004

QC- Sample ID: 628664-013 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/30/2019

Date Prepared: 06/28/2019

Analyst: FOV

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	<0.000386	0.100	0.0812	81	0.100	0.0838	84	3	70-130	35	
Toluene	<0.000457	0.100	0.0713	71	0.100	0.0748	75	5	70-130	35	
Ethylbenzene	<0.000567	0.100	0.0601	60	0.100	0.0634	63	5	70-130	35	X
m_p-Xylenes	<0.00102	0.201	0.117	58	0.200	0.122	61	4	70-130	35	X
o-Xylene	<0.000346	0.100	0.0659	66	0.100	0.0675	68	2	70-130	35	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

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

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: Todd 5 Fed Tie

Work Order #: 628664

Project ID: 2019-063

Lab Batch ID: 3094061

QC- Sample ID: 629400-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/01/2019

Date Prepared: 06/30/2019

Analyst: JHB

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	<0.000385	0.100	0.0615	62	0.101	0.0647	64	5	70-130	35	X
Toluene	<0.000456	0.100	0.0857	86	0.101	0.0824	82	4	70-130	35	
Ethylbenzene	<0.000565	0.100	0.0946	95	0.101	0.0841	83	12	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.177	89	0.202	0.157	78	12	70-130	35	
o-Xylene	<0.000344	0.100	0.0882	88	0.101	0.0767	76	14	70-130	35	

Lab Batch ID: 3093525

QC- Sample ID: 628664-023 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/25/2019

Date Prepared: 06/25/2019

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	287	113	253	281	111	2	90-110	20	X

Lab Batch ID: 3093525

QC- Sample ID: 628927-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/25/2019

Date Prepared: 06/25/2019

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	138	252	416	110	252	414	110	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: Todd 5 Fed Tie

Work Order #: 628664

Project ID: 2019-063

Lab Batch ID: 3093527

QC- Sample ID: 628664-027 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/26/2019

Date Prepared: 06/25/2019

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	<0.857	250	270	108	250	267	107	1	90-110	20	

Lab Batch ID: 3093527

QC- Sample ID: 628771-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/26/2019

Date Prepared: 06/25/2019

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	84.9	250	357	109	250	356	108	0	90-110	20	

Lab Batch ID: 3093547

QC- Sample ID: 628651-033 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/25/2019

Date Prepared: 06/25/2019

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	<0.850	248	241	97	248	245	99	2	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: Todd 5 Fed Tie

Work Order #: 628664

Project ID: 2019-063

Lab Batch ID: 3093547

QC- Sample ID: 628664-006 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/26/2019

Date Prepared: 06/25/2019

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	<0.865	252	240	95	252	238	94	1	90-110	20	

Lab Batch ID: 3093549

QC- Sample ID: 627893-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/26/2019

Date Prepared: 06/25/2019

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	23.3	251	275	100	251	275	100	0	90-110	20	

Lab Batch ID: 3093549

QC- Sample ID: 628664-030 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/26/2019

Date Prepared: 06/25/2019

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	<0.860	251	269	107	251	270	108	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: Todd 5 Fed Tie

Work Order #: 628664

Project ID: 2019-063

Lab Batch ID: 3093435

QC- Sample ID: 628029-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/24/2019

Date Prepared: 06/24/2019

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)	9.76	997	994	99	1000	904	89	9	70-135	20	
Diesel Range Organics (DRO)	8.70	997	1070	106	1000	987	98	8	70-135	20	

Lab Batch ID: 3093436

QC- Sample ID: 628664-011 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/25/2019

Date Prepared: 06/24/2019

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)	8.22	998	851	84	998	916	91	7	70-135	20	
Diesel Range Organics (DRO)	52.8	998	856	80	998	959	91	11	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.



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Chain of Custody

Work Order No:

028044

Project Manager:	ZACH CANDEK	Bill To: (if different)	
Company Name:	TKM&D GEOSCIENCES	Company Name:	PLAINS AAP
Address:	2620 W. NARVAH BLVD	Address:	90 AMBER GRAVES
City, State, ZIP:	HOBBS, NM 88240	City, State, ZIP:	
Phone:	806-724-5943	Email:	ZCANDEK@TKMAS-geo.com

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting Level: I ☐ Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADAPT ☐ Other:

Project Name:	TPD15 FEN TIE	Turn Around:	
Project Number:	2019-0603	Routine ☐	
P.O. Number:		Rush:	
Sample Name:	SEALANT	Due Date:	
Temperature (°C):	-16	Temp Blank:	Yes ☒ No ☐
Received Inlet:	Yes ☒ No ☐	Memorizer ID:	
Cooler Custody Seal:	Yes ☒ No ☐ N/A	Correction Factor:	
Sample Custody Seal:	Yes ☒ No ☐ N/A	Total Containers:	10

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	ANALYSIS REQUEST	Work Order Notes
V-2025	S	6-17-19	9:00	5.0 FT	1	RC1	
V-2021			9:10	1 FT	1	X CHLORIDE E800	
V-2022			9:20	2 FT	1	TCLP BENZENE	
V-2023			9:30	3 FT	1	TCLP RC RA 8	
V-2024			9:40	4 FT	1	NORM	
V-2025			9:50	5 FT	1	PAINT FILTER	
V-2026			10:00	6 FT	1	TPH	
V-2027			10:10	7 FT	1	BTEX	
V-2028			10:20	8 FT	1	HOLD	
V-2029			10:30	9 FT	1		

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SIO2 Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471: Hg

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 \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco that not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by (Signature)	Received by (Signature)	Date/Time	Relinquished by (Signature)	Received by (Signature)	Date/Time



Chain of Custody

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0380 San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480) 335-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 281-7550
Hobbs, NM (575) 392-7550

Work Order No.:
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Page 2 of 24

Project Manager:	ZACH CANDEL		Bill to: (if different)	
Company Name:	IRISMAID GEOSCIENCES		Company Name:	FRANKS ABER
Address:	21020 LD NAZARAH BLVD		Address:	50 ANNEKE GROVES
City/State/ZIP:	HOUSTON, TX 77040		City/State/ZIP:	
Phone:	800-724-5943		Email:	ZCANDEL@ITA
				NAI-GEO.COM

Work Order Comments	
Program: UST/PT ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐	
State of Project:	
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐	
Deliverables: EDD ☐ ADAPT ☐ Other:	

Project Name:	TODD'S FEE TIE				Turn Around
Project Number:	2019-063				Routine ☐
P.O. Number:					Rush:
Sampler's Name:	BARRY RUFFIN				Due Date:
SAMPLE RECEIPT		Temp Blank	Yes	No ☒	Wet Ice
Temperature (C):	-1.6	Thermometer ID		Yes	No ☒
Received In/At:	(Yes) No				
Cooler Custody/Seals:	Yes No	N/A	Correction Factor		
Sample Custody Seals:	Yes No	N/A	Total Containers		5

1
 LOZIDE ~~E-300~~
 LP BENZENE
 LP RCLAS 8
 RM
 INT FILTER
 H

EX.
OLD

Work Order Notes

ALGROVES PMA
b7c:de TRM
Geo.com
b6:us@ TRM
Geo.com
ZCOAD@TRM
Geo.com
AT starts the day received by the
lab, if received by 4:30pm

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	RC	CH	TC	TC	No	P _m	TP	BT	H _i	Sample Comments
V-2@ 10'	✓	6-7-19	10:40	10 Ft	1							X	X	X	
V-2@ 11'			10:50	11 Ft	1							X	X	X	
V-2@ 12'			11:00	12 Ft	1							X	X	X	
V-2@ 13'			11:10	13 Ft	1							X	X	X	
V-2@ 14'			11:20	14 Ft	1		X					X	X	X	

[illegible]

Notice: signatures on this document and indistinguishable of samples constitutes a valid purchase order from client company to Xencro. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xencro will be liable only for the cost of sampling 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 Xencro. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xencro, but not analyzed. These terms will be enforced unless previously negotiated.

Requisitioned by (Signature)	Received by (Signature)	Date/Time	Requisitioned by (Signature)	Received by (Signature)	Date/Time
¹ 		10/30 3.37	² 		10/21/19
³			⁴		1/3/19
⁵			⁶		



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
 Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

Work Order No: 128444

Chain of Custody

Project Manager:	ZACH GUNDEL	Bill To: (if different)	
Company Name:	TKSMAID GEDSCEIVES	Company Name:	TKSMAID GEDSCEIVES
Address:	21020 W. MARLASH BLVD	Address:	90 AMARILLO GROVES
City, State ZIP:	HOBBS, NM 88240	City, State ZIP:	
Phone:	806-724-5943	Email:	Z.GUNDEL@TKSMAID-GEO.COM

Project Name:	2019-063	Turn Around:	
Project Number:		Rush:	☐
P.O. Number:		Due Date:	
Sample Name:	RECYCLED F.I.D.		

Temperature (°C):	-116	Temp Blank:	Yes ☒ No ☐	Wet Test:	Yes ☒ No ☐
Received Inlet:	Yes ☒ No ☐	Thermometer ID:			
Cooler Custody Seals:	Yes ☒ No ☐	Correction Factor:			
Sample Custody Seals:	Yes ☒ No ☐	Total Containers:			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	ANALYSIS REQUEST	Work Order Notes
V-3005	S	6-18-19	9:00	5 FT	1	RCI	
V-3001			9:10	1 FT	1	CHLORIDE F 300	
V-3002			9:20	2 FT	1	TCLP BENZENE	
V-3003			9:30	3 FT	1	TCLP RCRA 8	
V-3004			9:40	4 FT	1	NORM	
V-3005			9:50	5 FT	1	PAINT FILTER	
V-3006			10:00	6 FT	1	TPH	
V-3007			10:10	7 FT	1	BTEX	
V-3008			10:20	8 FT	1	HOLD	
V-3009			10:30	9 FT	1		

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed: TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

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 \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	6/20 3:37	<i>[Signature]</i>	<i>[Signature]</i>	6/21/19
					1139



Houston, TX (281) 240-4200 Dallas, TX (214) 882-0300 San Antonio, TX (210) 508-3334
 Midland, TX (432) 704-5440 El Paso, TX (915) 555-3443 Lubbock, TX (806) 794-1286
 Phoenix, AZ (602) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 382-7550

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Chain of Custody

Work Order No:

22/04/20

Project Manager:	ZACH CANDEL		Cell No. (if available)	
Company Name:	TASMAN GEOSCIENTICES		Company Name:	PLAINS AAPG
Address:	2620 W. NAZARAH BLVD		Address:	50 AUREE GROVES
City, State, ZIP:	HOBBS, NM 88240		City, State, ZIP:	
Phone:	806-724-5943	E-mail:	ZCANDER@TASMAN-Geo.COM	

Work Order Comments	
Program: UST/ST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐	
Status of Project:	
Reporting Level II ☐ Level III ☐ PST/ST ☐ TRRP ☐ Level IV ☐	
Deliverables: EDD ☐ ADAPT ☐ Other:	

[illegible]

Notice: Signature of this document and reimbursement of samples constitutes a valid purchase order from client company to Xenoqa. Its obligations and subcontractors. It assigns inherent terms and conditions of service. Xenoqa 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 Xenoqa. A retainer charge of \$75,000 will be applied to each project and a charge of \$5 for each sample submitted to Xenoqa, but not analyzed. These terms will be enforced unless previously negotiated.

Total	200.7 / 6910	200.8 / 6920:
Circle Method(s) and Metal(s) to be analyzed	8RCRA TCLP / SLP 6910: 8RCRA	13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
		1631 / 246.1 / 7470 / 7471 : Hg

Completed by (Signature)	Reviewed by (Signature)	Releaser	Reviewed by (Signature)	Date/Time
1 Rick J. [Signature]	Jenna Fries	Baro 337	Jane [Signature]	12/12
2				11/21/19
3				11/31
4				
5				

Released Date 05-14-18 Rev. 2013



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: Tasman Geosciences, LLC

Date/ Time Received: 06/21/2019 11:34:00 AM

Work Order #: 628664

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)?	1.6
#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: 06/21/2019

Checklist reviewed by:

John Builes

Date: 06/27/2019



Analytical Report 631667

for

Tasman Geosciences, LLC

Project Manager: Zach Conder

Todd 15N Federal 14 Tie In

08.02.2019

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)



08.02.2019

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

Reference: XENCO Report No(s): **631667**
Todd 15N Federal 14 Tie In
Project Address: Eddy County

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) 631667. 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. 631667 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 631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL-1 @ 2'	S	07.18.2019 00:00	2 ft	631667-001
FL-2 @ 4'	S	07.18.2019 00:00	4 ft	631667-002
FL-3 @ 8'	S	07.18.2019 00:00	8 ft	631667-003
FL-4 @ 8'	S	07.18.2019 00:00	8 ft	631667-004
FL-5 @ 8'	S	07.18.2019 00:00	8 ft	631667-005
FL-6 @ 8'	S	07.18.2019 00:00	8 ft	631667-006
FL-7 @ 8'	S	07.18.2019 00:00	8 ft	631667-007
WW Comp	S	07.18.2019 00:00	ft	631667-008
NW-1	S	07.18.2019 00:00	ft	631667-009
NW-2	S	07.18.2019 00:00	ft	631667-010
MW-3	S	07.18.2019 00:00	ft	631667-011
SW-1	S	07.18.2019 00:00	ft	631667-012
SW-2	S	07.18.2019 00:00	ft	631667-013
SW-3	S	07.18.2019 00:00	ft	631667-014



CASE NARRATIVE

Client Name: *Tasman Geosciences, LLC*

Project Name: *Todd 15N Federal 14 Tie In*

Project ID:

Work Order Number(s): 631667

Report Date: 08.02.2019

Date Received: 07.22.2019

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-3096645 BTEX by EPA 8021

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



Certificate of Analytical Results

631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id: **FL-1 @ 2'**

Matrix: Soil

Sample Depth: 2 ft

Lab Sample Id: 631667-001

Date Collected: 07.18.2019 00:00

Date Received: 07.22.2019 11:45

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3096269

Date Prep: 07.23.2019 10:30

Prep seq: 7682576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.855	4.98	0.855	mg/kg	07.23.2019 13:54	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3096998

Date Prep: 07.29.2019 12:00

Prep seq: 7683052

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	07.30.2019 22:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.11	15.0	8.11	mg/kg	07.30.2019 22:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.11	15.0	8.11	mg/kg	07.30.2019 22:07	U	1
Total TPH	PHC635	<7.99		7.99	mg/kg	07.30.2019 22:07	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	91	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: FOV

Seq Number: 3096645

Date Prep: 07.24.2019 12:10

Prep seq: 7682692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	07.25.2019 05:56	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	07.25.2019 05:56	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	07.25.2019 05:56	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	07.25.2019 05:56	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	07.25.2019 05:56	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	07.25.2019 05:56	U	
Total BTEX		<0.000344		0.000344	mg/kg	07.25.2019 05:56	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	70 - 130	%		
4-Bromofluorobenzene	106	70 - 130	%		



Certificate of Analytical Results

631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id: **FL-2 @ 4'**

Matrix: Soil

Sample Depth: 4 ft

Lab Sample Id: 631667-002

Date Collected: 07.18.2019 00:00

Date Received: 07.22.2019 11:45

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3096269

Date Prep: 07.23.2019 10:30

Prep seq: 7682576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.862	5.02	0.862	mg/kg	07.23.2019 14:00	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3096998

Date Prep: 07.29.2019 12:00

Prep seq: 7683052

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	07.30.2019 22:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	19.0	15.0	8.10	mg/kg	07.30.2019 22:27		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.10	15.0	8.10	mg/kg	07.30.2019 22:27	U	1
Total TPH	PHC635	19.0		7.98	mg/kg	07.30.2019 22:27		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	91	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: FOV

Seq Number: 3096645

Date Prep: 07.24.2019 12:10

Prep seq: 7682692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000388	0.00202	0.000388	mg/kg	07.25.2019 06:16	U	1
Toluene	108-88-3	<0.000459	0.00202	0.000459	mg/kg	07.25.2019 06:16	U	1
Ethylbenzene	100-41-4	<0.000569	0.00202	0.000569	mg/kg	07.25.2019 06:16	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00403	0.00102	mg/kg	07.25.2019 06:16	U	1
o-Xylene	95-47-6	<0.000347	0.00202	0.000347	mg/kg	07.25.2019 06:16	U	1
Xylenes, Total	1330-20-7	<0.000347		0.000347	mg/kg	07.25.2019 06:16	U	
Total BTEX		<0.000347		0.000347	mg/kg	07.25.2019 06:16	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	105	70 - 130	%		
4-Bromofluorobenzene	109	70 - 130	%		



Certificate of Analytical Results

631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

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

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 631667-003

Date Collected: 07.18.2019 00:00

Date Received: 07.22.2019 11:45

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3096269

Date Prep: 07.23.2019 10:30

Prep seq: 7682576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	07.23.2019 14:05	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3096998

Date Prep: 07.29.2019 12:00

Prep seq: 7683052

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	8.24	15.0	7.99	mg/kg	07.30.2019 22:47	J	1
Diesel Range Organics (DRO)	C10C28DRO	19.5	15.0	8.12	mg/kg	07.30.2019 22:47		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.12	15.0	8.12	mg/kg	07.30.2019 22:47	U	1
Total TPH	PHC635	27.7		7.99	mg/kg	07.30.2019 22:47		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	98	70 - 135	%		
o-Terphenyl	95	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: FOV

Seq Number: 3096645

Date Prep: 07.24.2019 12:10

Prep seq: 7682692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	07.26.2019 12:39	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	07.26.2019 12:39	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	07.26.2019 12:39	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	07.26.2019 12:39	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	07.26.2019 12:39	U	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	07.26.2019 12:39	U	
Total BTEX		<0.000345		0.000345	mg/kg	07.26.2019 12:39	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	98	70 - 130	%		
4-Bromofluorobenzene	101	70 - 130	%		



Certificate of Analytical Results

631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

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

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 631667-004

Date Collected: 07.18.2019 00:00

Date Received: 07.22.2019 11:45

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3096269

Date Prep: 07.23.2019 10:30

Prep seq: 7682576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.853	4.97	0.853	mg/kg	07.23.2019 14:21	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3096998

Date Prep: 07.29.2019 12:00

Prep seq: 7683052

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	07.30.2019 23:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	59.0	15.0	8.11	mg/kg	07.30.2019 23:07		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.11	15.0	8.11	mg/kg	07.30.2019 23:07	U	1
Total TPH	PHC635	59.0		7.99	mg/kg	07.30.2019 23:07		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	95	70 - 135	%		
o-Terphenyl	93	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: FOV

Seq Number: 3096645

Date Prep: 07.24.2019 12:10

Prep seq: 7682692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	07.25.2019 06:56	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	07.25.2019 06:56	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	07.25.2019 06:56	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	07.25.2019 06:56	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	07.25.2019 06:56	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	07.25.2019 06:56	U	
Total BTEX		<0.000346		0.000346	mg/kg	07.25.2019 06:56	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	70 - 130	%		
4-Bromofluorobenzene	113	70 - 130	%		



Certificate of Analytical Results

631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id: FL-5 @ 8'

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 631667-005

Date Collected: 07.18.2019 00:00

Date Received: 07.22.2019 11:45

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3096269

Date Prep: 07.23.2019 10:30

Prep seq: 7682576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.860	5.01	0.860	mg/kg	07.23.2019 14:27	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3096998

Date Prep: 07.29.2019 12:00

Prep seq: 7683052

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	07.30.2019 23:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	11.3	14.9	8.10	mg/kg	07.30.2019 23:27	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.10	14.9	8.10	mg/kg	07.30.2019 23:27	U	1
Total TPH	PHC635	11.3		7.97	mg/kg	07.30.2019 23:27	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	102	70 - 135	%		
o-Terphenyl	100	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: FOV

Seq Number: 3096645

Date Prep: 07.24.2019 12:10

Prep seq: 7682692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	07.25.2019 07:16	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	07.25.2019 07:16	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	07.25.2019 07:16	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	07.25.2019 07:16	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	07.25.2019 07:16	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	07.25.2019 07:16	U	
Total BTEX		<0.000344		0.000344	mg/kg	07.25.2019 07:16	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	105	70 - 130	%		
4-Bromofluorobenzene	119	70 - 130	%		



Certificate of Analytical Results

631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

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

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 631667-006

Date Collected: 07.18.2019 00:00

Date Received: 07.22.2019 11:45

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3096269

Date Prep: 07.23.2019 10:30

Prep seq: 7682576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.855	4.98	0.855	mg/kg	07.23.2019 14:32	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3096998

Date Prep: 07.29.2019 12:00

Prep seq: 7683052

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	07.30.2019 23:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	18.3	15.0	8.12	mg/kg	07.30.2019 23:47		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.12	15.0	8.12	mg/kg	07.30.2019 23:47	U	1
Total TPH	PHC635	18.3		7.99	mg/kg	07.30.2019 23:47		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	101	70 - 135	%		
o-Terphenyl	98	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: FOV

Seq Number: 3096645

Date Prep: 07.24.2019 12:10

Prep seq: 7682692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	07.25.2019 07:36	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	07.25.2019 07:36	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	07.25.2019 07:36	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	07.25.2019 07:36	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	07.25.2019 07:36	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	07.25.2019 07:36	U	
Total BTEX		<0.000346		0.000346	mg/kg	07.25.2019 07:36	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	104	70 - 130	%		
4-Bromofluorobenzene	115	70 - 130	%		



Certificate of Analytical Results

631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

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

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 631667-007

Date Collected: 07.18.2019 00:00

Date Received: 07.22.2019 11:45

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3096269

Date Prep: 07.23.2019 10:30

Prep seq: 7682576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	1.66	5.00	0.858	mg/kg	07.23.2019 14:37	J	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ECA

% Moist:

Tech: ECA

Seq Number: 3097288

Date Prep: 07.26.2019 08:00

Prep seq: 7683043

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	08.01.2019 11:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	10.2	14.9	8.10	mg/kg	08.01.2019 11:26	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.10	14.9	8.10	mg/kg	08.01.2019 11:26	U	1
Total TPH	PHC635	10.2		7.97	mg/kg	08.01.2019 11:26	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	99	70 - 135	%		
o-Terphenyl	82	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: FOV

Seq Number: 3096645

Date Prep: 07.24.2019 12:10

Prep seq: 7682692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000388	0.00202	0.000388	mg/kg	07.25.2019 07:57	U	1
Toluene	108-88-3	<0.000459	0.00202	0.000459	mg/kg	07.25.2019 07:57	U	1
Ethylbenzene	100-41-4	<0.000569	0.00202	0.000569	mg/kg	07.25.2019 07:57	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00403	0.00102	mg/kg	07.25.2019 07:57	U	1
o-Xylene	95-47-6	<0.000347	0.00202	0.000347	mg/kg	07.25.2019 07:57	U	1
Xylenes, Total	1330-20-7	<0.000347		0.000347	mg/kg	07.25.2019 07:57	U	
Total BTEX		<0.000347		0.000347	mg/kg	07.25.2019 07:57	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	70 - 130	%		
4-Bromofluorobenzene	106	70 - 130	%		



Certificate of Analytical Results

631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id: **WW Comp**

Matrix: Soil

Sample Depth:

Lab Sample Id: 631667-008

Date Collected: 07.18.2019 00:00

Date Received: 07.22.2019 11:45

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3096269

Date Prep: 07.23.2019 10:30

Prep seq: 7682576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	07.23.2019 14:43	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ECA

% Moist:

Tech: ECA

Seq Number: 3097288

Date Prep: 07.26.2019 08:00

Prep seq: 7683043

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	08.01.2019 12:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	49.2	15.0	8.11	mg/kg	08.01.2019 12:35		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	16.4	15.0	8.11	mg/kg	08.01.2019 12:35		1
Total TPH	PHC635	65.6		7.99	mg/kg	08.01.2019 12:35		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	95	70 - 135	%		
o-Terphenyl	88	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: FOV

Seq Number: 3096645

Date Prep: 07.24.2019 12:10

Prep seq: 7682692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	07.25.2019 08:17	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	07.25.2019 08:17	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	07.25.2019 08:17	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	07.25.2019 08:17	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	07.25.2019 08:17	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	07.25.2019 08:17	U	
Total BTEX		<0.000344		0.000344	mg/kg	07.25.2019 08:17	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	104	70 - 130	%		
4-Bromofluorobenzene	114	70 - 130	%		



Certificate of Analytical Results

631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id: **NW-1**

Matrix: Soil

Sample Depth:

Lab Sample Id: 631667-009

Date Collected: 07.18.2019 00:00

Date Received: 07.22.2019 11:45

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3096269

Date Prep: 07.23.2019 10:30

Prep seq: 7682576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	07.23.2019 14:48	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ECA

% Moist:

Tech: ECA

Seq Number: 3097288

Date Prep: 07.26.2019 08:00

Prep seq: 7683043

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	08.01.2019 12:59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.12	15.0	8.12	mg/kg	08.01.2019 12:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.12	15.0	8.12	mg/kg	08.01.2019 12:59	U	1
Total TPH	PHC635	<7.99		7.99	mg/kg	08.01.2019 12:59	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	103	70 - 135	%		
o-Terphenyl	89	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: FOV

Seq Number: 3096645

Date Prep: 07.24.2019 12:10

Prep seq: 7682692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	07.25.2019 09:36	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	07.25.2019 09:36	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	07.25.2019 09:36	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	07.25.2019 09:36	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	07.25.2019 09:36	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	07.25.2019 09:36	U	
Total BTEX		<0.000342		0.000342	mg/kg	07.25.2019 09:36	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	70 - 130	%		
4-Bromofluorobenzene	97	70 - 130	%		



Certificate of Analytical Results

631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id: **NW-2**

Matrix: Soil

Sample Depth:

Lab Sample Id: 631667-010

Date Collected: 07.18.2019 00:00

Date Received: 07.22.2019 11:45

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3096269

Date Prep: 07.23.2019 10:30

Prep seq: 7682576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.867	5.05	0.867	mg/kg	07.23.2019 15:04	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ECA

% Moist:

Tech: ECA

Seq Number: 3097288

Date Prep: 07.26.2019 08:00

Prep seq: 7683043

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	08.01.2019 13:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.10	15.0	8.10	mg/kg	08.01.2019 13:22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.10	15.0	8.10	mg/kg	08.01.2019 13:22	U	1
Total TPH	PHC635	<7.98		7.98	mg/kg	08.01.2019 13:22	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	104	70 - 135	%		
o-Terphenyl	85	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: FOV

Seq Number: 3096645

Date Prep: 07.24.2019 12:10

Prep seq: 7682692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	07.25.2019 09:56	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	07.25.2019 09:56	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	07.25.2019 09:56	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	07.25.2019 09:56	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	07.25.2019 09:56	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	07.25.2019 09:56	U	
Total BTEX		<0.000342		0.000342	mg/kg	07.25.2019 09:56	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	70 - 130	%		
4-Bromofluorobenzene	106	70 - 130	%		



Certificate of Analytical Results

631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id: **MW-3**

Matrix: Soil

Sample Depth:

Lab Sample Id: 631667-011

Date Collected: 07.18.2019 00:00

Date Received: 07.22.2019 11:45

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3096269

Date Prep: 07.23.2019 10:30

Prep seq: 7682576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.867	5.05	0.867	mg/kg	07.23.2019 15:09	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ECA

% Moist:

Tech: ECA

Seq Number: 3097288

Date Prep: 07.26.2019 08:00

Prep seq: 7683043

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	08.01.2019 13:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.11	15.0	8.11	mg/kg	08.01.2019 13:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.11	15.0	8.11	mg/kg	08.01.2019 13:44	U	1
Total TPH	PHC635	<7.99		7.99	mg/kg	08.01.2019 13:44	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	102	70 - 135	%		
o-Terphenyl	106	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: FOV

Seq Number: 3096645

Date Prep: 07.24.2019 12:10

Prep seq: 7682692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	07.25.2019 10:17	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	07.25.2019 10:17	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	07.25.2019 10:17	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	07.25.2019 10:17	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	07.25.2019 10:17	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	07.25.2019 10:17	U	
Total BTEX		<0.000346		0.000346	mg/kg	07.25.2019 10:17	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	104	70 - 130	%		
4-Bromofluorobenzene	108	70 - 130	%		



Certificate of Analytical Results

631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id: **SW-1**

Matrix: Soil

Sample Depth:

Lab Sample Id: 631667-012

Date Collected: 07.18.2019 00:00

Date Received: 07.22.2019 11:45

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3096269

Date Prep: 07.23.2019 10:30

Prep seq: 7682576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.857	4.99	0.857	mg/kg	07.23.2019 15:25	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ECA

% Moist:

Tech: ECA

Seq Number: 3097288

Date Prep: 07.26.2019 08:00

Prep seq: 7683043

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	08.01.2019 14:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.12	15.0	8.12	mg/kg	08.01.2019 14:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.12	15.0	8.12	mg/kg	08.01.2019 14:07	U	1
Total TPH	PHC635	<7.99		7.99	mg/kg	08.01.2019 14:07	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	100	70 - 135	%		
o-Terphenyl	87	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: FOV

Seq Number: 3096645

Date Prep: 07.24.2019 12:10

Prep seq: 7682692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	07.26.2019 12:59	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	07.26.2019 12:59	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	07.26.2019 12:59	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	07.26.2019 12:59	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	07.26.2019 12:59	U	1
Xylenes, Total	1330-20-7	<0.000343		0.000343	mg/kg	07.26.2019 12:59	U	
Total BTEX		<0.000343		0.000343	mg/kg	07.26.2019 12:59	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	104	70 - 130	%		
4-Bromofluorobenzene	120	70 - 130	%		



Certificate of Analytical Results

631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id: SW-2

Matrix: Soil

Sample Depth:

Lab Sample Id: 631667-013

Date Collected: 07.18.2019 00:00

Date Received: 07.22.2019 11:45

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3096269

Date Prep: 07.23.2019 10:30

Prep seq: 7682576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.853	4.97	0.853	mg/kg	07.23.2019 15:31	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ECA

% Moist:

Tech: ECA

Seq Number: 3097288

Date Prep: 07.26.2019 08:00

Prep seq: 7683043

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	08.01.2019 14:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	42.2	15.0	8.13	mg/kg	08.01.2019 14:30		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	8.60	15.0	8.13	mg/kg	08.01.2019 14:30	J	1
Total TPH	PHC635	50.8		8.00	mg/kg	08.01.2019 14:30		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	91	70 - 135	%		
o-Terphenyl	85	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: FOV

Seq Number: 3096645

Date Prep: 07.24.2019 12:10

Prep seq: 7682692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	07.26.2019 01:20	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	07.26.2019 01:20	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	07.26.2019 01:20	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	07.26.2019 01:20	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	07.26.2019 01:20	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	07.26.2019 01:20	U	
Total BTEX		<0.000346		0.000346	mg/kg	07.26.2019 01:20	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	104	70 - 130	%		
4-Bromofluorobenzene	110	70 - 130	%		



Certificate of Analytical Results

631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id: SW-3

Matrix: Soil

Sample Depth:

Lab Sample Id: 631667-014

Date Collected: 07.18.2019 00:00

Date Received: 07.22.2019 11:45

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3096269

Date Prep: 07.23.2019 10:30

Prep seq: 7682576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.862	5.02	0.862	mg/kg	07.23.2019 15:36	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ECA

% Moist:

Tech: ECA

Seq Number: 3097288

Date Prep: 07.26.2019 08:00

Prep seq: 7683043

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	08.01.2019 14:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.10	15.0	8.10	mg/kg	08.01.2019 14:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.10	15.0	8.10	mg/kg	08.01.2019 14:53	U	1
Total TPH	PHC635	<7.98		7.98	mg/kg	08.01.2019 14:53	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	104	70 - 135	%		
o-Terphenyl	94	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: FOV

Seq Number: 3096645

Date Prep: 07.24.2019 12:10

Prep seq: 7682692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	07.25.2019 11:17	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	07.25.2019 11:17	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	07.25.2019 11:17	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	07.25.2019 11:17	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	07.25.2019 11:17	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	07.25.2019 11:17	U	
Total BTEX		<0.000342		0.000342	mg/kg	07.25.2019 11:17	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	105	70 - 130	%		
4-Bromofluorobenzene	111	70 - 130	%		



Certificate of Analytical Results

631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id: **7682576-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7682576-1-BLK

Date Collected:

Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: CHE

% Moist:

Tech: CHE

Seq Number: 3096269

Date Prep: 07.23.2019 10:30

Prep seq: 7682576

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	07.23.2019 13:17	U	1

Sample Id: **7682692-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7682692-1-BLK

Date Collected:

Date Received:

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: FOV

% Moist:

Tech: FOV

Seq Number: 3096645

Date Prep: 07.24.2019 12:10

Prep seq: 7682692

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	07.25.2019 04:55	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	07.25.2019 04:55	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	07.25.2019 04:55	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	07.25.2019 04:55	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	07.25.2019 04:55	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	07.25.2019 04:55	U	
Total BTEX		<0.000344		0.000344	mg/kg	07.25.2019 04:55	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	103	70 - 130	%		



Certificate of Analytical Results

631667

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id: **7683043-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7683043-1-BLK

Date Collected:

Date Received:

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ECA

% Moist:

Tech: ECA

Seq Number: 3097288

Date Prep: 07.26.2019 08:00

Prep seq: 7683043

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	08.01.2019 10:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	08.01.2019 10:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	08.01.2019 10:17	U	1
Total TPH	PHC635	<8.00		8.00	mg/kg	08.01.2019 10:17	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	106	70 - 135	%		
o-Terphenyl	103	70 - 135	%		

Sample Id: **7683052-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7683052-1-BLK

Date Collected:

Date Received:

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ARM

% Moist:

Tech: ARM

Seq Number: 3096998

Date Prep: 07.29.2019 12:00

Prep seq: 7683052

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	07.30.2019 14:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	07.30.2019 14:25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	07.30.2019 14:25	U	1
Total TPH	PHC635	<8.00		8.00	mg/kg	07.30.2019 14:25	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	109	70 - 135	%		
o-Terphenyl	109	70 - 135	%		



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: Todd 15N Federal 14 Tie In

Work Orders : 631667

Project ID:

Lab Batch #: 3096645

Sample: 7682692-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07.25.2019 03:12

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	0.0317	0.0300	106	70-130	

Lab Batch #: 3096645

Sample: 7682692-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07.25.2019 03:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0294	0.0300	98	70-130	
4-Bromofluorobenzene	0.0343	0.0300	114	70-130	

Lab Batch #: 3096645

Sample: 631571-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07.25.2019 03:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0306	0.0300	102	70-130	
4-Bromofluorobenzene	0.0372	0.0300	124	70-130	

Lab Batch #: 3096645

Sample: 631571-003 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07.25.2019 04:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0309	0.0300	103	70-130	
4-Bromofluorobenzene	0.0361	0.0300	120	70-130	

Lab Batch #: 3096645

Sample: 7682692-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07.25.2019 04:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0302	0.0300	101	70-130	
4-Bromofluorobenzene	0.0308	0.0300	103	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: Todd 15N Federal 14 Tie In

Work Orders : 631667

Project ID:

Lab Batch #: 3096998

Sample: 7683052-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07.30.2019 14:25

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	54.4	50.0	109	70-135	

Lab Batch #: 3096998

Sample: 7683052-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07.30.2019 14:45

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	59.8	50.0	120	70-135	

Lab Batch #: 3096998

Sample: 7683052-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07.30.2019 15:05

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	53.2	50.0	106	70-135	

Lab Batch #: 3096998

Sample: 632259-021 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07.30.2019 15:45

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	99.7	127	70-135	
o-Terphenyl	62.0	49.9	124	70-135	

Lab Batch #: 3096998

Sample: 632259-021 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07.30.2019 16:04

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.9	129	70-135	
o-Terphenyl	59.0	50.0	118	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: Todd 15N Federal 14 Tie In

Work Orders : 631667

Project ID:

Lab Batch #: 3097288

Sample: 7683043-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.01.2019 10:17

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	51.3	50.0	103	70-135	

Lab Batch #: 3097288

Sample: 7683043-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.01.2019 10:40

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.8	100	100	70-135	
o-Terphenyl	53.9	50.0	108	70-135	

Lab Batch #: 3097288

Sample: 7683043-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.01.2019 11:03

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.2	100	99	70-135	
o-Terphenyl	57.9	50.0	116	70-135	

Lab Batch #: 3097288

Sample: 631667-007 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.01.2019 11:49

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	99.6	87	70-135	
o-Terphenyl	50.8	49.8	102	70-135	

Lab Batch #: 3097288

Sample: 631667-007 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.01.2019 12:12

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.9	99.6	85	70-135	
o-Terphenyl	46.4	49.8	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: Todd 15N Federal 14 Tie In

Work Order #: 631667

Analyst: FOV

Lab Batch ID: 3096645

Units: mg/kg

Date Prepared: 07.24.2019

Sample: 7682692-1-BKS

Batch #: 1

Project ID:

Date Analyzed: 07.25.2019

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	0.0954	95	0.100	0.100	100	5	70-130	35	
Toluene	<0.000456	0.100	0.0930	93	0.100	0.0972	97	4	70-130	35	
Ethylbenzene	<0.000565	0.100	0.105	105	0.100	0.108	108	3	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.212	106	0.200	0.220	110	4	70-130	35	
o-Xylene	<0.000344	0.100	0.102	102	0.100	0.108	108	6	70-130	35	

Analyst: CHE

Lab Batch ID: 3096269

Units: mg/kg

Date Prepared: 07.23.2019

Sample: 7682576-1-BKS

Batch #: 1

Date Analyzed: 07.23.2019

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	246	98	250	243	97	1	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: Todd 15N Federal 14 Tie In

Work Order #: 631667

Analyst: ECA

Lab Batch ID: 3097288

Units: mg/kg

Date Prepared: 07.26.2019

Sample: 7683043-1-BKS

Batch #: 1

Project ID:

Date Analyzed: 08.01.2019

Matrix: Solid

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	1100	110	1000	1090	109	1	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1180	118	1000	1200	120	2	70-135	20	

Analyst: ARM

Date Prepared: 07.29.2019

Date Analyzed: 07.30.2019

Lab Batch ID: 3096998

Sample: 7683052-1-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	1170	117	1000	1110	111	5	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1170	117	1000	1060	106	10	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: Todd 15N Federal 14 Tie In

Work Order #: 631667

Lab Batch ID: 3096645

Date Analyzed: 07.25.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 631571-003 S

Batch #: 1 Matrix: Soil

Date Prepared: 07.24.2019

Analyst: FOV

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	<0.000381	0.0990	0.0934	94	0.100	0.0967	97	3	70-130	35	
Toluene	<0.000451	0.0990	0.0797	81	0.100	0.0853	85	7	70-130	35	
Ethylbenzene	<0.000559	0.0990	0.0946	96	0.100	0.0986	99	4	70-130	35	
m_p-Xylenes	<0.00100	0.198	0.189	95	0.201	0.194	97	3	70-130	35	
o-Xylene	<0.000341	0.0990	0.101	102	0.100	0.101	101	0	70-130	35	

Lab Batch ID: 3096269

QC- Sample ID: 631518-008 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07.23.2019

Date Prepared: 07.23.2019

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	11.7	252	274	104	252	269	102	2	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: Todd 15N Federal 14 Tie In

Work Order #: 631667

Lab Batch ID: 3096269

Date Analyzed: 07.23.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 631667-009 S

Batch #: 1 Matrix: Soil

Date Prepared: 07.23.2019

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	<0.858	250	259	104	250	255	102	2	90-110	20	

Lab Batch ID: 3096998

QC- Sample ID: 632259-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07.30.2019

Date Prepared: 07.29.2019

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)	<7.98	997	1130	113	999	1210	121	7	70-135	20	
Diesel Range Organics (DRO)	<8.10	997	1170	117	999	1150	115	2	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: Todd 15N Federal 14 Tie In

Work Order #: 631667

Lab Batch ID: 3097288

Date Analyzed: 08.01.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 631667-007 S

Batch #: 1 Matrix: Soil

Date Prepared: 07.26.2019

Analyst: ECA

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)	<7.97	996	1120	112	996	1110	111	1	70-135	20	
Diesel Range Organics (DRO)	10.2	996	1160	115	996	1090	108	6	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.



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Phoenix, Arizona (480-355-0900)

Page 1 of 2

CHAIN OF CUSTODY

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes										
Company Name / Branch: Tasman Geosciences, LLC Company Address: 2620 W Midland Blvd. Hobbs, NM 88201 Email: zconder@tasman-geo.com Phone No: 806-724-5943 Project Contact: Zach Conder Sampler's Name: B. Dennis				Project Name/Number: Todd 15N Federal 14 Tie In Project Location: Eddy County, Invoice To: PAALP C/O Amber Groves Invoice:				TPH 8015 M Ext Chloride SM 4500 BTEX 8021B RCI TCLP RCRA8 NORM Paint Filter TCLP Benzene				Field Comments: W = Water S = Soil/Sediment 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										
No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	CI	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
1	FL-1 @ 2'	2'	7/18/2019		S	1									X	X	X	X				
2	FL-2 @ 4'	4'	7/18/2019		S	1									X	X	X	X				
3	FL-3 @ 8'	8'	7/18/2019		S	1									X	X	X	X				
4	FL-4 @ 8'	8'	7/18/2019		S	1									X	X	X	X				
5	FL-5 @ 8'	8'	7/18/2019		S	1									X	X	X	X				
6	FL-6 @ 8'	8'	7/18/2019		S	1									X	X	X	X				
7	FL-7 @ 8'	8'	7/18/2019		S	1									X	X	X	X				
8	WW Comp	Comp	7/18/2019		S	1									X	X	X	X				
9	NW-1	Comp	7/18/2019		S	1									X	X	X	X				
10	NW-2	Comp	7/18/2019		S	1									X	X	X	X				
11	NW-3	Comp	7/18/2019		S	1									X	X	X	X				
12	SW-1	Comp	7/18/2019		S	1									X	X	X	X				
Turnaround Time (Business days)																						
Data Deliverable Information																						
Notes:																						
Same Day TAT ☐ 5 Day TAT ☐ Level II Std QC ☐ Level IV (Full Data Pkg / raw data) ☐ Please email results to: zconder@tasman-geo.com																						
Next Day EMERGENCY ☐ 7 Day TAT ☐ Level III Std QC+ Forms ☐ TRRP Level IV ☐ barfin@tasman-geo.com aliquotes@paalp.com																						
2 Day EMERGENCY ☒ Contract TAT ☐ Level 3 (CLP Forms) ☐ UST / RG 411 ☐ identis@tasman-geo.com																						
3 Day EMERGENCY ☐ TRRP Checklist ☐																						
TAT Starts Day received by Lab, if received by 5:00 pm																						
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																						
Relinquished by Sampler: <i>[Signature]</i> Date Time: 7-19-19 3:00 Received By: <i>[Signature]</i> Date Time: 7-19-19 3:00 Relinquished By: <i>[Signature]</i> Date Time: 7-19-19 3:00 Received By: <i>[Signature]</i> Date Time: 7-19-19 3:00																						
Relinquished by: <i>[Signature]</i> Date Time: 7-19-19 Received By: <i>[Signature]</i> Date Time: 7-19-19 Relinquished By: <i>[Signature]</i> Date Time: 7-19-19 Received By: <i>[Signature]</i> Date Time: 7-19-19																						
On Ice ☒ Cooler Temp Thermo, Corr. Factor 0.810788-0.2																						

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.



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CHAIN OF CUSTODY

Page 2 OF 2

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 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				Project Name/Number: Todd 15N Federal 14 Tie In																			
Company Address: 2620 W Marland Blvd Hobbs NM 8820				Project Location: Eddy 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	Date	Time	Matrix	# of bottles	HCl	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	SW-2	Comp	7/18/2019		S	1									X	X	X						
2	SW-3	Comp	7/18/2019		S	1									X	X	X						
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							
Turnaround Time (Business days)																							
☐ 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																	
TAT Starts Day received by Lab, if received by 5:00 pm																							
Relinquished by Sample:		SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																					
1 Relinquished by:		Date Time: 7-19-19 3:01		Received By:		Date Time: 7-19-19 3:01		Relinquished By:		Date Time: 7-19-19 3:01		Received By:		Date Time: 7-19-19 3:01		Relinquished By:		Date Time: 7-19-19 3:01		Received By:		Date Time: 7-19-19 3:01	
3 Relinquished by:		Date Time: 7-19-19 3:01		Received By:		Date Time: 7-19-19 3:01		Relinquished By:		Date Time: 7-19-19 3:01		Received By:		Date Time: 7-19-19 3:01		Relinquished By:		Date Time: 7-19-19 3:01		Received By:		Date Time: 7-19-19 3:01	
5 Relinquished by:		Date Time: 7-19-19 3:01		Received By:		Date Time: 7-19-19 3:01		Relinquished By:		Date Time: 7-19-19 3:01		Received By:		Date Time: 7-19-19 3:01		Relinquished By:		Date Time: 7-19-19 3:01		Received By:		Date Time: 7-19-19 3:01	
On Ice		Cooler Temp.		Thermo. Corr. Factor																			
0.810-7		R8-0.2																					

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ORIGIN ID: H0BA (575) 392-7550

**
MAIL SERVICES ETC, LLC
4008 N GRIMESHOBBS, NM 88240
UNITED STATES USSHIP DATE: 19JUL19
ACTWGT: 30.00 LB MAN
CAD: 0909328/CAFE3211
DIMS: 24x15x14 IN

BILL RECIPIENT

XENCO LABORATORIES
XENCO LABORATORIES
1211 W FLORIDA AVE

MIDLAND TX 79701

(432) 563-1800

INV:
PO:

REF:

DEPT:

FedEx
Express

J18118060501UV

TRK#
0201 4705 2521 3272SATURDAY 12:00P
PRIORITY OVERNIGHT

41 MAFA

79701
TX-US LBB

P01 18514540 AT EXP 0018



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: Tasman Geosciences, LLC

Date/ Time Received: 07/22/2019 11:45:00 AM

Work Order #: 631667

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)?	.7
#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)?	No
#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:

Katie Lowe

Date: 07/22/2019

Checklist reviewed by:

Holly Taylor

Date: 07/24/2019



Certificate of Analysis Summary 632071

Tasman Geosciences, LLC, Hobbs, NM

Project Name: Todd 15N Fed 14 Tie 1N

Project Id:

Contact: Zach Conder

Project Location:

Date Received in Lab: Thu 07.25.2019 11:36

Report Date: 08.07.2019 12:59

Project Manager: John Builes

<i>Analysis Requested</i>	<i>Lab Id:</i>	632071-001	632071-002	632071-003	632071-004	632071-005	632071-006
	<i>Field Id:</i>	FL-9 @ 13'	FL-10 @ 13'	FL-11 @ 13'	FL-12 @ 4'	FL-13 @ 13'	FL-14 @ 4'
	<i>Depth:</i>	13- ft	13- ft	13- ft	4- ft	13- ft	4- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	07.22.2019 00:00	07.22.2019 00:00	07.22.2019 00:00	07.22.2019 00:00	07.22.2019 00:00	07.22.2019 00:00
BTEX by EPA 8021B	<i>Extracted:</i>	07.31.2019 10:45	07.31.2019 10:45	07.31.2019 10:45	07.31.2019 10:45	07.31.2019 10:45	07.31.2019 10:45
	<i>Analyzed:</i>	08.03.2019 01:54	08.03.2019 02:14	08.03.2019 02:34	08.03.2019 02:54	08.03.2019 03:14	08.03.2019 03:35
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000382 0.00198	<0.000384 0.00200	<0.000383 0.00199	<0.000386 0.00201	<0.000382 0.00198	<0.000385 0.00200
Toluene		<0.000452 0.00198	<0.000455 0.00200	<0.000453 0.00199	<0.000457 0.00201	<0.000452 0.00198	<0.000456 0.00200
Ethylbenzene		<0.000560 0.00198	<0.000564 0.00200	<0.000561 0.00199	<0.000567 0.00201	<0.000560 0.00198	<0.000565 0.00200
m_p-Xylenes		<0.00101 0.00397	<0.00101 0.00399	<0.00101 0.00398	<0.00102 0.00402	<0.00101 0.00397	<0.00101 0.00400
o-Xylene		<0.000342 0.00198	<0.000344 0.00200	<0.000342 0.00199	<0.000346 0.00201	<0.000342 0.00198	<0.000344 0.00200
Xylenes, Total		<0.000342 0.00198	<0.000344 0.00200	<0.000342 0.00199	<0.000346 0.00201	<0.000342 0.00198	<0.000344 0.00200
Total BTEX		<0.000342 0.00198	<0.000344 0.00200	<0.000342 0.00199	<0.000346 0.00201	<0.000342 0.00198	<0.000344 0.00200
Chloride by EPA 300	<i>Extracted:</i>	07.30.2019 16:30	07.30.2019 16:30	07.28.2019 12:05	07.28.2019 12:05	07.28.2019 12:05	07.28.2019 12:05
	<i>Analyzed:</i>	07.30.2019 18:44	07.30.2019 18:51	07.29.2019 12:44	07.29.2019 12:50	07.29.2019 12:55	07.29.2019 13:01
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2.27 JX 5.04	5.77 5.02	3.97 J 4.95	2.82 J 4.99	3.67 J 4.99	3.95 J 5.04
TPH By SW8015 Mod SUB: T104704215-19-29	<i>Extracted:</i>	08.02.2019 15:59	08.02.2019 16:08	08.02.2019 16:11	08.02.2019 16:14	08.02.2019 16:17	08.02.2019 16:20
	<i>Analyzed:</i>	08.03.2019 02:24	08.03.2019 03:21	08.03.2019 03:40	08.03.2019 03:58	08.03.2019 04:17	08.03.2019 04:36
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<9.99 50.0	<9.99 50.0	<9.99 50.0	<9.99 50.0	10.1 J 50.0	<10.0 50.0
Diesel Range Organics (DRO)		79.2 50.0	58.6 50.0	165 50.0	286 50.0	452 50.0	177 50.0
Motor Oil Range Hydrocarbons (MRO)		18.8 J 50.0	13.1 J 50.0	33.7 J 50.0	51.2 50.0	73.8 50.0	63.7 50.0
Total TPH		98.0 50.0	71.7 50.0	199 50.0	337 50.0	536 50.0	241 50.0

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 632071

Tasman Geosciences, LLC, Hobbs, NM

Project Name: Todd 15N Fed 14 Tie 1N

Project Id:

Contact: Zach Conder

Project Location:

Date Received in Lab: Thu 07.25.2019 11:36

Report Date: 08.07.2019 12:59

Project Manager: John Builes

<i>Analysis Requested</i>	<i>Lab Id:</i>	632071-007	632071-008	632071-009	632071-010	632071-011	632071-012
	<i>Field Id:</i>	FL-15 @ 13'	FL-16 @ 13'	WSW-7 @ 2'	NSW-4A @ 3'	NSW-4B @ 9'	NSW-5A @ 3'
	<i>Depth:</i>	13- ft	13- ft	2- ft	3- ft	9- ft	3- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	07.23.2019 00:00	07.23.2019 00:00	07.22.2019 00:00	07.22.2019 00:00	07.22.2019 00:00	07.22.2019 00:00
BTEX by EPA 8021B	<i>Extracted:</i>	07.31.2019 10:45	07.31.2019 10:45	07.31.2019 10:45	07.31.2019 10:45	07.31.2019 10:45	07.31.2019 10:45
	<i>Analyzed:</i>	08.03.2019 03:55	08.03.2019 05:13	08.04.2019 04:37	08.03.2019 05:54	08.03.2019 06:14	08.03.2019 06:34
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000387 0.00201	<0.000385 0.00200	<0.000383 0.00199	<0.000385 0.00200	<0.000382 0.00198	<0.000385 0.00200
Toluene		<0.000458 0.00201	<0.000456 0.00200	<0.000453 0.00199	<0.000456 0.00200	<0.000452 0.00198	<0.000456 0.00200
Ethylbenzene		<0.000568 0.00201	<0.000565 0.00200	<0.000561 0.00199	<0.000565 0.00200	<0.000560 0.00198	<0.000565 0.00200
m_p-Xylenes		<0.00102 0.00402	<0.00101 0.00400	<0.00101 0.00398	<0.00101 0.00400	<0.00101 0.00397	<0.00101 0.00400
o-Xylene		<0.000346 0.00201	<0.000344 0.00200	<0.000342 0.00199	<0.000344 0.00200	<0.000342 0.00198	<0.000344 0.00200
Xylenes, Total		<0.000346 0.00201	<0.000344 0.00200	<0.000342 0.00199	<0.000344 0.00200	<0.000342 0.00198	<0.000344 0.00200
Total BTEX		<0.000346 0.00201	<0.000344 0.00200	<0.000342 0.00199	<0.000344 0.00200	<0.000342 0.00198	<0.000344 0.00200
Chloride by EPA 300	<i>Extracted:</i>	07.28.2019 12:05	07.28.2019 12:05	07.28.2019 12:20	07.28.2019 12:20	07.28.2019 12:20	07.28.2019 12:20
	<i>Analyzed:</i>	07.29.2019 13:06	07.29.2019 13:11	07.29.2019 13:44	07.29.2019 14:00	07.29.2019 14:06	07.29.2019 14:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		9.20 5.04	2.89 J 5.03	4.21 JX 5.04	5.73 4.99	3.11 J 4.96	3.55 J 4.95
TPH By SW8015 Mod SUB: T104704215-19-29	<i>Extracted:</i>	08.02.2019 16:23	08.02.2019 16:26	08.02.2019 16:29	08.02.2019 16:32	08.02.2019 16:35	08.02.2019 16:38
	<i>Analyzed:</i>	08.03.2019 04:55	08.03.2019 05:14	08.03.2019 05:52	08.03.2019 06:11	08.03.2019 06:30	08.05.2019 09:47
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<9.99 50.0	<10.0 50.0	<9.99 50.0	<10.0 50.0	<10.0 50.0	<9.96 49.8
Diesel Range Organics (DRO)		15.8 J 50.0	<10.0 50.0	<9.99 50.0	<10.0 50.0	10.3 J 50.0	14.3 J 49.8
Motor Oil Range Hydrocarbons (MRO)		<9.99 50.0	<10.0 50.0	<9.99 50.0	<10.0 50.0	<10.0 50.0	<9.96 49.8
Total TPH		15.8 J 50.0	<10.0 50.0	<9.99 50.0	<10.0 50.0	10.3 J 50.0	14.3 J 49.8

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John Builes
Project Manager



Certificate of Analysis Summary 632071

Tasman Geosciences, LLC, Hobbs, NM

Project Name: Todd 15N Fed 14 Tie 1N

Project Id:

Contact: Zach Conder

Project Location:

Date Received in Lab: Thu 07.25.2019 11:36

Report Date: 08.07.2019 12:59

Project Manager: John Builes

<i>Analysis Requested</i>	<i>Lab Id:</i>	632071-013	632071-014	632071-015	632071-016	632071-017	632071-018
	<i>Field Id:</i>	NSW-5B @ 9'	NSW-6A @ 3'	NSW-6B @ 9'	NSW-8A @ 3'	NSW-8B @ 9'	NSW-10A @ 3'
	<i>Depth:</i>	9- ft	3- ft	9- ft	3- ft	9- ft	3- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	07.22.2019 00:00	07.22.2019 00:00	07.22.2019 00:00	07.22.2019 00:00	07.22.2019 00:00	07.23.2019 00:00
BTEX by EPA 8021B	<i>Extracted:</i>	07.31.2019 10:45	07.31.2019 10:45	07.31.2019 10:45	07.31.2019 10:45	07.31.2019 10:45	07.31.2019 13:15
	<i>Analyzed:</i>	08.03.2019 06:54	08.04.2019 04:58	08.03.2019 07:34	08.03.2019 07:55	08.03.2019 08:15	08.02.2019 01:02
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000386 0.00200	<0.000383 0.00199	<0.000383 0.00199	<0.000386 0.00200	<0.000383 0.00199	<0.000385 0.00200
Toluene		<0.000457 0.00200	<0.000454 0.00199	<0.000454 0.00199	<0.000457 0.00200	<0.000454 0.00199	<0.000456 0.00200
Ethylbenzene		<0.000566 0.00200	<0.000563 0.00199	<0.000563 0.00199	<0.000566 0.00200	<0.000563 0.00199	<0.000565 0.00200
m_p-Xylenes		<0.00102 0.00401	<0.00101 0.00398	<0.00101 0.00398	<0.00102 0.00401	<0.00101 0.00398	<0.00101 0.00400
o-Xylene		<0.000345 0.00200	<0.000343 0.00199	<0.000343 0.00199	<0.000345 0.00200	<0.000343 0.00199	<0.000344 0.00200
Xylenes, Total		<0.000345 0.00200	<0.000343 0.00199	<0.000343 0.00199	<0.000345 0.00200	<0.000343 0.00199	<0.000344 0.00200
Total BTEX		<0.000345 0.00200	<0.000343 0.00199	<0.000343 0.00199	<0.000345 0.00200	<0.000343 0.00199	<0.000344 0.00200
Chloride by EPA 300	<i>Extracted:</i>	07.28.2019 12:20	07.28.2019 12:20	07.28.2019 12:20	07.28.2019 12:20	07.28.2019 12:20	07.28.2019 12:20
	<i>Analyzed:</i>	07.29.2019 14:17	07.29.2019 14:33	07.29.2019 14:38	07.29.2019 14:44	07.29.2019 14:49	07.29.2019 14:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		3.00 J 4.97	4.92 J 5.04	12.4 5.05	5.00 4.98	6.02 4.95	2.90 J 5.04
TPH By SW8015 Mod SUB: T104704215-19-29	<i>Extracted:</i>	08.02.2019 16:41	08.02.2019 16:44	08.02.2019 16:47	08.02.2019 16:50	08.02.2019 16:53	08.02.2019 16:56
	<i>Analyzed:</i>	08.05.2019 10:06	08.05.2019 10:24	08.05.2019 10:43	08.05.2019 11:02	08.03.2019 07:25	08.05.2019 11:20
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<10.0 50.0	<9.98 49.9	<9.99 50.0	11.5 J 50.0	<9.99 50.0	<9.99 50.0
Diesel Range Organics (DRO)		41.8 J 50.0	15.2 J 49.9	23.4 J 50.0	65.3 50.0	23.0 J 50.0	<9.99 50.0
Motor Oil Range Hydrocarbons (MRO)		13.2 J 50.0	<9.98 49.9	<9.99 50.0	15.6 J 50.0	<9.99 50.0	<9.99 50.0
Total TPH		55.0 50.0	15.2 J 49.9	23.4 J 50.0	92.4 50.0	23.0 J 50.0	<9.99 50.0

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John Builes
Project Manager



Certificate of Analysis Summary 632071

Tasman Geosciences, LLC, Hobbs, NM

Project Name: Todd 15N Fed 14 Tie 1N

Project Id:

Contact: Zach Conder

Project Location:

Date Received in Lab: Thu 07.25.2019 11:36

Report Date: 08.07.2019 12:59

Project Manager: John Builes

<i>Analysis Requested</i>	<i>Lab Id:</i>	632071-019	632071-020	632071-021	632071-022	632071-023	632071-024
	<i>Field Id:</i>	NSW-10B @ 9'	SSW-4A @ 3'	SSW-4B @ 9'	SSW-5A @ 3'	SSW-5B @ 9'	SSW-6 @ 9'
	<i>Depth:</i>	9- ft	3- ft	9- ft	3- ft	9- ft	9- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	07.23.2019 00:00	07.22.2019 00:00	07.22.2019 00:00	07.22.2019 00:00	07.22.2019 00:00	07.22.2019 00:00
BTEX by EPA 8021B	<i>Extracted:</i>	07.31.2019 13:15	07.31.2019 13:15	07.31.2019 13:15	07.31.2019 13:15	07.31.2019 13:15	07.31.2019 13:15
	<i>Analyzed:</i>	08.02.2019 01:23	08.02.2019 02:17	08.04.2019 05:19	08.02.2019 03:01	08.02.2019 03:23	08.04.2019 05:40
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000384 0.00200	<0.000386 0.00200	<0.000382 0.00198	<0.000386 0.00201	<0.000383 0.00199	<0.000382 0.00198
Toluene		<0.000455 0.00200	<0.000457 0.00200	<0.000452 0.00198	<0.000457 0.00201	<0.000454 0.00199	<0.000452 0.00198
Ethylbenzene		<0.000564 0.00200	<0.000566 0.00200	<0.000560 0.00198	<0.000567 0.00201	<0.000563 0.00199	<0.000560 0.00198
m_p-Xylenes		<0.00101 0.00399	<0.00102 0.00401	<0.00101 0.00397	<0.00102 0.00402	<0.00101 0.00398	<0.00101 0.00397
o-Xylene		<0.000344 0.00200	<0.000345 0.00200	<0.000342 0.00198	<0.000346 0.00201	<0.000343 0.00199	<0.000342 0.00198
Xylenes, Total		<0.000344 0.00200	<0.000345 0.00200	<0.000342 0.00198	<0.000346 0.00201	<0.000343 0.00199	<0.000342 0.00198
Total BTEX		<0.000344 0.00200	<0.000345 0.00200	<0.000342 0.00198	<0.000346 0.00201	<0.000343 0.00199	<0.000342 0.00198
Chloride by EPA 300	<i>Extracted:</i>	07.28.2019 12:20	07.28.2019 12:20	07.28.2019 12:20	07.28.2019 12:20	07.28.2019 12:20	07.28.2019 12:20
	<i>Analyzed:</i>	07.29.2019 15:00	07.29.2019 15:16	07.29.2019 15:22	07.29.2019 15:38	07.29.2019 15:43	07.29.2019 15:49
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		3.11 J 4.97	6.16 5.03	5.93 5.03	3.55 J 4.99	7.00 4.98	8.29 5.04
TPH By SW8015 Mod SUB: T104704215-19-29	<i>Extracted:</i>	08.02.2019 16:59	08.02.2019 17:19	08.02.2019 17:22	08.02.2019 17:31	08.02.2019 17:34	08.02.2019 17:37
	<i>Analyzed:</i>	08.03.2019 05:52	08.05.2019 10:43	08.05.2019 11:02	08.05.2019 11:58	08.05.2019 12:17	08.05.2019 12:35
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<9.96 49.8	<9.96 49.8	<10.0 50.0	<9.99 50.0	<9.97 49.9	<9.96 49.8
Diesel Range Organics (DRO)		<9.96 49.8	<9.96 49.8	<10.0 50.0	18.9 J 50.0	<9.97 49.9	25.2 J 49.8
Motor Oil Range Hydrocarbons (MRO)		<9.96 49.8	<9.96 49.8	<10.0 50.0	<9.99 50.0	<9.97 49.9	<9.96 49.8
Total TPH		<9.96 49.8	<9.96 49.8	<10.0 50.0	18.9 J 50.0	<9.97 49.9	25.2 J 49.8

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John Builes
Project Manager



Certificate of Analysis Summary 632071

Tasman Geosciences, LLC, Hobbs, NM

Project Name: Todd 15N Fed 14 Tie 1N

Project Id:

Contact: Zach Conder

Project Location:

Date Received in Lab: Thu 07.25.2019 11:36

Report Date: 08.07.2019 12:59

Project Manager: John Builes

<i>Analysis Requested</i>	<i>Lab Id:</i>	632071-025	632071-026	632071-027	632071-028	632071-029	
	<i>Field Id:</i>	SSW-7 @ 2'	SSW-8 @ 9'	SSW-9 @ 2'	SSW-10 @ 9'	SSW-11 @ 2'	
	<i>Depth:</i>	2- ft	9- ft	2- ft	9- ft	2- ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	07.22.2019 00:00	07.22.2019 00:00	07.22.2019 00:00	07.23.2019 00:00	07.23.2019 00:00	
BTEX by EPA 8021B	<i>Extracted:</i>	07.31.2019 13:15	07.31.2019 13:15	07.31.2019 13:15	07.31.2019 13:15	07.31.2019 13:15	
	<i>Analyzed:</i>	08.02.2019 04:08	08.02.2019 04:32	08.02.2019 04:54	08.02.2019 06:24	08.04.2019 06:02	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.000386 0.00201	<0.000387 0.00201	<0.000382 0.00198	<0.000384 0.00200	<0.000387 0.00201	
Toluene		<0.000457 0.00201	<0.000458 0.00201	<0.000452 0.00198	<0.000455 0.00200	<0.000458 0.00201	
Ethylbenzene		<0.000567 0.00201	<0.000568 0.00201	<0.000560 0.00198	<0.000564 0.00200	<0.000568 0.00201	
m_p-Xylenes		<0.00102 0.00402	<0.00102 0.00402	<0.00101 0.00397	<0.00101 0.00399	<0.00102 0.00402	
o-Xylene		<0.000346 0.00201	<0.000346 0.00201	<0.000342 0.00198	<0.000344 0.00200	<0.000346 0.00201	
Xylenes, Total		<0.000346 0.00201	<0.000346 0.00201	<0.000342 0.00198	<0.000344 0.00200	<0.000346 0.00201	
Total BTEX		<0.000346 0.00201	<0.000346 0.00201	<0.000342 0.00198	<0.000344 0.00200	<0.000346 0.00201	
Chloride by EPA 300	<i>Extracted:</i>	07.28.2019 12:20	07.28.2019 12:20	07.28.2019 12:20	07.28.2019 12:20	07.28.2019 17:20	
	<i>Analyzed:</i>	07.29.2019 15:54	07.29.2019 15:59	07.29.2019 16:05	07.29.2019 16:10	07.29.2019 09:36	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		2.08 J 5.01	4.77 J 4.97	9.86 5.02	3.22 J 5.03	0.922 J 4.96	
TPH By SW8015 Mod SUB: T104704215-19-29	<i>Extracted:</i>	08.02.2019 17:40	08.02.2019 17:43	08.02.2019 17:46	08.02.2019 17:49	08.02.2019 17:52	
	<i>Analyzed:</i>	08.05.2019 12:54	08.05.2019 13:13	08.05.2019 16:42	08.05.2019 17:21	08.05.2019 17:44	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<10.0 50.0	<10.0 50.0	<9.95 49.8	10.0 J 50.0	<9.99 50.0	
Diesel Range Organics (DRO)		<10.0 50.0	<10.0 50.0	50.2 49.8	234 50.0	<9.99 50.0	
Motor Oil Range Hydrocarbons (MRO)		<10.0 50.0	<10.0 50.0	23.0 J 49.8	25.5 J 50.0	<9.99 50.0	
Total TPH		<10.0 50.0	<10.0 50.0	73.2 49.8	270 50.0	<9.99 50.0	

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John Builes
Project Manager



Analytical Report 632071

for

Tasman Geosciences, LLC

Project Manager: Zach Conder

Todd 15N Fed 14 Tie 1N

08.07.2019

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)



08.07.2019

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

Reference: XENCO Report No(s): **632071**

Todd 15N Fed 14 Tie 1N

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) 632071. 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. 632071 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

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Sample Cross Reference 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL-9 @ 13'	S	07.22.2019 00:00	13 ft	632071-001
FL-10 @ 13'	S	07.22.2019 00:00	13 ft	632071-002
FL-11 @ 13'	S	07.22.2019 00:00	13 ft	632071-003
FL-12 @ 4'	S	07.22.2019 00:00	4 ft	632071-004
FL-13 @ 13'	S	07.22.2019 00:00	13 ft	632071-005
FL-14 @ 4'	S	07.22.2019 00:00	4 ft	632071-006
FL-15 @ 13'	S	07.23.2019 00:00	13 ft	632071-007
FL-16 @ 13'	S	07.23.2019 00:00	13 ft	632071-008
WSW-7 @ 2'	S	07.22.2019 00:00	2 ft	632071-009
NSW-4A @ 3'	S	07.22.2019 00:00	3 ft	632071-010
NSW-4B @ 9'	S	07.22.2019 00:00	9 ft	632071-011
NSW-5A @ 3'	S	07.22.2019 00:00	3 ft	632071-012
NSW-5B @ 9'	S	07.22.2019 00:00	9 ft	632071-013
NSW-6A @ 3'	S	07.22.2019 00:00	3 ft	632071-014
NSW-6B @ 9'	S	07.22.2019 00:00	9 ft	632071-015
NSW-8A @ 3'	S	07.22.2019 00:00	3 ft	632071-016
NSW-8B @ 9'	S	07.22.2019 00:00	9 ft	632071-017
NSW-10A @ 3'	S	07.23.2019 00:00	3 ft	632071-018
NSW-10B @ 9'	S	07.23.2019 00:00	9 ft	632071-019
SSW-4A @ 3'	S	07.22.2019 00:00	3 ft	632071-020
SSW-4B @ 9'	S	07.22.2019 00:00	9 ft	632071-021
SSW-5A @ 3'	S	07.22.2019 00:00	3 ft	632071-022
SSW-5B @ 9'	S	07.22.2019 00:00	9 ft	632071-023
SSW-6 @ 9'	S	07.22.2019 00:00	9 ft	632071-024
SSW-7 @ 2'	S	07.22.2019 00:00	2 ft	632071-025
SSW-8 @ 9'	S	07.22.2019 00:00	9 ft	632071-026
SSW-9 @ 2'	S	07.22.2019 00:00	2 ft	632071-027
SSW-10 @ 9'	S	07.23.2019 00:00	9 ft	632071-028
SSW-11 @ 2'	S	07.23.2019 00:00	2 ft	632071-029



CASE NARRATIVE

Client Name: Tasman Geosciences, LLC

Project Name: Todd 15N Fed 14 Tie 1N

Project ID:

Work Order Number(s): 632071

Report Date: 08.07.2019

Date Received: 07.25.2019

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-3096964 Chloride by EPA 300

Lab Sample ID 632384-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 632071-001, -002.

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

Batch: LBA-3096989 Chloride by EPA 300

Lab Sample ID 632071-019 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 632071-009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020, -021, -022, -023, -024, -025, -026, -027, -028.

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

Batch: LBA-3097423 BTEX by EPA 8021B

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

Batch: LBA-3097431 BTEX by EPA 8021B

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



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: FL-9 @ 13'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-001	Date Collected: 07.22.2019 00:00	Sample Depth: 13 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.30.2019 16:30	Basis: Wet Weight
Seq Number: 3096964		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2.27	5.04	0.865	mg/kg	07.30.2019 18:44	JX	1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Basis: Wet Weight
Seq Number: 3097488	SUB: T104704215-19-29
Date Prep: 08.02.2019 15:59	

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.99	50.0	9.99	mg/kg	08.03.2019 02:24	U	1
Diesel Range Organics (DRO)	C10C28DRO	79.2	50.0	9.99	mg/kg	08.03.2019 02:24		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	18.8	50.0	9.99	mg/kg	08.03.2019 02:24	J	1
Total TPH	PHC635	98.0	50.0	9.99	mg/kg	08.03.2019 02:24		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	08.03.2019 02:24	
o-Terphenyl	84-15-1	109	%	70-135	08.03.2019 02:24	



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **FL-9 @ 13'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-001

Date Collected: 07.22.2019 00:00

Sample Depth: 13 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 10:45

Basis: Wet Weight

Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	08.03.2019 01:54	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	08.03.2019 01:54	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	08.03.2019 01:54	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	08.03.2019 01:54	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	08.03.2019 01:54	U	1
Xylenes, Total	1330-20-7	<0.000342	0.00198	0.000342	mg/kg	08.03.2019 01:54	U	1
Total BTEX		<0.000342	0.00198	0.000342	mg/kg	08.03.2019 01:54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	109	%	70-130	08.03.2019 01:54			
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.03.2019 01:54			



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **FL-10 @ 13'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-002

Date Collected: 07.22.2019 00:00

Sample Depth: 13 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 07.30.2019 16:30

Basis: Wet Weight

Seq Number: 3096964

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.77	5.02	0.862	mg/kg	07.30.2019 18:51		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 08.02.2019 16:08

Basis: Wet Weight

Seq Number: 3097488

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.99	50.0	9.99	mg/kg	08.03.2019 03:21	U	1
Diesel Range Organics (DRO)	C10C28DRO	58.6	50.0	9.99	mg/kg	08.03.2019 03:21		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	13.1	50.0	9.99	mg/kg	08.03.2019 03:21	J	1
Total TPH	PHC635	71.7	50.0	9.99	mg/kg	08.03.2019 03:21		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	08.03.2019 03:21	
o-Terphenyl	84-15-1	100	%	70-135	08.03.2019 03:21	



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **FL-10 @ 13'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-002

Date Collected: 07.22.2019 00:00

Sample Depth: 13 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 10:45

Basis: Wet Weight

Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	08.03.2019 02:14	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	08.03.2019 02:14	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	08.03.2019 02:14	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	08.03.2019 02:14	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.03.2019 02:14	U	1
Xylenes, Total	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	08.03.2019 02:14	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	08.03.2019 02:14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.03.2019 02:14			
4-Bromofluorobenzene	460-00-4	122	%	70-130	08.03.2019 02:14			



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **FL-11 @ 13'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-003

Date Collected: 07.22.2019 00:00

Sample Depth: 13 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 07.28.2019 12:05

Basis: Wet Weight

Seq Number: 3096984

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3.97	4.95	0.850	mg/kg	07.29.2019 12:44	J	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 08.02.2019 16:11

Basis: Wet Weight

Seq Number: 3097488

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.99	50.0	9.99	mg/kg	08.03.2019 03:40	U	1
Diesel Range Organics (DRO)	C10C28DRO	165	50.0	9.99	mg/kg	08.03.2019 03:40		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	33.7	50.0	9.99	mg/kg	08.03.2019 03:40	J	1
Total TPH	PHC635	199	50.0	9.99	mg/kg	08.03.2019 03:40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	08.03.2019 03:40	
o-Terphenyl	84-15-1	96	%	70-135	08.03.2019 03:40	



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **FL-11 @ 13'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-003

Date Collected: 07.22.2019 00:00

Sample Depth: 13 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 10:45

Basis: Wet Weight

Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	08.03.2019 02:34	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	08.03.2019 02:34	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	08.03.2019 02:34	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	08.03.2019 02:34	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	08.03.2019 02:34	U	1
Xylenes, Total	1330-20-7	<0.000342	0.00199	0.000342	mg/kg	08.03.2019 02:34	U	1
Total BTEX		<0.000342	0.00199	0.000342	mg/kg	08.03.2019 02:34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	120	%	70-130	08.03.2019 02:34			
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.03.2019 02:34			



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: FL-12 @ 4'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-004	Date Collected: 07.22.2019 00:00	Sample Depth: 4 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:05	Basis: Wet Weight
Seq Number: 3096984		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2.82	4.99	0.857	mg/kg	07.29.2019 12:50	J	1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Date Prep: 08.02.2019 16:14
Seq Number: 3097488	Basis: Wet Weight
	SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.99	50.0	9.99	mg/kg	08.03.2019 03:58	U	1
Diesel Range Organics (DRO)	C10C28DRO	286	50.0	9.99	mg/kg	08.03.2019 03:58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	51.2	50.0	9.99	mg/kg	08.03.2019 03:58		1
Total TPH	PHC635	337	50.0	9.99	mg/kg	08.03.2019 03:58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	08.03.2019 03:58	
o-Terphenyl	84-15-1	92	%	70-135	08.03.2019 03:58	



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **FL-12 @ 4'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-004

Date Collected: 07.22.2019 00:00

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 10:45

Basis: Wet Weight

Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	08.03.2019 02:54	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	08.03.2019 02:54	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	08.03.2019 02:54	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	08.03.2019 02:54	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	08.03.2019 02:54	U	1
Xylenes, Total	1330-20-7	<0.000346	0.00201	0.000346	mg/kg	08.03.2019 02:54	U	1
Total BTEX		<0.000346	0.00201	0.000346	mg/kg	08.03.2019 02:54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	122	%	70-130	08.03.2019 02:54			
1,4-Difluorobenzene	540-36-3	93	%	70-130	08.03.2019 02:54			



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **FL-13 @ 13'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-005

Date Collected: 07.22.2019 00:00

Sample Depth: 13 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 07.28.2019 12:05

Basis: Wet Weight

Seq Number: 3096984

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3.67	4.99	0.857	mg/kg	07.29.2019 12:55	J	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 08.02.2019 16:17

Basis: Wet Weight

Seq Number: 3097488

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	10.1	50.0	10.0	mg/kg	08.03.2019 04:17	J	1
Diesel Range Organics (DRO)	C10C28DRO	452	50.0	10.0	mg/kg	08.03.2019 04:17		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	73.8	50.0	10.0	mg/kg	08.03.2019 04:17		1
Total TPH	PHC635	536	50.0	10.0	mg/kg	08.03.2019 04:17		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	08.03.2019 04:17	
o-Terphenyl	84-15-1	92	%	70-135	08.03.2019 04:17	



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **FL-13 @ 13'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-005

Date Collected: 07.22.2019 00:00

Sample Depth: 13 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 10:45

Basis: Wet Weight

Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	08.03.2019 03:14	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	08.03.2019 03:14	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	08.03.2019 03:14	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	08.03.2019 03:14	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	08.03.2019 03:14	U	1
Xylenes, Total	1330-20-7	<0.000342	0.00198	0.000342	mg/kg	08.03.2019 03:14	U	1
Total BTEX		<0.000342	0.00198	0.000342	mg/kg	08.03.2019 03:14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	120	%	70-130	08.03.2019 03:14			
1,4-Difluorobenzene	540-36-3	97	%	70-130	08.03.2019 03:14			



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: FL-14 @ 4'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-006	Date Collected: 07.22.2019 00:00	Sample Depth: 4 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:05	Basis: Wet Weight
Seq Number: 3096984		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3.95	5.04	0.865	mg/kg	07.29.2019 13:01	J	1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Basis: Wet Weight
Seq Number: 3097488	SUB: T104704215-19-29
Date Prep: 08.02.2019 16:20	

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<10.0	50.0	10.0	mg/kg	08.03.2019 04:36	U	1
Diesel Range Organics (DRO)	C10C28DRO	177	50.0	10.0	mg/kg	08.03.2019 04:36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	63.7	50.0	10.0	mg/kg	08.03.2019 04:36		1
Total TPH	PHC635	241	50.0	10.0	mg/kg	08.03.2019 04:36		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	08.03.2019 04:36	
o-Terphenyl	84-15-1	94	%	70-135	08.03.2019 04:36	



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **FL-14 @ 4'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-006

Date Collected: 07.22.2019 00:00

Sample Depth: 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 10:45

Basis: Wet Weight

Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.03.2019 03:35	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.03.2019 03:35	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.03.2019 03:35	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.03.2019 03:35	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.03.2019 03:35	U	1
Xylenes, Total	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	08.03.2019 03:35	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	08.03.2019 03:35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	121	%	70-130	08.03.2019 03:35			
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.03.2019 03:35			



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **FL-15 @ 13'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-007

Date Collected: 07.23.2019 00:00

Sample Depth: 13 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 07.28.2019 12:05

Basis: Wet Weight

Seq Number: 3096984

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.20	5.04	0.865	mg/kg	07.29.2019 13:06		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 08.02.2019 16:23

Basis: Wet Weight

Seq Number: 3097488

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.99	50.0	9.99	mg/kg	08.03.2019 04:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.8	50.0	9.99	mg/kg	08.03.2019 04:55	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.99	50.0	9.99	mg/kg	08.03.2019 04:55	U	1
Total TPH	PHC635	15.8	50.0	9.99	mg/kg	08.03.2019 04:55	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	08.03.2019 04:55	
o-Terphenyl	84-15-1	103	%	70-135	08.03.2019 04:55	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **FL-15 @ 13'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-007

Date Collected: 07.23.2019 00:00

Sample Depth: 13 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 10:45

Basis: Wet Weight

Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	08.03.2019 03:55	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	08.03.2019 03:55	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	08.03.2019 03:55	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	08.03.2019 03:55	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	08.03.2019 03:55	U	1
Xylenes, Total	1330-20-7	<0.000346	0.00201	0.000346	mg/kg	08.03.2019 03:55	U	1
Total BTEX		<0.000346	0.00201	0.000346	mg/kg	08.03.2019 03:55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	118	%	70-130	08.03.2019 03:55			
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.03.2019 03:55			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **FL-16 @ 13'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-008

Date Collected: 07.23.2019 00:00

Sample Depth: 13 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: SPC

% Moisture:

Analyst: SPC

Date Prep: 07.28.2019 12:05

Basis: Wet Weight

Seq Number: 3096984

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2.89	5.03	0.864	mg/kg	07.29.2019 13:11	J	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ISU

% Moisture:

Analyst: ISU

Date Prep: 08.02.2019 16:26

Basis: Wet Weight

Seq Number: 3097488

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<10.0	50.0	10.0	mg/kg	08.03.2019 05:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<10.0	50.0	10.0	mg/kg	08.03.2019 05:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<10.0	50.0	10.0	mg/kg	08.03.2019 05:14	U	1
Total TPH	PHC635	<10.0	50.0	10.0	mg/kg	08.03.2019 05:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	08.03.2019 05:14	
o-Terphenyl	84-15-1	102	%	70-135	08.03.2019 05:14	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **FL-16 @ 13'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-008

Date Collected: 07.23.2019 00:00

Sample Depth: 13 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 10:45

Basis: Wet Weight

Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.03.2019 05:13	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.03.2019 05:13	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.03.2019 05:13	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.03.2019 05:13	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.03.2019 05:13	U	1
Xylenes, Total	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	08.03.2019 05:13	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	08.03.2019 05:13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	100	%	70-130	08.03.2019 05:13			
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.03.2019 05:13			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: WSW-7 @ 2'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-009	Date Collected: 07.22.2019 00:00	Sample Depth: 2 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4.21	5.04	0.865	mg/kg	07.29.2019 13:44	JX	1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Date Prep: 08.02.2019 16:29
Seq Number: 3097488	Basis: Wet Weight
	SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.99	50.0	9.99	mg/kg	08.03.2019 05:52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.99	50.0	9.99	mg/kg	08.03.2019 05:52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.99	50.0	9.99	mg/kg	08.03.2019 05:52	U	1
Total TPH	PHC635	<9.99	50.0	9.99	mg/kg	08.03.2019 05:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	85	%	70-135	08.03.2019 05:52	
o-Terphenyl	84-15-1	92	%	70-135	08.03.2019 05:52	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **WSW-7 @ 2'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-009

Date Collected: 07.22.2019 00:00

Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 10:45

Basis: Wet Weight

Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	08.04.2019 04:37	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	08.04.2019 04:37	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	08.04.2019 04:37	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	08.04.2019 04:37	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	08.04.2019 04:37	U	1
Xylenes, Total	1330-20-7	<0.000342	0.00199	0.000342	mg/kg	08.04.2019 04:37	U	1
Total BTEX		<0.000342	0.00199	0.000342	mg/kg	08.04.2019 04:37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	109	%	70-130	08.04.2019 04:37			
1,4-Difluorobenzene	540-36-3	99	%	70-130	08.04.2019 04:37			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: NSW-4A @ 3'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-010	Date Collected: 07.22.2019 00:00	Sample Depth: 3 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.73	4.99	0.857	mg/kg	07.29.2019 14:00		1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Basis: Wet Weight
Seq Number: 3097488	SUB: T104704215-19-29
Date Prep: 08.02.2019 16:32	

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<10.0	50.0	10.0	mg/kg	08.03.2019 06:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<10.0	50.0	10.0	mg/kg	08.03.2019 06:11	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<10.0	50.0	10.0	mg/kg	08.03.2019 06:11	U	1
Total TPH	PHC635	<10.0	50.0	10.0	mg/kg	08.03.2019 06:11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	08.03.2019 06:11	
o-Terphenyl	84-15-1	104	%	70-135	08.03.2019 06:11	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **NSW-4A @ 3'** Matrix: Soil Date Received: 07.25.2019 11:36
 Lab Sample Id: 632071-010 Date Collected: 07.22.2019 00:00 Sample Depth: 3 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: KTL % Moisture:
 Analyst: ALG Date Prep: 07.31.2019 10:45 Basis: Wet Weight
 Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.03.2019 05:54	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.03.2019 05:54	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.03.2019 05:54	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.03.2019 05:54	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.03.2019 05:54	U	1
Xylenes, Total	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	08.03.2019 05:54	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	08.03.2019 05:54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.03.2019 05:54			
1,4-Difluorobenzene	540-36-3	102	%	70-130	08.03.2019 05:54			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: NSW-4B @ 9'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-011	Date Collected: 07.22.2019 00:00	Sample Depth: 9 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3.11	4.96	0.852	mg/kg	07.29.2019 14:06	J	1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Date Prep: 08.02.2019 16:35
Seq Number: 3097488	Basis: Wet Weight
	SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<10.0	50.0	10.0	mg/kg	08.03.2019 06:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	10.3	50.0	10.0	mg/kg	08.03.2019 06:30	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<10.0	50.0	10.0	mg/kg	08.03.2019 06:30	U	1
Total TPH	PHC635	10.3	50.0	10.0	mg/kg	08.03.2019 06:30	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	08.03.2019 06:30	
o-Terphenyl	84-15-1	105	%	70-135	08.03.2019 06:30	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **NSW-4B @ 9'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-011

Date Collected: 07.22.2019 00:00

Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 10:45

Basis: Wet Weight

Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	08.03.2019 06:14	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	08.03.2019 06:14	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	08.03.2019 06:14	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	08.03.2019 06:14	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	08.03.2019 06:14	U	1
Xylenes, Total	1330-20-7	<0.000342	0.00198	0.000342	mg/kg	08.03.2019 06:14	U	1
Total BTEX		<0.000342	0.00198	0.000342	mg/kg	08.03.2019 06:14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	105	%	70-130	08.03.2019 06:14			
4-Bromofluorobenzene	460-00-4	116	%	70-130	08.03.2019 06:14			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: NSW-5A @ 3'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-012	Date Collected: 07.22.2019 00:00	Sample Depth: 3 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3.55	4.95	0.850	mg/kg	07.29.2019 14:11	J	1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Date Prep: 08.02.2019 16:38
Seq Number: 3097488	Basis: Wet Weight
	SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.96	49.8	9.96	mg/kg	08.05.2019 09:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	14.3	49.8	9.96	mg/kg	08.05.2019 09:47	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.96	49.8	9.96	mg/kg	08.05.2019 09:47	U	1
Total TPH	PHC635	14.3	49.8	9.96	mg/kg	08.05.2019 09:47	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	08.05.2019 09:47	
o-Terphenyl	84-15-1	109	%	70-135	08.05.2019 09:47	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: NSW-5A @ 3'

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-012

Date Collected: 07.22.2019 00:00

Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 10:45

Basis: Wet Weight

Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.03.2019 06:34	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.03.2019 06:34	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.03.2019 06:34	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.03.2019 06:34	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.03.2019 06:34	U	1
Xylenes, Total	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	08.03.2019 06:34	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	08.03.2019 06:34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.03.2019 06:34			
4-Bromofluorobenzene	460-00-4	108	%	70-130	08.03.2019 06:34			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: NSW-5B @ 9'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-013	Date Collected: 07.22.2019 00:00	Sample Depth: 9 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3.00	4.97	0.853	mg/kg	07.29.2019 14:17	J	1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Date Prep: 08.02.2019 16:41
Seq Number: 3097488	Basis: Wet Weight
	SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<10.0	50.0	10.0	mg/kg	08.05.2019 10:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	41.8	50.0	10.0	mg/kg	08.05.2019 10:06	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	13.2	50.0	10.0	mg/kg	08.05.2019 10:06	J	1
Total TPH	PHC635	55.0	50.0	10.0	mg/kg	08.05.2019 10:06		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	08.05.2019 10:06	
o-Terphenyl	84-15-1	118	%	70-135	08.05.2019 10:06	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **NSW-5B @ 9'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-013

Date Collected: 07.22.2019 00:00

Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 10:45

Basis: Wet Weight

Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	08.03.2019 06:54	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	08.03.2019 06:54	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	08.03.2019 06:54	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	08.03.2019 06:54	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	08.03.2019 06:54	U	1
Xylenes, Total	1330-20-7	<0.000345	0.00200	0.000345	mg/kg	08.03.2019 06:54	U	1
Total BTEX		<0.000345	0.00200	0.000345	mg/kg	08.03.2019 06:54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	105	%	70-130	08.03.2019 06:54			
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.03.2019 06:54			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: NSW-6A @ 3'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-014	Date Collected: 07.22.2019 00:00	Sample Depth: 3 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4.92	5.04	0.865	mg/kg	07.29.2019 14:33	J	1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Date Prep: 08.02.2019 16:44
Seq Number: 3097488	Basis: Wet Weight
	SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.98	49.9	9.98	mg/kg	08.05.2019 10:24	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.2	49.9	9.98	mg/kg	08.05.2019 10:24	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.98	49.9	9.98	mg/kg	08.05.2019 10:24	U	1
Total TPH	PHC635	15.2	49.9	9.98	mg/kg	08.05.2019 10:24	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	08.05.2019 10:24	
o-Terphenyl	84-15-1	116	%	70-135	08.05.2019 10:24	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **NSW-6A @ 3'** Matrix: Soil Date Received: 07.25.2019 11:36
 Lab Sample Id: 632071-014 Date Collected: 07.22.2019 00:00 Sample Depth: 3 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: KTL % Moisture:
 Analyst: ALG Date Prep: 07.31.2019 10:45 Basis: Wet Weight
 Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	08.04.2019 04:58	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	08.04.2019 04:58	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	08.04.2019 04:58	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	08.04.2019 04:58	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	08.04.2019 04:58	U	1
Xylenes, Total	1330-20-7	<0.000343	0.00199	0.000343	mg/kg	08.04.2019 04:58	U	1
Total BTEX		<0.000343	0.00199	0.000343	mg/kg	08.04.2019 04:58	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	123	%	70-130	08.04.2019 04:58			
1,4-Difluorobenzene	540-36-3	101	%	70-130	08.04.2019 04:58			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: NSW-6B @ 9'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-015	Date Collected: 07.22.2019 00:00	Sample Depth: 9 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.4	5.05	0.867	mg/kg	07.29.2019 14:38		1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Basis: Wet Weight
Seq Number: 3097488	SUB: T104704215-19-29
Date Prep: 08.02.2019 16:47	

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.99	50.0	9.99	mg/kg	08.05.2019 10:43	U	1
Diesel Range Organics (DRO)	C10C28DRO	23.4	50.0	9.99	mg/kg	08.05.2019 10:43	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.99	50.0	9.99	mg/kg	08.05.2019 10:43	U	1
Total TPH	PHC635	23.4	50.0	9.99	mg/kg	08.05.2019 10:43	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	08.05.2019 10:43	
o-Terphenyl	84-15-1	117	%	70-135	08.05.2019 10:43	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **NSW-6B @ 9'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-015

Date Collected: 07.22.2019 00:00

Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 10:45

Basis: Wet Weight

Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	08.03.2019 07:34	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	08.03.2019 07:34	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	08.03.2019 07:34	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	08.03.2019 07:34	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	08.03.2019 07:34	U	1
Xylenes, Total	1330-20-7	<0.000343	0.00199	0.000343	mg/kg	08.03.2019 07:34	U	1
Total BTEX		<0.000343	0.00199	0.000343	mg/kg	08.03.2019 07:34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	106	%	70-130	08.03.2019 07:34			
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.03.2019 07:34			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: NSW-8A @ 3'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-016	Date Collected: 07.22.2019 00:00	Sample Depth: 3 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.00	4.98	0.855	mg/kg	07.29.2019 14:44		1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Date Prep: 08.02.2019 16:50
Seq Number: 3097488	Basis: Wet Weight
	SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	11.5	50.0	10.0	mg/kg	08.05.2019 11:02	J	1
Diesel Range Organics (DRO)	C10C28DRO	65.3	50.0	10.0	mg/kg	08.05.2019 11:02		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	15.6	50.0	10.0	mg/kg	08.05.2019 11:02	J	1
Total TPH	PHC635	92.4	50.0	10.0	mg/kg	08.05.2019 11:02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	08.05.2019 11:02	
o-Terphenyl	84-15-1	119	%	70-135	08.05.2019 11:02	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **NSW-8A @ 3'** Matrix: Soil Date Received: 07.25.2019 11:36
 Lab Sample Id: 632071-016 Date Collected: 07.22.2019 00:00 Sample Depth: 3 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: KTL % Moisture:
 Analyst: ALG Date Prep: 07.31.2019 10:45 Basis: Wet Weight
 Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	08.03.2019 07:55	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	08.03.2019 07:55	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	08.03.2019 07:55	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	08.03.2019 07:55	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	08.03.2019 07:55	U	1
Xylenes, Total	1330-20-7	<0.000345	0.00200	0.000345	mg/kg	08.03.2019 07:55	U	1
Total BTEX		<0.000345	0.00200	0.000345	mg/kg	08.03.2019 07:55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	111	%	70-130	08.03.2019 07:55			
1,4-Difluorobenzene	540-36-3	108	%	70-130	08.03.2019 07:55			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: NSW-8B @ 9'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-017	Date Collected: 07.22.2019 00:00	Sample Depth: 9 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.02	4.95	0.850	mg/kg	07.29.2019 14:49		1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Basis: Wet Weight
Seq Number: 3097488	SUB: T104704215-19-29
Date Prep: 08.02.2019 16:53	

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.99	50.0	9.99	mg/kg	08.03.2019 07:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	23.0	50.0	9.99	mg/kg	08.03.2019 07:25	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.99	50.0	9.99	mg/kg	08.03.2019 07:25	U	1
Total TPH	PHC635	23.0	50.0	9.99	mg/kg	08.03.2019 07:25	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	08.03.2019 07:25	
o-Terphenyl	84-15-1	106	%	70-135	08.03.2019 07:25	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **NSW-8B @ 9'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-017

Date Collected: 07.22.2019 00:00

Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 10:45

Basis: Wet Weight

Seq Number: 3097423

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	08.03.2019 08:15	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	08.03.2019 08:15	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	08.03.2019 08:15	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	08.03.2019 08:15	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	08.03.2019 08:15	U	1
Xylenes, Total	1330-20-7	<0.000343	0.00199	0.000343	mg/kg	08.03.2019 08:15	U	1
Total BTEX		<0.000343	0.00199	0.000343	mg/kg	08.03.2019 08:15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.03.2019 08:15			
4-Bromofluorobenzene	460-00-4	115	%	70-130	08.03.2019 08:15			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **NSW-10A @ 3'** Matrix: Soil Date Received: 07.25.2019 11:36
 Lab Sample Id: 632071-018 Date Collected: 07.23.2019 00:00 Sample Depth: 3 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: SPC % Moisture:
 Analyst: SPC Date Prep: 07.28.2019 12:20 Basis: Wet Weight
 Seq Number: 3096989

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2.90	5.04	0.865	mg/kg	07.29.2019 14:54	J	1

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P
 Tech: ISU % Moisture:
 Analyst: ISU Date Prep: 08.02.2019 16:56 Basis: Wet Weight
 Seq Number: 3097488 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.99	50.0	9.99	mg/kg	08.05.2019 11:20	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.99	50.0	9.99	mg/kg	08.05.2019 11:20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.99	50.0	9.99	mg/kg	08.05.2019 11:20	U	1
Total TPH	PHC635	<9.99	50.0	9.99	mg/kg	08.05.2019 11:20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	08.05.2019 11:20	
o-Terphenyl	84-15-1	117	%	70-135	08.05.2019 11:20	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **NSW-10A @ 3'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-018

Date Collected: 07.23.2019 00:00

Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 13:15

Basis: Wet Weight

Seq Number: 3097431

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.02.2019 01:02	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.02.2019 01:02	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.02.2019 01:02	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.02.2019 01:02	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.02.2019 01:02	U	1
Xylenes, Total	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	08.02.2019 01:02	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	08.02.2019 01:02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	109	%	70-130	08.02.2019 01:02			
1,4-Difluorobenzene	540-36-3	100	%	70-130	08.02.2019 01:02			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: NSW-10B @ 9'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-019	Date Collected: 07.23.2019 00:00	Sample Depth: 9 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3.11	4.97	0.853	mg/kg	07.29.2019 15:00	J	1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Basis: Wet Weight
Seq Number: 3097488	SUB: T104704215-19-29
Date Prep: 08.02.2019 16:59	

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.96	49.8	9.96	mg/kg	08.03.2019 05:52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.96	49.8	9.96	mg/kg	08.03.2019 05:52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.96	49.8	9.96	mg/kg	08.03.2019 05:52	U	1
Total TPH	PHC635	<9.96	49.8	9.96	mg/kg	08.03.2019 05:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	08.03.2019 05:52	
o-Terphenyl	84-15-1	112	%	70-135	08.03.2019 05:52	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **NSW-10B @ 9'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-019

Date Collected: 07.23.2019 00:00

Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 13:15

Basis: Wet Weight

Seq Number: 3097431

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	08.02.2019 01:23	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	08.02.2019 01:23	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	08.02.2019 01:23	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	08.02.2019 01:23	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.02.2019 01:23	U	1
Xylenes, Total	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	08.02.2019 01:23	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	08.02.2019 01:23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.02.2019 01:23			
4-Bromofluorobenzene	460-00-4	112	%	70-130	08.02.2019 01:23			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: SSW-4A @ 3'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-020	Date Collected: 07.22.2019 00:00	Sample Depth: 3 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.16	5.03	0.864	mg/kg	07.29.2019 15:16		1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Date Prep: 08.02.2019 17:19
Seq Number: 3097677	Basis: Wet Weight
	SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.96	49.8	9.96	mg/kg	08.05.2019 10:43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.96	49.8	9.96	mg/kg	08.05.2019 10:43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.96	49.8	9.96	mg/kg	08.05.2019 10:43	U	1
Total TPH	PHC635	<9.96	49.8	9.96	mg/kg	08.05.2019 10:43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	08.05.2019 10:43	
o-Terphenyl	84-15-1	98	%	70-135	08.05.2019 10:43	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **SSW-4A @ 3'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-020

Date Collected: 07.22.2019 00:00

Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 13:15

Basis: Wet Weight

Seq Number: 3097431

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	08.02.2019 02:17	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	08.02.2019 02:17	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	08.02.2019 02:17	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	08.02.2019 02:17	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	08.02.2019 02:17	U	1
Xylenes, Total	1330-20-7	<0.000345	0.00200	0.000345	mg/kg	08.02.2019 02:17	U	1
Total BTEX		<0.000345	0.00200	0.000345	mg/kg	08.02.2019 02:17	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	111	%	70-130	08.02.2019 02:17			
4-Bromofluorobenzene	460-00-4	114	%	70-130	08.02.2019 02:17			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: SSW-4B @ 9'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-021	Date Collected: 07.22.2019 00:00	Sample Depth: 9 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.93	5.03	0.864	mg/kg	07.29.2019 15:22		1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Date Prep: 08.02.2019 17:22
Seq Number: 3097677	Basis: Wet Weight
	SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<10.0	50.0	10.0	mg/kg	08.05.2019 11:02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<10.0	50.0	10.0	mg/kg	08.05.2019 11:02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<10.0	50.0	10.0	mg/kg	08.05.2019 11:02	U	1
Total TPH	PHC635	<10.0	50.0	10.0	mg/kg	08.05.2019 11:02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	08.05.2019 11:02	
o-Terphenyl	84-15-1	102	%	70-135	08.05.2019 11:02	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **SSW-4B @ 9'** Matrix: Soil Date Received: 07.25.2019 11:36
 Lab Sample Id: 632071-021 Date Collected: 07.22.2019 00:00 Sample Depth: 9 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: KTL % Moisture:
 Analyst: ALG Date Prep: 07.31.2019 13:15 Basis: Wet Weight
 Seq Number: 3097431

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	08.04.2019 05:19	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	08.04.2019 05:19	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	08.04.2019 05:19	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	08.04.2019 05:19	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	08.04.2019 05:19	U	1
Xylenes, Total	1330-20-7	<0.000342	0.00198	0.000342	mg/kg	08.04.2019 05:19	U	1
Total BTEX		<0.000342	0.00198	0.000342	mg/kg	08.04.2019 05:19	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.04.2019 05:19			
4-Bromofluorobenzene	460-00-4	120	%	70-130	08.04.2019 05:19			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: SSW-5A @ 3'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-022	Date Collected: 07.22.2019 00:00	Sample Depth: 3 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3.55	4.99	0.857	mg/kg	07.29.2019 15:38	J	1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Date Prep: 08.02.2019 17:31
Seq Number: 3097677	Basis: Wet Weight
	SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.99	50.0	9.99	mg/kg	08.05.2019 11:58	U	1
Diesel Range Organics (DRO)	C10C28DRO	18.9	50.0	9.99	mg/kg	08.05.2019 11:58	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.99	50.0	9.99	mg/kg	08.05.2019 11:58	U	1
Total TPH	PHC635	18.9	50.0	9.99	mg/kg	08.05.2019 11:58	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	08.05.2019 11:58	
o-Terphenyl	84-15-1	103	%	70-135	08.05.2019 11:58	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **SSW-5A @ 3'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-022

Date Collected: 07.22.2019 00:00

Sample Depth: 3 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 13:15

Basis: Wet Weight

Seq Number: 3097431

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	08.02.2019 03:01	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	08.02.2019 03:01	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	08.02.2019 03:01	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	08.02.2019 03:01	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	08.02.2019 03:01	U	1
Xylenes, Total	1330-20-7	<0.000346	0.00201	0.000346	mg/kg	08.02.2019 03:01	U	1
Total BTEX		<0.000346	0.00201	0.000346	mg/kg	08.02.2019 03:01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	104	%	70-130	08.02.2019 03:01			
4-Bromofluorobenzene	460-00-4	117	%	70-130	08.02.2019 03:01			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: SSW-5B @ 9'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-023	Date Collected: 07.22.2019 00:00	Sample Depth: 9 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.00	4.98	0.855	mg/kg	07.29.2019 15:43		1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Date Prep: 08.02.2019 17:34
Seq Number: 3097677	Basis: Wet Weight
	SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.97	49.9	9.97	mg/kg	08.05.2019 12:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.97	49.9	9.97	mg/kg	08.05.2019 12:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.97	49.9	9.97	mg/kg	08.05.2019 12:17	U	1
Total TPH	PHC635	<9.97	49.9	9.97	mg/kg	08.05.2019 12:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	86	%	70-135	08.05.2019 12:17	
o-Terphenyl	84-15-1	95	%	70-135	08.05.2019 12:17	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **SSW-5B @ 9'** Matrix: Soil Date Received: 07.25.2019 11:36
 Lab Sample Id: 632071-023 Date Collected: 07.22.2019 00:00 Sample Depth: 9 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
 Tech: KTL % Moisture:
 Analyst: ALG Date Prep: 07.31.2019 13:15 Basis: Wet Weight
 Seq Number: 3097431

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	08.02.2019 03:23	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	08.02.2019 03:23	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	08.02.2019 03:23	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	08.02.2019 03:23	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	08.02.2019 03:23	U	1
Xylenes, Total	1330-20-7	<0.000343	0.00199	0.000343	mg/kg	08.02.2019 03:23	U	1
Total BTEX		<0.000343	0.00199	0.000343	mg/kg	08.02.2019 03:23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	115	%	70-130	08.02.2019 03:23			
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.02.2019 03:23			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: SSW-6 @ 9'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-024	Date Collected: 07.22.2019 00:00	Sample Depth: 9 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.29	5.04	0.865	mg/kg	07.29.2019 15:49		1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Basis: Wet Weight
Seq Number: 3097677	SUB: T104704215-19-29
Date Prep: 08.02.2019 17:37	

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.96	49.8	9.96	mg/kg	08.05.2019 12:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	25.2	49.8	9.96	mg/kg	08.05.2019 12:35	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.96	49.8	9.96	mg/kg	08.05.2019 12:35	U	1
Total TPH	PHC635	25.2	49.8	9.96	mg/kg	08.05.2019 12:35	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	08.05.2019 12:35	
o-Terphenyl	84-15-1	104	%	70-135	08.05.2019 12:35	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **SSW-6 @ 9'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-024

Date Collected: 07.22.2019 00:00

Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 13:15

Basis: Wet Weight

Seq Number: 3097431

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	08.04.2019 05:40	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	08.04.2019 05:40	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	08.04.2019 05:40	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	08.04.2019 05:40	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	08.04.2019 05:40	U	1
Xylenes, Total	1330-20-7	<0.000342	0.00198	0.000342	mg/kg	08.04.2019 05:40	U	1
Total BTEX		<0.000342	0.00198	0.000342	mg/kg	08.04.2019 05:40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.04.2019 05:40			
4-Bromofluorobenzene	460-00-4	125	%	70-130	08.04.2019 05:40			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: SSW-7 @ 2'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-025	Date Collected: 07.22.2019 00:00	Sample Depth: 2 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2.08	5.01	0.860	mg/kg	07.29.2019 15:54	J	1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Basis: Wet Weight
Seq Number: 3097677	SUB: T104704215-19-29
Date Prep: 08.02.2019 17:40	

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<10.0	50.0	10.0	mg/kg	08.05.2019 12:54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<10.0	50.0	10.0	mg/kg	08.05.2019 12:54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<10.0	50.0	10.0	mg/kg	08.05.2019 12:54	U	1
Total TPH	PHC635	<10.0	50.0	10.0	mg/kg	08.05.2019 12:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	84	%	70-135	08.05.2019 12:54	
o-Terphenyl	84-15-1	90	%	70-135	08.05.2019 12:54	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **SSW-7 @ 2'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-025

Date Collected: 07.22.2019 00:00

Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 13:15

Basis: Wet Weight

Seq Number: 3097431

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	08.02.2019 04:08	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	08.02.2019 04:08	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	08.02.2019 04:08	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	08.02.2019 04:08	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	08.02.2019 04:08	U	1
Xylenes, Total	1330-20-7	<0.000346	0.00201	0.000346	mg/kg	08.02.2019 04:08	U	1
Total BTEX		<0.000346	0.00201	0.000346	mg/kg	08.02.2019 04:08	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	108	%	70-130	08.02.2019 04:08			
1,4-Difluorobenzene	540-36-3	103	%	70-130	08.02.2019 04:08			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: SSW-8 @ 9'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-026	Date Collected: 07.22.2019 00:00	Sample Depth: 9 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4.77	4.97	0.853	mg/kg	07.29.2019 15:59	J	1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Basis: Wet Weight
Seq Number: 3097677	SUB: T104704215-19-29
Date Prep: 08.02.2019 17:43	

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<10.0	50.0	10.0	mg/kg	08.05.2019 13:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<10.0	50.0	10.0	mg/kg	08.05.2019 13:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<10.0	50.0	10.0	mg/kg	08.05.2019 13:13	U	1
Total TPH	PHC635	<10.0	50.0	10.0	mg/kg	08.05.2019 13:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	08.05.2019 13:13	
o-Terphenyl	84-15-1	100	%	70-135	08.05.2019 13:13	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **SSW-8 @ 9'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-026

Date Collected: 07.22.2019 00:00

Sample Depth: 9 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 13:15

Basis: Wet Weight

Seq Number: 3097431

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	08.02.2019 04:32	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	08.02.2019 04:32	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	08.02.2019 04:32	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	08.02.2019 04:32	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	08.02.2019 04:32	U	1
Xylenes, Total	1330-20-7	<0.000346	0.00201	0.000346	mg/kg	08.02.2019 04:32	U	1
Total BTEX		<0.000346	0.00201	0.000346	mg/kg	08.02.2019 04:32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	104	%	70-130	08.02.2019 04:32			
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.02.2019 04:32			



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: SSW-9 @ 2'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-027	Date Collected: 07.22.2019 00:00	Sample Depth: 2 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.86	5.02	0.862	mg/kg	07.29.2019 16:05		1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Basis: Wet Weight
Seq Number: 3097677	SUB: T104704215-19-29
Date Prep: 08.02.2019 17:46	

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.95	49.8	9.95	mg/kg	08.05.2019 16:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	50.2	49.8	9.95	mg/kg	08.05.2019 16:42		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	23.0	49.8	9.95	mg/kg	08.05.2019 16:42	J	1
Total TPH	PHC635	73.2	49.8	9.95	mg/kg	08.05.2019 16:42		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	08.05.2019 16:42	
o-Terphenyl	84-15-1	110	%	70-135	08.05.2019 16:42	



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Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **SSW-9 @ 2'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-027

Date Collected: 07.22.2019 00:00

Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 13:15

Basis: Wet Weight

Seq Number: 3097431

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	08.02.2019 04:54	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	08.02.2019 04:54	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	08.02.2019 04:54	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	08.02.2019 04:54	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	08.02.2019 04:54	U	1
Xylenes, Total	1330-20-7	<0.000342	0.00198	0.000342	mg/kg	08.02.2019 04:54	U	1
Total BTEX		<0.000342	0.00198	0.000342	mg/kg	08.02.2019 04:54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	113	%	70-130	08.02.2019 04:54			
1,4-Difluorobenzene	540-36-3	106	%	70-130	08.02.2019 04:54			



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: SSW-10 @ 9'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-028	Date Collected: 07.23.2019 00:00	Sample Depth: 9 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 12:20	Basis: Wet Weight
Seq Number: 3096989		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3.22	5.03	0.864	mg/kg	07.29.2019 16:10	J	1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Date Prep: 08.02.2019 17:49
Seq Number: 3097677	Basis: Wet Weight
	SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	10.0	50.0	10.0	mg/kg	08.05.2019 17:21	J	1
Diesel Range Organics (DRO)	C10C28DRO	234	50.0	10.0	mg/kg	08.05.2019 17:21		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	25.5	50.0	10.0	mg/kg	08.05.2019 17:21	J	1
Total TPH	PHC635	270	50.0	10.0	mg/kg	08.05.2019 17:21		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	08.05.2019 17:21	
o-Terphenyl	84-15-1	107	%	70-135	08.05.2019 17:21	



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: SSW-10 @ 9'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-028	Date Collected: 07.23.2019 00:00	Sample Depth: 9 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: KTL		% Moisture:
Analyst: ALG	Date Prep: 07.31.2019 13:15	Basis: Wet Weight
Seq Number: 3097431		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	08.02.2019 06:24	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	08.02.2019 06:24	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	08.02.2019 06:24	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	08.02.2019 06:24	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.02.2019 06:24	U	1
Xylenes, Total	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	08.02.2019 06:24	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	08.02.2019 06:24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	118	%	70-130	08.02.2019 06:24			
1,4-Difluorobenzene	540-36-3	93	%	70-130	08.02.2019 06:24			



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: SSW-11 @ 2'	Matrix: Soil	Date Received: 07.25.2019 11:36
Lab Sample Id: 632071-029	Date Collected: 07.23.2019 00:00	Sample Depth: 2 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 07.28.2019 17:20	Basis: Wet Weight
Seq Number: 3096699		

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	0.922	4.96	0.852	mg/kg	07.29.2019 09:36	J	1

Analytical Method: TPH By SW8015 Mod	Prep Method: TX1005P
Tech: ISU	% Moisture:
Analyst: ISU	Date Prep: 08.02.2019 17:52
Seq Number: 3097677	Basis: Wet Weight
	SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.99	50.0	9.99	mg/kg	08.05.2019 17:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.99	50.0	9.99	mg/kg	08.05.2019 17:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.99	50.0	9.99	mg/kg	08.05.2019 17:44	U	1
Total TPH	PHC635	<9.99	50.0	9.99	mg/kg	08.05.2019 17:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	08.05.2019 17:44	
o-Terphenyl	84-15-1	115	%	70-135	08.05.2019 17:44	



Certificate of Analytical Results 632071

Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Fed 14 Tie 1N

Sample Id: **SSW-11 @ 2'**

Matrix: Soil

Date Received: 07.25.2019 11:36

Lab Sample Id: 632071-029

Date Collected: 07.23.2019 00:00

Sample Depth: 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5030B

Tech: KTL

% Moisture:

Analyst: ALG

Date Prep: 07.31.2019 13:15

Basis: Wet Weight

Seq Number: 3097431

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	08.04.2019 06:02	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	08.04.2019 06:02	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	08.04.2019 06:02	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	08.04.2019 06:02	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	08.04.2019 06:02	U	1
Xylenes, Total	1330-20-7	<0.000346	0.00201	0.000346	mg/kg	08.04.2019 06:02	U	1
Total BTEX		<0.000346	0.00201	0.000346	mg/kg	08.04.2019 06:02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	77	%	70-130	08.04.2019 06:02			
1,4-Difluorobenzene	540-36-3	107	%	70-130	08.04.2019 06:02			



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



QC Summary 632071

Tasman Geosciences, LLC

Todd 15N Fed 14 Tie 1N

Analytical Method: Chloride by EPA 300

Seq Number: 3096984

MB Sample Id: 7682955-1-BLK

Matrix: Solid

LCS Sample Id: 7682955-1-BKS

Prep Method: E300P

Date Prep: 07.28.2019

LCSD Sample Id: 7682955-1-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	261	104	262	105	90-110	0	20	mg/kg	07.29.2019 10:34	

Analytical Method: Chloride by EPA 300

Seq Number: 3096989

MB Sample Id: 7682956-1-BLK

Matrix: Solid

LCS Sample Id: 7682956-1-BKS

Prep Method: E300P

Date Prep: 07.28.2019

LCSD Sample Id: 7682956-1-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	259	104	262	105	90-110	1	20	mg/kg	07.29.2019 13:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3096699

MB Sample Id: 7682964-1-BLK

Matrix: Solid

LCS Sample Id: 7682964-1-BKS

Prep Method: E300P

Date Prep: 07.28.2019

LCSD Sample Id: 7682964-1-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	254	102	90-110	2	20	mg/kg	07.29.2019 11:46	

Analytical Method: Chloride by EPA 300

Seq Number: 3096964

MB Sample Id: 7683144-1-BLK

Matrix: Solid

LCS Sample Id: 7683144-1-BKS

Prep Method: E300P

Date Prep: 07.30.2019

LCSD Sample Id: 7683144-1-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	264	106	264	106	90-110	0	20	mg/kg	07.30.2019 18:13	

Analytical Method: Chloride by EPA 300

Seq Number: 3096984

Parent Sample Id: 631931-241

Matrix: Soil

MS Sample Id: 631931-241 S

Prep Method: E300P

Date Prep: 07.28.2019

MSD Sample Id: 631931-241 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.33	251	271	107	274	108	90-110	1	20	mg/kg	07.29.2019 10:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3096984

Parent Sample Id: 631931-251

Matrix: Soil

MS Sample Id: 631931-251 S

Prep Method: E300P

Date Prep: 07.28.2019

MSD Sample Id: 631931-251 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	46.1	248	318	110	316	109	90-110	1	20	mg/kg	07.29.2019 12:06	

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 632071

Tasman Geosciences, LLC

Todd 15N Fed 14 Tie 1N

Analytical Method: Chloride by EPA 300

Seq Number: 3096989

Parent Sample Id: 632071-009

Matrix: Soil

MS Sample Id: 632071-009 S

Prep Method: E300P

Date Prep: 07.28.2019

MSD Sample Id: 632071-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	4.21	252	279	109	283	111	90-110	1	20	mg/kg	07.29.2019 13:49	X

Analytical Method: Chloride by EPA 300

Seq Number: 3096989

Parent Sample Id: 632071-019

Matrix: Soil

MS Sample Id: 632071-019 S

Prep Method: E300P

Date Prep: 07.28.2019

MSD Sample Id: 632071-019 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	3.11	249	272	108	272	108	90-110	0	20	mg/kg	07.29.2019 15:05	

Analytical Method: Chloride by EPA 300

Seq Number: 3096699

Parent Sample Id: 632071-029

Matrix: Soil

MS Sample Id: 632071-029 S

Prep Method: E300P

Date Prep: 07.28.2019

MSD Sample Id: 632071-029 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	0.922	248	254	102	249	100	90-110	2	20	mg/kg	07.29.2019 09:41	

Analytical Method: Chloride by EPA 300

Seq Number: 3096964

Parent Sample Id: 632071-001

Matrix: Soil

MS Sample Id: 632071-001 S

Prep Method: E300P

Date Prep: 07.30.2019

MSD Sample Id: 632071-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.27	252	316	124	318	125	90-110	1	20	mg/kg	07.31.2019 09:02	X

Analytical Method: Chloride by EPA 300

Seq Number: 3096964

Parent Sample Id: 632384-004

Matrix: Soil

MS Sample Id: 632384-004 S

Prep Method: E300P

Date Prep: 07.30.2019

MSD Sample Id: 632384-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	6.67	252	271	105	271	105	90-110	0	20	mg/kg	07.30.2019 20:00	

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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



QC Summary 632071

Tasman Geosciences, LLC

Todd 15N Fed 14 Tie 1N

Analytical Method: TPH By SW8015 Mod

Seq Number: 3097488

MB Sample Id: 7683425-1-BLK

Matrix: Solid

LCS Sample Id: 7683425-1-BKS

Prep Method: TX1005P

Date Prep: 08.02.2019

LCSD Sample Id: 7683425-1-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)	<10.0	1000	1130	113	1110	111	70-135	2	35	mg/kg	08.03.2019 01:28	
Diesel Range Organics (DRO)	<10.0	1000	1100	110	1080	108	70-135	2	35	mg/kg	08.03.2019 01:28	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		109		105		70-135	%	08.03.2019 01:28
o-Terphenyl	109		111		107		70-135	%	08.03.2019 01:28

Analytical Method: TPH By SW8015 Mod

Seq Number: 3097677

MB Sample Id: 7683426-1-BLK

Matrix: Solid

LCS Sample Id: 7683426-1-BKS

Prep Method: TX1005P

Date Prep: 08.02.2019

LCSD Sample Id: 7683426-1-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)	<10.0	1000	1140	114	916	92	70-135	22	35	mg/kg	08.06.2019 17:25	
Diesel Range Organics (DRO)	<10.0	1000	1240	124	1010	101	70-135	20	35	mg/kg	08.06.2019 17:25	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	95		117		104		70-135	%	08.06.2019 17:25
o-Terphenyl	105		124		120		70-135	%	08.06.2019 17:25

Analytical Method: TPH By SW8015 Mod

Seq Number: 3097488

Parent Sample Id: 632071-001

Matrix: Soil

MS Sample Id: 632071-001 S

Prep Method: TX1005P

Date Prep: 08.02.2019

MSD Sample Id: 632071-001 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)	<9.93	993	1110	112	1080	108	70-135	3	35	mg/kg	08.03.2019 02:43	
Diesel Range Organics (DRO)	79.2	993	1140	107	1090	101	70-135	4	35	mg/kg	08.03.2019 02:43	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		103		70-135	%	08.03.2019 02:43
o-Terphenyl	107		107		70-135	%	08.03.2019 02:43

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 632071

Tasman Geosciences, LLC

Todd 15N Fed 14 Tie 1N

Analytical Method: TPH By SW8015 Mod

Seq Number: 3097677

Parent Sample Id: 632071-021

Matrix: Soil

MS Sample Id: 632071-021 S

Prep Method: TX1005P

Date Prep: 08.02.2019

MSD Sample Id: 632071-021 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)	<9.96	996	1130	113	1130	113	70-135	0	35	mg/kg	08.06.2019 17:44	
Diesel Range Organics (DRO)	<9.96	996	1240	124	1230	123	70-135	1	35	mg/kg	08.06.2019 17:44	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	116		116		70-135	%	08.06.2019 17:44
o-Terphenyl	124		123		70-135	%	08.06.2019 17:44

Analytical Method: BTEX by EPA 8021B

Seq Number: 3097423

MB Sample Id: 7683184-1-BLK

Matrix: Solid

LCS Sample Id: 7683184-1-BKS

Prep Method: SW5030B

Date Prep: 07.31.2019

LCSD Sample Id: 7683184-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0978	98	0.0905	91	70-130	8	35	mg/kg	08.02.2019 10:52	
Toluene	<0.000456	0.100	0.0945	95	0.0875	88	70-130	8	35	mg/kg	08.02.2019 10:52	
Ethylbenzene	<0.000565	0.100	0.105	105	0.0975	98	70-130	7	35	mg/kg	08.02.2019 10:52	
m_p-Xylenes	<0.00101	0.200	0.212	106	0.195	98	70-130	8	35	mg/kg	08.02.2019 10:52	
o-Xylene	<0.000344	0.100	0.104	104	0.0960	96	70-130	8	35	mg/kg	08.02.2019 10:52	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		102		104		70-130	%	08.02.2019 10:52
4-Bromofluorobenzene	92		109		117		70-130	%	08.02.2019 10:52

Analytical Method: BTEX by EPA 8021B

Seq Number: 3097431

MB Sample Id: 7683197-1-BLK

Matrix: Solid

LCS Sample Id: 7683197-1-BKS

Prep Method: SW5030B

Date Prep: 07.31.2019

LCSD Sample Id: 7683197-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0940	94	0.104	104	70-130	10	35	mg/kg	08.02.2019 10:36	
Toluene	<0.000456	0.100	0.0909	91	0.0994	99	70-130	9	35	mg/kg	08.02.2019 10:36	
Ethylbenzene	<0.000565	0.100	0.101	101	0.112	112	70-130	10	35	mg/kg	08.02.2019 10:36	
m_p-Xylenes	<0.00101	0.200	0.203	102	0.226	113	70-130	11	35	mg/kg	08.02.2019 10:36	
o-Xylene	<0.000344	0.100	0.0987	99	0.110	110	70-130	11	35	mg/kg	08.02.2019 10:36	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		99		103		70-130	%	08.02.2019 10:36
4-Bromofluorobenzene	109		101		118		70-130	%	08.02.2019 10:36

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 632071

Tasman Geosciences, LLC

Todd 15N Fed 14 Tie 1N

Analytical Method: BTEX by EPA 8021B

Seq Number: 3097423

Parent Sample Id: 632071-001

Matrix: Soil

MS Sample Id: 632071-001 S

Prep Method: SW5030B

Date Prep: 07.31.2019

MSD Sample Id: 632071-001 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	0.0994	0.0970	98	0.108	108	70-130	11	35	mg/kg	08.05.2019 01:01	
Toluene	<0.000453	0.0994	0.0966	97	0.107	107	70-130	10	35	mg/kg	08.05.2019 01:01	
Ethylbenzene	<0.000561	0.0994	0.110	111	0.119	119	70-130	8	35	mg/kg	08.05.2019 01:01	
m_p-Xylenes	<0.00101	0.199	0.225	113	0.243	122	70-130	8	35	mg/kg	08.05.2019 01:01	
o-Xylene	<0.000342	0.0994	0.105	106	0.117	117	70-130	11	35	mg/kg	08.05.2019 01:01	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		101		70-130	%	08.05.2019 01:01
4-Bromofluorobenzene	113		125		70-130	%	08.05.2019 01:01

Analytical Method: BTEX by EPA 8021B

Seq Number: 3097431

Parent Sample Id: 632071-018

Matrix: Soil

MS Sample Id: 632071-018 S

Prep Method: SW5030B

Date Prep: 07.31.2019

MSD Sample Id: 632071-018 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.0879	88	0.0880	89	70-130	0	35	mg/kg	08.02.2019 11:17	
Toluene	<0.000455	0.0998	0.0809	81	0.0813	82	70-130	0	35	mg/kg	08.02.2019 11:17	
Ethylbenzene	<0.000564	0.0998	0.0791	79	0.0812	82	70-130	3	35	mg/kg	08.02.2019 11:17	
m_p-Xylenes	<0.00101	0.200	0.169	85	0.177	89	70-130	5	35	mg/kg	08.02.2019 11:17	
o-Xylene	<0.000344	0.0998	0.0873	87	0.0888	90	70-130	2	35	mg/kg	08.02.2019 11:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		106		70-130	%	08.02.2019 11:17
4-Bromofluorobenzene	123		129		70-130	%	08.02.2019 11:17

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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



Chain of Custody

Work Order No:

1026071

Houston, TX (281) 240-4200 Dallas, TX (214) 802-0380 San Antonio, TX (210) 508-3533
Midland, TX (432) 704-5440 El Paso, TX (915) 955-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (602) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 382-7550
Hobbs, NM (575) 382-7550

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Project Manager:	ZACH CANDEL	
Company Name:	TASMAN GEOSCIENCES	
Address:	2620 W. NAZAH BLD	
City, State, Zip:	HOUSTON, TX 77060	
Phone:	800-724-5943	2620 W. NAZAH BLD
Cell Tel. (if service):		
Company Name:	PLAINS AAPG	
Address:	50 AUREL GRAVES	
City, State, Zip:	HOUSTON, TX 77060	
Phone:	2620 W. NAZAH BLD	

Work Order Comments	
Program:	UST/ST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:	
Reporting Level II	☐ Level III ☐ PST/ST ☐ TRRP ☐ Level IV ☐
Deliverables:	EDD ☐ ADAPT ☐ Other: ☐

[illegible]

Total	200.7 / 6010	200.8 / 6020:	8RCRA	13PPM	Texae	11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO2	Na	Sr	Ti	Sn	U	V	Zn
Circle Method(s) and Metal(s) to be analyzed			TCLP / SPLP	6010:	8RCRA	SP	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U												
Notice: Signatures of this document and requalification of samples constitutes a valid purchase order from client company to Kemco, its affiliates and subcontractors. It assigns selected terms and conditions of service. Kemco will handle 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 Kemco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Kemco, but not analyzed. These terms will be enforced unless previously negotiated.																																		
1631 / 245.1 / 7470 / 7471 : Hg																																		

Initialed by (Signature)	Received by (Signature)	Date/Time	Relinquished by (Signature)	Received by (Signature)	Date/Time
Bucky G	Buttany Cox	7/24/03	Buttany Cox	Bucky G	7/25/19
					1134



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432-704-5440) El Paso, TX (915)585-3443 Lubbock, TX (806)794-1286
 Hobbs, NM (575-382-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Chain of Custody

Work Order No:

1038071

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Project Name:	ZACH GUNTER	Site to be analyzed:	FLINDS AREA
Company Name:	TKSMADGEDSCUESSES	Contract Name:	FLINDS AREA
Address:	2620 W. MARLBOROUGH RD	Address:	FLINDS AREA
City, State ZIP:	HOBBS, NM 88240	City, State ZIP:	FLINDS AREA
Phone:	806-724-5943	Email:	ZCANDLER@TKSMADGEDSCUESSES.COM
Project Name:	TODD'S & FEN 14 TIE IN	Turn Around:	
Project Number:		Routine:	☐
P.O. Number:		Rush:	☐
Sample Name:	RECEIVED AT F.I.D.	Due Date:	

SAMPLE RECEIPT	Temp. Date:	Yes	No	Temp. Date:	Yes	No
Temperature (C):	-1.3			Temperature (C):	19.2	
Received Date:	Yes	No		Received Date:	Yes	No
Order Custody Seal:	Yes	No		Order Custody Seal:	Yes	No
Sample Custody Seal:	Yes	No		Sample Custody Seal:	Yes	No

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	Analysis Request
USU-4A @ 3'	3'	7-22-19			1	RCI
USU-4B @ 9'	3'	7-22-19			1	CHLORIDES ~ 4500
USU-5A @ 3'	3'	7-22-19			1	TCLP BENZENE
USU-5B @ 9'	3'	7-22-19			1	TCLP RCRA 8
USU-6A @ 3'	3'	7-22-19			1	NORM
USU-6B @ 9'	3'	7-22-19			1	PAINT FILTER
USU-8A @ 3'	3'	7-22-19			1	TPH 8015 MEX
USU-8B @ 9'	3'	7-22-19			1	BTEX 8021 B
USU-10A @ 3'	3'	7-23-19			1	
USU-10B @ 9'	3'	7-23-19			1	

Total 200.7 / 6016 200.8 / 6026: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed: TCLP / SLP 6016: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 1631 / 245.1 / 7470 / 7471: Hg

Notice: Signature of this document and reassignment 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 \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Requested by (Signature)	Received by (Signature)	Date/Time	Requested by (Signature)	Date/Time
3	Buttany cop	7/24 4:02 PM	Buttany cop	7/24 4:02 PM
5				



632011

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Project Name:	1000152 FIED 14 TIE			Time Arrived:
Project Number:				
P.O. Number:				
Supplier Name:	Berkley Drift			
SAMPLE RECEIPT		Temp. Status:	Yes	No
Temperature (°C):	-1.3	Instrumented:	Yes	No
Received intact:	Yes	No		
Cooler Capacity Status:	Yes	No	N/A	
Sample Capacity Status:	Yes	No	N/A	
		Correction Factor:		-0.0
		Total Corrections:		
Number of Containers:		21		
FLORIDE SM 4500				
LP BENZENE				
LP RC RA 8				
RM				
INST FILTER				
H 8015 M EXT				
TEX 8021B				
Work Order Notes				
ALGROVES PM baird@tkm Geo.com bdean@tkm Geo.com NCAD@TKM 02-03-01 RT starts the day received by site lab, if received by 4:30pm				

[illegible]

Circle Method(s) and Metal(s) to be analyzed	TC/CP / SPLP 8010: 8RCRA	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U	Hg
Circle Method(s) and Metal(s) to be analyzed	TC/CP / SPLP 8010: 8RCRA	Sb	As	Ba	Be	Cd <td>Cr</td> <td>Co</td> <td>Cu</td> <td>Pb</td> <td>Mn</td> <td>Mo</td> <td>Ni</td> <td>Se</td> <td>Ag</td> <td>Ti</td> <td>U</td> <td>Hg</td>	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U	Hg

NOTES: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xerox, its affiliates and subcontractors. It signifies standard terms and conditions of service. Xerox 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 Xerox. A retention charge of \$72.00 will be applied to each project and a charge of \$5 for each sample submitted to Xerox but not analyzed. These terms will be enforced unless previously negotiated.

Requested by (Signature)	Received by (Signature)	Date/Time	Requested by (Signature)	Received by (Signature)	Date/Time

1	7/24/19	4:02	12419	10519
2	7/24/19	4:02	12419	10519
3	7/24/19	4:02	12419	10519

[illegible]



Inter-Office Shipment

IOS Number : **45389**

Date/Time: 08.01.2019 09:12 Created by: Jessica Kramer

Lab# From: **Midland** Delivery Priority:

Lab# To: **Houston** Air Bill No.: 775898621139

Please send report to: John Builes

Address: 1211 W. Florida Ave

E-Mail: john.builes@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
632071-001	S	FL-9 @ 13'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-002	S	FL-10 @ 13'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-003	S	FL-11 @ 13'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-004	S	FL-12 @ 4'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-005	S	FL-13 @ 13'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-006	S	FL-14 @ 4'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-007	S	FL-15 @ 13'	07.23.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.06.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-008	S	FL-16 @ 13'	07.23.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.06.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-009	S	WSW-7 @ 2'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-010	S	NSW-4A @ 3'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-011	S	NSW-4B @ 9'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-012	S	NSW-5A @ 3'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-013	S	NSW-5B @ 9'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-014	S	NSW-6A @ 3'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-015	S	NSW-6B @ 9'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-016	S	NSW-8A @ 3'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-017	S	NSW-8B @ 9'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-018	S	NSW-10A @ 3'	07.23.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.06.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-019	S	NSW-10B @ 9'	07.23.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.06.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-020	S	SSW-4A @ 3'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-021	S	SSW-4B @ 9'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-022	S	SSW-5A @ 3'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-023	S	SSW-5B @ 9'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-024	S	SSW-6 @ 9'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-025	S	SSW-7 @ 2'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	

Inter-Office Shipment

IOS Number : **45389**

Date/Time: 08.01.2019 09:12 Created by: Jessica Kramer
 Lab# From: **Midland** Delivery Priority:
 Lab# To: **Houston** Air Bill No.: 775898621139

Please send report to: John Builes
 Address: 1211 W. Florida Ave
 E-Mail: john.builes@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
632071-026	S	SSW-8 @ 9'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-027	S	SSW-9 @ 2'	07.22.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.05.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-028	S	SSW-10 @ 9'	07.23.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.06.2019 00:00	JHB	PHCC10C28 PHCC28C35	
632071-029	S	SSW-11 @ 2'	07.23.2019 00:00	SW8015MOD_NM	TPH By SW8015 Mod	08.02.2019	08.06.2019 00:00	JHB	PHCC10C28 PHCC28C35	

Inter Office Shipment or Sample Comments:

Relinquished By: Jessica Kramer
 Jessica Kramer
 Date Relinquished: 08.01.2019

Received By: Travis Simmons
 Travis Simmons
 Date Received: 08.02.2019 09:50
 Cooler Temperature: 1.7



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist



Sent To: Houston

IOS #: 45389

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Jessica Kramer

Date Sent: 08.01.2019 09.12 AM

Received By: Travis Simmons

Date Received: 08.02.2019 09.50 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1.7
#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?	Yes
#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:

Travis Simmons

Date: 08.02.2019



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: Tasman Geosciences, LLC

Date/ Time Received: 07/25/2019 11:36:00 AM

Work Order #: 632071

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)?	-1.3
#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: 07/25/2019

Checklist reviewed by:

John Builes

Date: 07/29/2019



Analytical Report 632284

for

Tasman Geosciences, LLC

Project Manager: Z Conder

Todd 15 N Tie In

08.08.2019

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)



08.08.2019

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

Reference: XENCO Report No(s): **632284**

Todd 15 N Tie In

Project Address:

Z 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) 632284. 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. 632284 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 632284****Tasman Geosciences, LLC, Hobbs, NM**

Todd 15 N Tie In

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SSW-12A @3'	S	07.25.2019 00:00	3 ft	632284-001
SSW-12B @9'	S	07.25.2019 00:00	9 ft	632284-002
WSW-12S @6'	S	07.25.2019 00:00	6 ft	632284-003
NSW-12A @3'	S	07.25.2019 00:00	3 ft	632284-004
NSW-12B @9'	S	07.25.2019 00:00	9 ft	632284-005
SSW-13 @6'	S	07.26.2019 00:00	6 ft	632284-006
NSW-13A @3'	S	07.26.2019 00:00	3 ft	632284-007
NSW-13B @9'	S	07.26.2019 00:00	9 ft	632284-008



CASE NARRATIVE

Client Name: *Tasman Geosciences, LLC*

Project Name: *Todd 15 N Tie In*

Project ID:

Work Order Number(s): 632284

Report Date: 08.08.2019

Date Received: 07.29.2019

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-3097431 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: 632284-008.



Certificate of Analytical Results

632284

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **SSW-12A @3'** Matrix: Soil Sample Depth: 3 ft
Lab Sample Id: 632284-001 Date Collected: 07.25.2019 00:00 Date Received: 07.29.2019 12:00
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: SPC % Moist: Tech: SPC
Seq Number: 3096995 Date Prep: 07.30.2019 10:30
Prep seq: 7683142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	2.96	5.05	0.867	mg/kg	07.30.2019 14:45	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ISU % Moist: Tech: ISU
Seq Number: 3097677 Date Prep: 08.02.2019 17:55
Subcontractor: SUB: T104704215-19-29 Prep seq: 7683426

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	08.05.2019 18:03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<10.0	50.0	10.0	mg/kg	08.05.2019 18:03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<10.0	50.0	10.0	mg/kg	08.05.2019 18:03	U	1
Total TPH	PHC635	<10.0		10.0	mg/kg	08.05.2019 18:03	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	95	70 - 135	%		
o-Terphenyl	114	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: ALG % Moist: Tech: ALG
Seq Number: 3097431 Date Prep: 07.31.2019 13:15
Prep seq: 7683197

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	08.02.2019 07:06	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	08.02.2019 07:06	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	08.02.2019 07:06	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	08.02.2019 07:06	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.02.2019 07:06	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.02.2019 07:06	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.02.2019 07:06	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	107	70 - 130	%		
4-Bromofluorobenzene	114	70 - 130	%		



Certificate of Analytical Results

632284

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: SSW-12B @9'	Matrix: Soil	Sample Depth: 9 ft
Lab Sample Id: 632284-002	Date Collected: 07.25.2019 00:00	Date Received: 07.29.2019 12:00
Analytical Method: Inorganic Anions by EPA 300/300.1		Prep Method: E300P
Analyst: SPC	% Moist:	Tech: SPC
Seq Number: 3096995	Date Prep: 07.30.2019 10:30	
	Prep seq: 7683142	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	3.76	5.04	0.865	mg/kg	07.30.2019 15:04	J	1

Analytical Method: TPH by SW8015 Mod	Prep Method: 1005
Analyst: ISU	Tech: ISU
Seq Number: 3097677	Date Prep: 08.02.2019 17:58
Subcontractor: SUB: T104704215-19-29	Prep seq: 7683426

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.96	49.8	9.96	mg/kg	08.05.2019 18:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.96	49.8	9.96	mg/kg	08.05.2019 18:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.96	49.8	9.96	mg/kg	08.05.2019 18:47	U	1
Total TPH	PHC635	<9.96		9.96	mg/kg	08.05.2019 18:47	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	95	70 - 135	%		
o-Terphenyl	114	70 - 135	%		

Analytical Method: BTEX by EPA 8021	Prep Method: 5030B
Analyst: ALG	Tech: ALG
Seq Number: 3097431	Date Prep: 07.31.2019 13:15
	Prep seq: 7683197

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000388	0.00202	0.000388	mg/kg	08.02.2019 07:27	U	1
Toluene	108-88-3	<0.000459	0.00202	0.000459	mg/kg	08.02.2019 07:27	U	1
Ethylbenzene	100-41-4	<0.000569	0.00202	0.000569	mg/kg	08.02.2019 07:27	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00403	0.00102	mg/kg	08.02.2019 07:27	U	1
o-Xylene	95-47-6	<0.000347	0.00202	0.000347	mg/kg	08.02.2019 07:27	U	1
Xylenes, Total	1330-20-7	<0.000347		0.000347	mg/kg	08.02.2019 07:27	U	
Total BTEX		<0.000347		0.000347	mg/kg	08.02.2019 07:27	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	106	70 - 130	%		
4-Bromofluorobenzene	117	70 - 130	%		



Certificate of Analytical Results

632284

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **WSW-12S @6'** Matrix: Soil Sample Depth: 6 ft
Lab Sample Id: 632284-003 Date Collected: 07.25.2019 00:00 Date Received: 07.29.2019 12:00
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: SPC % Moist: Tech: SPC
Seq Number: 3096995 Date Prep: 07.30.2019 10:30
Prep seq: 7683142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	1.45	5.04	0.865	mg/kg	07.30.2019 15:10	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ISU % Moist: Tech: ISU
Seq Number: 3097677 Date Prep: 08.02.2019 18:01
Subcontractor: SUB: T104704215-19-29 Prep seq: 7683426

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.97	49.9	9.97	mg/kg	08.05.2019 17:44	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.97	49.9	9.97	mg/kg	08.05.2019 17:44	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.97	49.9	9.97	mg/kg	08.05.2019 17:44	U	1
Total TPH	PHC635	<9.97		9.97	mg/kg	08.05.2019 17:44	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	82	70 - 135	%		
o-Terphenyl	88	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: ALG % Moist: Tech: ALG
Seq Number: 3097431 Date Prep: 07.31.2019 13:15
Prep seq: 7683197

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.02.2019 07:48	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.02.2019 07:48	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.02.2019 07:48	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.02.2019 07:48	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.02.2019 07:48	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.02.2019 07:48	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.02.2019 07:48	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	105	70 - 130	%		
4-Bromofluorobenzene	111	70 - 130	%		



Certificate of Analytical Results

632284

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **NSW-12A @3'** Matrix: Soil Sample Depth: 3 ft
Lab Sample Id: 632284-004 Date Collected: 07.25.2019 00:00 Date Received: 07.29.2019 12:00
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: SPC % Moist: Tech: SPC
Seq Number: 3096995 Date Prep: 07.30.2019 10:30
Prep seq: 7683142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	2.22	4.99	0.857	mg/kg	07.30.2019 15:17	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ISU % Moist: Tech: ISU
Seq Number: 3097677 Date Prep: 08.02.2019 18:04
Subcontractor: SUB: T104704215-19-29 Prep seq: 7683426

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.99	50.0	9.99	mg/kg	08.05.2019 18:03	U	1
Diesel Range Organics (DRO)	C10C28DRO	35.5	50.0	9.99	mg/kg	08.05.2019 18:03	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.99	50.0	9.99	mg/kg	08.05.2019 18:03	U	1
Total TPH	PHC635	35.5		9.99	mg/kg	08.05.2019 18:03	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	93	70 - 135	%		
o-Terphenyl	101	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: ALG % Moist: Tech: ALG
Seq Number: 3097431 Date Prep: 07.31.2019 13:15
Prep seq: 7683197

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000388	0.00202	0.000388	mg/kg	08.02.2019 08:09	U	1
Toluene	108-88-3	<0.000459	0.00202	0.000459	mg/kg	08.02.2019 08:09	U	1
Ethylbenzene	100-41-4	<0.000569	0.00202	0.000569	mg/kg	08.02.2019 08:09	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00403	0.00102	mg/kg	08.02.2019 08:09	U	1
o-Xylene	95-47-6	<0.000347	0.00202	0.000347	mg/kg	08.02.2019 08:09	U	1
Xylenes, Total	1330-20-7	<0.000347		0.000347	mg/kg	08.02.2019 08:09	U	
Total BTEX		<0.000347		0.000347	mg/kg	08.02.2019 08:09	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	108	70 - 130	%		
4-Bromofluorobenzene	121	70 - 130	%		



Certificate of Analytical Results

632284

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **NSW-12B @9'** Matrix: Soil Sample Depth: 9 ft
Lab Sample Id: 632284-005 Date Collected: 07.25.2019 00:00 Date Received: 07.29.2019 12:00
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: SPC % Moist: Tech: SPC
Seq Number: 3096995 Date Prep: 07.30.2019 10:30
Prep seq: 7683142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	10.7	5.02	0.862	mg/kg	07.30.2019 15:23		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ISU % Moist: Tech: ISU
Seq Number: 3097677 Date Prep: 08.02.2019 18:07
Subcontractor: SUB: T104704215-19-29 Prep seq: 7683426

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	08.05.2019 18:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	68.5	50.0	10.0	mg/kg	08.05.2019 18:47		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	12.7	50.0	10.0	mg/kg	08.05.2019 18:47	J	1
Total TPH	PHC635	81.2		10.0	mg/kg	08.05.2019 18:47		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	85	70 - 135	%		
o-Terphenyl	96	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: ALG % Moist: Tech: ALG
Seq Number: 3097431 Date Prep: 07.31.2019 13:15
Prep seq: 7683197

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	08.02.2019 08:30	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	08.02.2019 08:30	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	08.02.2019 08:30	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	08.02.2019 08:30	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	08.02.2019 08:30	U	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	08.02.2019 08:30	U	
Total BTEX		<0.000345		0.000345	mg/kg	08.02.2019 08:30	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	97	70 - 130	%		
4-Bromofluorobenzene	119	70 - 130	%		



Certificate of Analytical Results

632284

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **SSW-13 @6'** Matrix: Soil Sample Depth: 6 ft
Lab Sample Id: 632284-006 Date Collected: 07.26.2019 00:00 Date Received: 07.29.2019 12:00
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: SPC % Moist: Tech: SPC
Seq Number: 3096995 Date Prep: 07.30.2019 10:30
Prep seq: 7683142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	4.45	4.99	0.857	mg/kg	07.30.2019 15:42	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ISU % Moist: Tech: ISU
Seq Number: 3097677 Date Prep: 08.02.2019 18:10
Subcontractor: SUB: T104704215-19-29 Prep seq: 7683426

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.97	49.9	9.97	mg/kg	08.07.2019 17:58	U	1
Diesel Range Organics (DRO)	C10C28DRO	70.8	49.9	9.97	mg/kg	08.07.2019 17:58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	14.2	49.9	9.97	mg/kg	08.07.2019 17:58	J	1
Total TPH	PHC635	85.0		9.97	mg/kg	08.07.2019 17:58		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	98	70 - 135	%		
o-Terphenyl	103	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: ALG % Moist: Tech: ALG
Seq Number: 3097431 Date Prep: 07.31.2019 13:15
Prep seq: 7683197

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.04.2019 06:23	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.04.2019 06:23	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.04.2019 06:23	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.04.2019 06:23	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.04.2019 06:23	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.04.2019 06:23	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.04.2019 06:23	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	70 - 130	%		
4-Bromofluorobenzene	126	70 - 130	%		



Certificate of Analytical Results

632284

Tasman Geosciences, LLC, Hobbs, NM

Todd 15 N Tie In

Sample Id: NSW-13A @3'

Matrix: Soil

Sample Depth: 3 ft

Lab Sample Id: 632284-007

Date Collected: 07.26.2019 00:00

Date Received: 07.29.2019 12:00

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Analyst: SPC

% Moist:

Tech: SPC

Seq Number: 3096995

Date Prep: 07.30.2019 10:30

Prep seq: 7683142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	4.44	5.04	0.865	mg/kg	07.30.2019 15:48	J	1

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ISU

% Moist:

Tech: ISU

Seq Number: 3097677

Date Prep: 08.02.2019 18:13

Subcontractor: SUB: T104704215-19-29

Prep seq: 7683426

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.96	49.8	9.96	mg/kg	08.07.2019 18:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.96	49.8	9.96	mg/kg	08.07.2019 18:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.96	49.8	9.96	mg/kg	08.07.2019 18:17	U	1
Total TPH	PHC635	<9.96		9.96	mg/kg	08.07.2019 18:17	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	96	70 - 135	%		
o-Terphenyl	102	70 - 135	%		

Analytical Method: BTEX by EPA 8021

Prep Method: 5030B

Analyst: ALG

% Moist:

Tech: ALG

Seq Number: 3097431

Date Prep: 07.31.2019 13:15

Prep seq: 7683197

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.02.2019 09:10	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.02.2019 09:10	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.02.2019 09:10	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.02.2019 09:10	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.02.2019 09:10	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.02.2019 09:10	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.02.2019 09:10	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	109	70 - 130	%		
4-Bromofluorobenzene	116	70 - 130	%		



Certificate of Analytical Results

632284

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **NSW-13B @9'** Matrix: Soil Sample Depth: 9 ft
Lab Sample Id: 632284-008 Date Collected: 07.26.2019 00:00 Date Received: 07.29.2019 12:00
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: SPC % Moist: Tech: SPC
Seq Number: 3096995 Date Prep: 07.30.2019 10:30
Prep seq: 7683142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	7.42	5.01	0.860	mg/kg	07.30.2019 15:55		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ISU % Moist: Tech: ISU
Seq Number: 3097677 Date Prep: 08.02.2019 18:16
Subcontractor: SUB: T104704215-19-29 Prep seq: 7683426

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.96	49.8	9.96	mg/kg	08.07.2019 18:36	U	1
Diesel Range Organics (DRO)	C10C28DRO	82.1	49.8	9.96	mg/kg	08.07.2019 18:36		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	16.2	49.8	9.96	mg/kg	08.07.2019 18:36	J	1
Total TPH	PHC635	98.3		9.96	mg/kg	08.07.2019 18:36		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	86	70 - 135	%		
o-Terphenyl	95	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: ALG % Moist: Tech: ALG
Seq Number: 3097431 Date Prep: 07.31.2019 13:15
Prep seq: 7683197

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	08.04.2019 06:44	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	08.04.2019 06:44	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	08.04.2019 06:44	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	08.04.2019 06:44	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.04.2019 06:44	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.04.2019 06:44	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.04.2019 06:44	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	98	70 - 130	%		
4-Bromofluorobenzene	135	70 - 130	%		**



Certificate of Analytical Results

632284

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **7683142-1-BLK** Matrix: Solid Sample Depth:
Lab Sample Id: 7683142-1-BLK Date Collected: Date Received:
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: SPC % Moist: Tech: SPC
Seq Number: 3096995 Date Prep: 07.30.2019 10:30
Prep seq: 7683142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	07.30.2019 14:26	U	1

Sample Id: **7683197-1-BLK** Matrix: Solid Sample Depth:
Lab Sample Id: 7683197-1-BLK Date Collected: Date Received:
Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: ALG % Moist: Tech: ALG
Seq Number: 3097431 Date Prep: 07.31.2019 13:15
Prep seq: 7683197

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.02.2019 12:41	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.02.2019 12:41	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.02.2019 12:41	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.02.2019 12:41	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.02.2019 12:41	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.02.2019 12:41	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.02.2019 12:41	U	

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



Certificate of Analytical Results

632284

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **7683426-1-BLK** Matrix: Solid Sample Depth:
 Lab Sample Id: 7683426-1-BLK Date Collected: Date Received:
 Analytical Method: TPH by SW8015 Mod Prep Method: 1005
 Analyst: ISU % Moist: Tech: ISU
 Seq Number: 3097677 Date Prep: 08.02.2019 17:10
 Subcontractor: SUB: T104704215-19-29 Prep seq: 7683426

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	08.05.2019 09:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<10.0	50.0	10.0	mg/kg	08.05.2019 09:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<10.0	50.0	10.0	mg/kg	08.05.2019 09:47	U	1
Total TPH	PHC635	<10.0		10.0	mg/kg	08.05.2019 09:47	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	95	70 - 135	%		
o-Terphenyl	105	70 - 135	%		



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: Todd 15 N Tie In

Work Orders : 632284

Project ID:

Lab Batch #: 3097431

Sample: 7683197-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.02.2019 10:36

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	0.0302	0.0300	101	70-130	

Lab Batch #: 3097431

Sample: 7683197-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.02.2019 10:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0309	0.0300	103	70-130	
4-Bromofluorobenzene	0.0353	0.0300	118	70-130	

Lab Batch #: 3097431

Sample: 632071-018 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.02.2019 11:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0314	0.0300	105	70-130	
4-Bromofluorobenzene	0.0370	0.0300	123	70-130	

Lab Batch #: 3097431

Sample: 632071-018 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.02.2019 11:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0317	0.0300	106	70-130	
4-Bromofluorobenzene	0.0386	0.0300	129	70-130	

Lab Batch #: 3097431

Sample: 7683197-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.02.2019 12:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0307	0.0300	102	70-130	
4-Bromofluorobenzene	0.0328	0.0300	109	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: Todd 15 N Tie In

Work Orders : 632284

Project ID:

Lab Batch #: 3097677

Sample: 7683426-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.05.2019 09:47

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.5	100	95	70-135	
o-Terphenyl	52.6	50.0	105	70-135	

Lab Batch #: 3097677

Sample: 7683426-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.06.2019 10:40

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	59.8	50.0	120	70-135	

Lab Batch #: 3097677

Sample: 7683426-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.06.2019 17:25

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	100	117	70-135	
o-Terphenyl	62.1	50.0	124	70-135	

Lab Batch #: 3097677

Sample: 632071-021 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.06.2019 17:44

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.6	116	70-135	
o-Terphenyl	62.0	49.8	124	70-135	

Lab Batch #: 3097677

Sample: 632071-021 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.06.2019 18:04

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	61.3	50.0	123	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: Todd 15 N Tie In

Work Order #: 632284

Analyst: ALG

Lab Batch ID: 3097431

Units: mg/kg

Date Prepared: 07.31.2019

Sample: 7683197-1-BKS

Batch #: 1

Project ID:

Date Analyzed: 08.02.2019

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	0.0940	94	0.100	0.104	104	10	70-130	35	
Toluene	<0.000456	0.100	0.0909	91	0.100	0.0994	99	9	70-130	35	
Ethylbenzene	<0.000565	0.100	0.101	101	0.100	0.112	112	10	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.203	102	0.200	0.226	113	11	70-130	35	
o-Xylene	<0.000344	0.100	0.0987	99	0.100	0.110	110	11	70-130	35	

Analyst: SPC

Date Prepared: 07.30.2019

Date Analyzed: 07.30.2019

Lab Batch ID: 3096995

Sample: 7683142-1-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	264	106	250	265	106	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: Todd 15 N Tie In

Work Order #: 632284

Analyst: ISU

Date Prepared: 08.02.2019

Project ID:

Date Analyzed: 08.06.2019

Lab Batch ID: 3097677

Sample: 7683426-1-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)	<10.0	1000	1140	114	1000	916	92	22	70-135	35	
Diesel Range Organics (DRO)	<10.0	1000	1240	124	1000	1010	101	20	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 / MSD Recoveries

Project Name: Todd 15 N Tie In

Work Order #: 632284

Lab Batch ID: 3097431

Date Analyzed: 08.02.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 632071-018 S

Batch #: 1 Matrix: Soil

Date Prepared: 07.31.2019

Analyst: ALG

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	0.0879	88	0.0992	0.0880	89	0	70-130	35	
Toluene	<0.000455	0.0998	0.0809	81	0.0992	0.0813	82	0	70-130	35	
Ethylbenzene	<0.000564	0.0998	0.0791	79	0.0992	0.0812	82	3	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.169	85	0.198	0.177	89	5	70-130	35	
o-Xylene	<0.000344	0.0998	0.0873	87	0.0992	0.0888	90	2	70-130	35	

Lab Batch ID: 3096995

QC- Sample ID: 632284-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07.30.2019

Date Prepared: 07.30.2019

Analyst: SPC

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	2.96	253	270	106	253	271	106	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: Todd 15 N Tie In

Work Order #: 632284

Lab Batch ID: 3096995

Date Analyzed: 07.30.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 632285-003 S

Batch #: 1 Matrix: Soil

Date Prepared: 07.30.2019

Analyst: SPC

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	3.28	248	277	110	248	277	110	0	90-110	20	

Lab Batch ID: 3097677

QC- Sample ID: 632071-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08.06.2019

Date Prepared: 08.02.2019

Analyst: ISU

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)	<9.96	996	1130	113	1000	1130	113	0	70-135	35	
Diesel Range Organics (DRO)	<9.96	996	1240	124	1000	1230	123	1	70-135	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.

Inter-Office Shipment

IOS Number : **45390**

Date/Time: 08.01.2019 09:13 Created by: Jessica Kramer
 Lab# From: **Midland** Delivery Priority:
 Lab# To: **Houston** Air Bill No.: 775898621139

Please send report to: John Builes
 Address: 1211 W. Florida Ave
 E-Mail: john.builes@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
632284-001	S	SSW-12A @3'	07.25.2019 00:00	SW8015MOD_NM	TPH by SW8015 Mod	08.02.2019	08.08.2019	JHB	PHCC10C28 PHCC28C3E	
632284-002	S	SSW-12B @9'	07.25.2019 00:00	SW8015MOD_NM	TPH by SW8015 Mod	08.02.2019	08.08.2019	JHB	PHCC10C28 PHCC28C3E	
632284-003	S	WSW-12S @6'	07.25.2019 00:00	SW8015MOD_NM	TPH by SW8015 Mod	08.02.2019	08.08.2019	JHB	PHCC10C28 PHCC28C3E	
632284-004	S	NSW-12A @3'	07.25.2019 00:00	SW8015MOD_NM	TPH by SW8015 Mod	08.02.2019	08.08.2019	JHB	PHCC10C28 PHCC28C3E	
632284-005	S	NSW-12B @9'	07.25.2019 00:00	SW8015MOD_NM	TPH by SW8015 Mod	08.02.2019	08.08.2019	JHB	PHCC10C28 PHCC28C3E	
632284-006	S	SSW-13 @6'	07.26.2019 00:00	SW8015MOD_NM	TPH by SW8015 Mod	08.02.2019	08.09.2019	JHB	PHCC10C28 PHCC28C3E	
632284-007	S	NSW-13A @3'	07.26.2019 00:00	SW8015MOD_NM	TPH by SW8015 Mod	08.02.2019	08.09.2019	JHB	PHCC10C28 PHCC28C3E	
632284-008	S	NSW-13B @9'	07.26.2019 00:00	SW8015MOD_NM	TPH by SW8015 Mod	08.02.2019	08.09.2019	JHB	PHCC10C28 PHCC28C3E	

Inter Office Shipment or Sample Comments:

Relinquished By: Jessica Kramer
 Jessica Kramer
 Date Relinquished: 08.01.2019

Received By: Travis Simmons
 Travis Simmons
 Date Received: 08.02.2019 09:50
 Cooler Temperature: 1.7



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist



Sent To: Houston

IOS #: 45390

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Jessica Kramer

Date Sent: 08.01.2019 09.13 AM

Received By: Travis Simmons

Date Received: 08.02.2019 09.50 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1.7
#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?	Yes
#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:

Travis Simmons

Date: 08.02.2019



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: Tasman Geosciences, LLC

Date/ Time Received: 07/29/2019 12:00:00 PM

Work Order #: 632284

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)?	0
#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?	Yes
#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)?	No
#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:

Katie Lowe

Date: 07/29/2019

Checklist reviewed by:

John Builes

Date: 07/31/2019



Analytical Report 632285

for

Tasman Geosciences, LLC

Project Manager: Z Conder

Todd 15 N Tie In

08.12.2019

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)



08.12.2019

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

Reference: XENCO Report No(s): **632285**

Todd 15 N Tie In

Project Address:

Z 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) 632285. 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. 632285 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 632285****Tasman Geosciences, LLC, Hobbs, NM**

Todd 15 N Tie In

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL-17S @13'	S	07.25.2019 00:00	13 ft	632285-001
FL-17N @13'	S	07.25.2019 00:00	13 ft	632285-002
FL-18S @13'	S	07.26.2019 00:00	13 ft	632285-003
FL-18N @13'	S	07.26.2019 00:00	13 ft	632285-004



CASE NARRATIVE

Client Name: Tasman Geosciences, LLC

Project Name: Todd 15 N Tie In

Project ID:

Work Order Number(s): 632285

Report Date: 08.12.2019

Date Received: 07.29.2019

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-3097835 BTEX by EPA 8021

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

Lab Sample ID 632285-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Ethylbenzene, Toluene 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: 632285-001, -002, -003, -004.

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

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

Samples affected are: 632285-001 S, 632285-001 SD.



Certificate of Analytical Results

632285

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **FL-17S @13'** Matrix: Soil Sample Depth: 13 ft
Lab Sample Id: 632285-001 Date Collected: 07.25.2019 00:00 Date Received: 07.29.2019 12:00
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: SPC % Moist: Tech: SPC
Seq Number: 3096995 Date Prep: 07.30.2019 10:30
Prep seq: 7683142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	2.51	5.03	0.864	mg/kg	07.30.2019 16:01	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ISU % Moist: Tech: ISU
Seq Number: 3097677 Date Prep: 08.02.2019 18:19
Subcontractor: SUB: T104704215-19-29 Prep seq: 7683426

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.98	49.9	9.98	mg/kg	08.05.2019 20:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.98	49.9	9.98	mg/kg	08.05.2019 20:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.98	49.9	9.98	mg/kg	08.05.2019 20:26	U	1
Total TPH	PHC635	<9.98		9.98	mg/kg	08.05.2019 20:26	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	96	70 - 135	%		
o-Terphenyl	115	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: ALG % Moist: Tech: ALG
Seq Number: 3097835 Date Prep: 08.02.2019 09:30
Prep seq: 7683376

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.07.2019 06:43	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.07.2019 06:43	UX	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.07.2019 06:43	UX	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.07.2019 06:43	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.07.2019 06:43	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.07.2019 06:43	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.07.2019 06:43	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	128	70 - 130	%		



Certificate of Analytical Results

632285

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **FL-17N @13'** Matrix: Soil Sample Depth: 13 ft
Lab Sample Id: 632285-002 Date Collected: 07.25.2019 00:00 Date Received: 07.29.2019 12:00
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: SPC % Moist: Tech: SPC
Seq Number: 3096995 Date Prep: 07.30.2019 10:30
Prep seq: 7683142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	3.50	4.99	0.857	mg/kg	07.30.2019 16:07	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ISU % Moist: Tech: ISU
Seq Number: 3097677 Date Prep: 08.02.2019 18:22
Subcontractor: SUB: T104704215-19-29 Prep seq: 7683426

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	26.3	49.9	9.98	mg/kg	08.05.2019 20:45	J	1
Diesel Range Organics (DRO)	C10C28DRO	638	49.9	9.98	mg/kg	08.05.2019 20:45		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	94.8	49.9	9.98	mg/kg	08.05.2019 20:45		1
Total TPH	PHC635	759		9.98	mg/kg	08.05.2019 20:45		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	101	70 - 135	%		
o-Terphenyl	98	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: ALG % Moist: Tech: ALG
Seq Number: 3097835 Date Prep: 08.02.2019 09:30
Prep seq: 7683376

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.08.2019 05:59	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.08.2019 05:59	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.08.2019 05:59	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.08.2019 05:59	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.08.2019 05:59	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.08.2019 05:59	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.08.2019 05:59	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	91	70 - 130	%		
4-Bromofluorobenzene	129	70 - 130	%		



Certificate of Analytical Results

632285

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **FL-18S @13'** Matrix: Soil Sample Depth: 13 ft
Lab Sample Id: 632285-003 Date Collected: 07.26.2019 00:00 Date Received: 07.29.2019 12:00
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: SPC % Moist: Tech: SPC
Seq Number: 3096995 Date Prep: 07.30.2019 10:30
Prep seq: 7683142

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	3.28	4.96	0.852	mg/kg	07.30.2019 16:14	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ISU % Moist: Tech: ISU
Seq Number: 3097768 Date Prep: 08.05.2019 17:39
Subcontractor: SUB: T104704215-19-29 Prep seq: 7683529

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.99	50.0	9.99	mg/kg	08.06.2019 04:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.9	50.0	9.99	mg/kg	08.06.2019 04:53	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.99	50.0	9.99	mg/kg	08.06.2019 04:53	U	1
Total TPH	PHC635	15.9		9.99	mg/kg	08.06.2019 04:53	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	97	70 - 135	%		
o-Terphenyl	118	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: ALG % Moist: Tech: ALG
Seq Number: 3097835 Date Prep: 08.02.2019 09:30
Prep seq: 7683376

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	08.07.2019 07:23	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	08.07.2019 07:23	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	08.07.2019 07:23	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	08.07.2019 07:23	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	08.07.2019 07:23	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	08.07.2019 07:23	U	
Total BTEX		<0.000342		0.000342	mg/kg	08.07.2019 07:23	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	91	70 - 130	%		
4-Bromofluorobenzene	127	70 - 130	%		



Certificate of Analytical Results

632285

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: FL-18N @13'	Matrix: Soil	Sample Depth: 13 ft
Lab Sample Id: 632285-004	Date Collected: 07.26.2019 00:00	Date Received: 07.29.2019 12:00
Analytical Method: Inorganic Anions by EPA 300/300.1		Prep Method: E300P
Analyst: SPC	% Moist:	Tech: SPC
Seq Number: 3096995	Date Prep: 07.30.2019 10:30	
	Prep seq: 7683142	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	8.98	4.99	0.857	mg/kg	07.30.2019 16:33		1

Analytical Method: TPH by SW8015 Mod		Prep Method: 1005
Analyst: ISU	% Moist:	Tech: ISU
Seq Number: 3097768	Date Prep: 08.05.2019 17:42	
Subcontractor: SUB: T104704215-19-29	Prep seq: 7683529	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.96	49.8	9.96	mg/kg	08.06.2019 05:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	14.8	49.8	9.96	mg/kg	08.06.2019 05:12	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.96	49.8	9.96	mg/kg	08.06.2019 05:12	U	1
Total TPH	PHC635	14.8		9.96	mg/kg	08.06.2019 05:12	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	98	70 - 135	%		
o-Terphenyl	120	70 - 135	%		

Analytical Method: BTEX by EPA 8021		Prep Method: 5030B
Analyst: ALG	% Moist:	Tech: ALG
Seq Number: 3097835	Date Prep: 08.02.2019 09:30	
	Prep seq: 7683376	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	08.07.2019 07:44	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	08.07.2019 07:44	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	08.07.2019 07:44	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	08.07.2019 07:44	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	08.07.2019 07:44	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	08.07.2019 07:44	U	
Total BTEX		<0.000346		0.000346	mg/kg	08.07.2019 07:44	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	95	70 - 130	%		
4-Bromofluorobenzene	126	70 - 130	%		



Certificate of Analytical Results

632285

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: 7683142-1-BLK	Matrix: Solid	Sample Depth:
Lab Sample Id: 7683142-1-BLK	Date Collected:	Date Received:
Analytical Method: Inorganic Anions by EPA 300/300.1		Prep Method: E300P
Analyst: SPC	% Moist:	Tech: SPC
Seq Number: 3096995	Date Prep: 07.30.2019 10:30	
	Prep seq: 7683142	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	07.30.2019 14:26	U	1

Sample Id: 7683376-1-BLK	Matrix: Solid	Sample Depth:
Lab Sample Id: 7683376-1-BLK	Date Collected:	Date Received:
Analytical Method: BTEX by EPA 8021		Prep Method: 5030B
Analyst: ALG	% Moist:	Tech: ALG
Seq Number: 3097835	Date Prep: 08.02.2019 09:30	
	Prep seq: 7683376	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.07.2019 06:23	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.07.2019 06:23	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.07.2019 06:23	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.07.2019 06:23	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.07.2019 06:23	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.07.2019 06:23	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.07.2019 06:23	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	112	70 - 130	%		



Certificate of Analytical Results

632285

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: 7683426-1-BLK	Matrix: Solid	Sample Depth:
Lab Sample Id: 7683426-1-BLK	Date Collected:	Date Received:
Analytical Method: TPH by SW8015 Mod		Prep Method: 1005
Analyst: ISU	% Moist:	Tech: ISU
Seq Number: 3097677	Date Prep: 08.02.2019 17:10	
Subcontractor: SUB: T104704215-19-29	Prep seq: 7683426	

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	08.05.2019 09:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<10.0	50.0	10.0	mg/kg	08.05.2019 09:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<10.0	50.0	10.0	mg/kg	08.05.2019 09:47	U	1
Total TPH	PHC635	<10.0		10.0	mg/kg	08.05.2019 09:47	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	95	70 - 135	%		
o-Terphenyl	105	70 - 135	%		

Sample Id: 7683529-1-BLK	Matrix: Solid	Sample Depth:
Lab Sample Id: 7683529-1-BLK	Date Collected:	Date Received:
Analytical Method: TPH by SW8015 Mod		Prep Method: 1005
Analyst: ISU	% Moist:	Tech: ISU
Seq Number: 3097768	Date Prep: 08.05.2019 17:30	
Subcontractor: SUB: T104704215-19-29	Prep seq: 7683529	

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	08.06.2019 03:57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<10.0	50.0	10.0	mg/kg	08.06.2019 03:57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<10.0	50.0	10.0	mg/kg	08.06.2019 03:57	U	1
Total TPH	PHC635	<10.0		10.0	mg/kg	08.06.2019 03:57	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	101	70 - 135	%		
o-Terphenyl	121	70 - 135	%		



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: Todd 15 N Tie In

Work Orders : 632285

Project ID:

Lab Batch #: 3097835

Sample: 7683376-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.07.2019 04:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0285	0.0300	95	70-130	
4-Bromofluorobenzene	0.0369	0.0300	123	70-130	

Lab Batch #: 3097835

Sample: 7683376-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.07.2019 05:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0281	0.0300	94	70-130	
4-Bromofluorobenzene	0.0385	0.0300	128	70-130	

Lab Batch #: 3097835

Sample: 632285-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.07.2019 05:23

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	0.0408	0.0300	136	70-130	**

Lab Batch #: 3097835

Sample: 632285-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.07.2019 05:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0282	0.0300	94	70-130	
4-Bromofluorobenzene	0.0396	0.0300	132	70-130	**

Lab Batch #: 3097835

Sample: 7683376-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.07.2019 06:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0280	0.0300	93	70-130	
4-Bromofluorobenzene	0.0336	0.0300	112	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: Todd 15 N Tie In

Work Orders : 632285

Project ID:

Lab Batch #: 3097677

Sample: 7683426-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.05.2019 09:47

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.5	100	95	70-135	
o-Terphenyl	52.6	50.0	105	70-135	

Lab Batch #: 3097677

Sample: 7683426-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.06.2019 10:40

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	59.8	50.0	120	70-135	

Lab Batch #: 3097677

Sample: 7683426-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.06.2019 17:25

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	100	117	70-135	
o-Terphenyl	62.1	50.0	124	70-135	

Lab Batch #: 3097677

Sample: 632071-021 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.06.2019 17:44

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.6	116	70-135	
o-Terphenyl	62.0	49.8	124	70-135	

Lab Batch #: 3097677

Sample: 632071-021 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.06.2019 18:04

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	61.3	50.0	123	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: Todd 15 N Tie In

Work Orders : 632285

Project ID:

Lab Batch #: 3097768

Sample: 7683529-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.06.2019 03:57

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	60.3	50.0	121	70-135	

Lab Batch #: 3097768

Sample: 7683529-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.06.2019 04:15

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	62.6	50.0	125	70-135	

Lab Batch #: 3097768

Sample: 7683529-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.06.2019 04:34

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	56.0	50.0	112	70-135	

Lab Batch #: 3097768

Sample: 632285-004 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.06.2019 05:12

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.8	118	70-135	
o-Terphenyl	59.1	49.9	118	70-135	

Lab Batch #: 3097768

Sample: 632285-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.06.2019 05:49

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.6	119	70-135	
o-Terphenyl	62.5	49.8	126	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: Todd 15 N Tie In

Work Order #: 632285

Analyst: ALG

Lab Batch ID: 3097835

Units: mg/kg

Date Prepared: 08.02.2019

Sample: 7683376-1-BKS

Batch #: 1

Project ID:

Date Analyzed: 08.07.2019

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	0.105	105	0.100	0.102	102	3	70-130	35	
Toluene	<0.000456	0.100	0.101	101	0.100	0.0990	99	2	70-130	35	
Ethylbenzene	<0.000565	0.100	0.113	113	0.100	0.111	111	2	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.227	114	0.200	0.224	112	1	70-130	35	
o-Xylene	<0.000344	0.100	0.114	114	0.100	0.109	109	4	70-130	35	

Analyst: SPC

Lab Batch ID: 3096995

Units: mg/kg

Date Prepared: 07.30.2019

Sample: 7683142-1-BKS

Batch #: 1

Date Analyzed: 07.30.2019

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	264	106	250	265	106	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: Todd 15 N Tie In

Work Order #: 632285

Analyst: ISU

Date Prepared: 08.02.2019

Project ID:

Date Analyzed: 08.06.2019

Lab Batch ID: 3097677

Sample: 7683426-1-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)	<10.0	1000	1140	114	1000	916	92	22	70-135	35	
Diesel Range Organics (DRO)	<10.0	1000	1240	124	1000	1010	101	20	70-135	35	

Analyst: ISU

Date Prepared: 08.05.2019

Date Analyzed: 08.06.2019

Lab Batch ID: 3097768

Sample: 7683529-1-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)	<10.0	1000	1120	112	1000	1080	108	4	70-135	35	
Diesel Range Organics (DRO)	<10.0	1000	1200	120	1000	1160	116	3	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 / MSD Recoveries

Project Name: Todd 15 N Tie In

Work Order #: 632285

Lab Batch ID: 3097835

Date Analyzed: 08.07.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 632285-001 S

Date Prepared: 08.02.2019

Batch #: 1 Matrix: Soil

Analyst: ALG

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	0.0800	80	0.0992	0.0794	80	1	70-130	35	
Toluene	<0.000453	0.0994	0.0656	66	0.0992	0.0677	68	3	70-130	35	X
Ethylbenzene	<0.000561	0.0994	0.0508	51	0.0992	0.0522	53	3	70-130	35	X
m_p-Xylenes	<0.00101	0.199	0.144	72	0.198	0.143	72	1	70-130	35	
o-Xylene	<0.000342	0.0994	0.0868	87	0.0992	0.0842	85	3	70-130	35	

Lab Batch ID: 3096995

Date Analyzed: 07.30.2019

Reporting Units: mg/kg

QC- Sample ID: 632284-001 S

Date Prepared: 07.30.2019

Batch #: 1 Matrix: Soil

Analyst: SPC

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	2.96	253	270	106	253	271	106	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: Todd 15 N Tie In

Work Order #: 632285

Lab Batch ID: 3096995

Date Analyzed: 07.30.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 632285-003 S

Batch #: 1 Matrix: Soil

Date Prepared: 07.30.2019

Analyst: SPC

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	3.28	248	277	110	248	277	110	0	90-110	20	

Lab Batch ID: 3097677

QC- Sample ID: 632071-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08.06.2019

Date Prepared: 08.02.2019

Analyst: ISU

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)	<9.96	996	1130	113	1000	1130	113	0	70-135	35	
Diesel Range Organics (DRO)	<9.96	996	1240	124	1000	1230	123	1	70-135	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: Todd 15 N Tie In

Work Order # : 632285

Lab Batch ID: 3097768

Date Analyzed: 08.06.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 632285-004 S

Batch #: 1 Matrix: Soil

Date Prepared: 08.05.2019

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)	<9.98	998	1260	126	996	1120	112	12	70-135	35	
Diesel Range Organics (DRO)	14.8	998	1230	122	996	1230	122	0	70-135	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.



Chain of Custody

Houston, TX (281) 240-4200 Dallas, TX (214) 802-0300 San Antonio, TX (210) 508-3334
 Midland, TX (432) 704-5440 El Paso, TX (915) 865-3443 Lubbock, TX (806) 794-1296
 Hobbs, NM (575) 382-7550 Phoenix, AZ (602) 355-0800 Atlanta, GA (770) 449-8900 Tampa, FL (813) 620-2000

Work Order No: 432285

www.xenco.com Page of

Program: UST/PT ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund

State of Project:

Reporting Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐

Deliverables: EDO ☐ ADAPT ☐ Other:

Work Order Notes

ALGROUSE PAI
 b975600 TRSM
 GEO.COM
 bdeumise@TSM
 GEO.COM
 CORRECTION
 M starts the day received by the
 lab, if received by 4:30pm

Sample Comments

Project Name: 2401 GANER
 Project Number: 15000000000000000000
 Project Address: 2620 W. MARLASH BLVD
 City, State ZIP: HOUSTON, TX 77041-5943
 Project Name: 2401 GANER
 Project Number: 15000000000000000000
 Project Address: 2620 W. MARLASH BLVD
 City, State ZIP: HOUSTON, TX 77041-5943

Temperature (°C): 0.0
 Relative Humidity: 0.0
 Sample Quantity: 0.0
 Sample Custody Seal: Yes No
 Sample Identification: 0.0
 Sample Date: 0.0
 Sample Time: 0.0
 Sample Location: 0.0
 Sample Depth: 0.0
 Sample Container: 0.0
 Sample Volume: 0.0
 Sample Weight: 0.0
 Sample Color: 0.0
 Sample Odor: 0.0
 Sample Taste: 0.0
 Sample Touch: 0.0
 Sample Sight: 0.0
 Sample Sound: 0.0
 Sample Smell: 0.0
 Sample Feel: 0.0
 Sample Taste: 0.0
 Sample Touch: 0.0
 Sample Sight: 0.0
 Sample Sound: 0.0
 Sample Smell: 0.0
 Sample Feel: 0.0

Sample Identification: 0.0
 Sample Date: 0.0
 Sample Time: 0.0
 Sample Location: 0.0
 Sample Depth: 0.0
 Sample Container: 0.0
 Sample Volume: 0.0
 Sample Weight: 0.0
 Sample Color: 0.0
 Sample Odor: 0.0
 Sample Taste: 0.0
 Sample Touch: 0.0
 Sample Sight: 0.0
 Sample Sound: 0.0
 Sample Smell: 0.0
 Sample Feel: 0.0

Sample Identification: 0.0
 Sample Date: 0.0
 Sample Time: 0.0
 Sample Location: 0.0
 Sample Depth: 0.0
 Sample Container: 0.0
 Sample Volume: 0.0
 Sample Weight: 0.0
 Sample Color: 0.0
 Sample Odor: 0.0
 Sample Taste: 0.0
 Sample Touch: 0.0
 Sample Sight: 0.0
 Sample Sound: 0.0
 Sample Smell: 0.0
 Sample Feel: 0.0

Sample Identification: 0.0
 Sample Date: 0.0
 Sample Time: 0.0
 Sample Location: 0.0
 Sample Depth: 0.0
 Sample Container: 0.0
 Sample Volume: 0.0
 Sample Weight: 0.0
 Sample Color: 0.0
 Sample Odor: 0.0
 Sample Taste: 0.0
 Sample Touch: 0.0
 Sample Sight: 0.0
 Sample Sound: 0.0
 Sample Smell: 0.0
 Sample Feel: 0.0

Sample Identification: 0.0
 Sample Date: 0.0
 Sample Time: 0.0
 Sample Location: 0.0
 Sample Depth: 0.0
 Sample Container: 0.0
 Sample Volume: 0.0
 Sample Weight: 0.0
 Sample Color: 0.0
 Sample Odor: 0.0
 Sample Taste: 0.0
 Sample Touch: 0.0
 Sample Sight: 0.0
 Sample Sound: 0.0
 Sample Smell: 0.0
 Sample Feel: 0.0

Element	8RCRA	13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO2	Na	Sr	Ti	Sn	U	V	Zn
EL-17N @ 13'	5	7-25-19																													
EL-180 @ 13'	5	7-25-19																													
EL-181 @ 13'	5	7-26-19																													
EL-182 @ 13'	5	7-26-19																													
EL-183 @ 13'	5	7-26-19																													
EL-184 @ 13'	5	7-26-19																													
EL-185 @ 13'	5	7-26-19																													
EL-186 @ 13'	5	7-26-19																													
EL-187 @ 13'	5	7-26-19																													
EL-188 @ 13'	5	7-26-19																													
EL-189 @ 13'	5	7-26-19																													
EL-190 @ 13'	5	7-26-19																													
EL-191 @ 13'	5	7-26-19																													
EL-192 @ 13'	5	7-26-19																													
EL-193 @ 13'	5	7-26-19																													
EL-194 @ 13'	5	7-26-19																													
EL-195 @ 13'	5	7-26-19																													
EL-196 @ 13'	5	7-26-19																													
EL-197 @ 13'	5	7-26-19																													
EL-198 @ 13'	5	7-26-19																													
EL-199 @ 13'	5	7-26-19																													
EL-200 @ 13'	5	7-26-19																													

Inter-Office Shipment

IOS Number : **45391**

Date/Time: 08.01.2019 09:14 Created by: Jessica Kramer
 Lab# From: **Midland** Delivery Priority:
 Lab# To: **Houston** Air Bill No.: 775898621139

Please send report to: John Builes
 Address: 1211 W. Florida Ave
 E-Mail: john.builes@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
632285-001	S	FL-17S @13'	07.25.2019 00:00	SW8015MOD_NM	TPH by SW8015 Mod	08.02.2019	08.08.2019	JHB	PHCC10C28 PHCC28C35	
632285-002	S	FL-17N @13'	07.25.2019 00:00	SW8015MOD_NM	TPH by SW8015 Mod	08.02.2019	08.08.2019	JHB	PHCC10C28 PHCC28C35	
632285-003	S	FL-18S @13'	07.26.2019 00:00	SW8015MOD_NM	TPH by SW8015 Mod	08.02.2019	08.09.2019	JHB	PHCC10C28 PHCC28C35	
632285-004	S	FL-18N @13'	07.26.2019 00:00	SW8015MOD_NM	TPH by SW8015 Mod	08.02.2019	08.09.2019	JHB	PHCC10C28 PHCC28C35	

Inter Office Shipment or Sample Comments:

Relinquished By: Jessica Kramer
 Jessica Kramer
 Date Relinquished: 08.01.2019

Received By: Travis Simmons
 Travis Simmons
 Date Received: 08.02.2019 09:50
 Cooler Temperature: 1.7



XENCO Laboratories

Inter Office Report- Sample Receipt Checklist



Sent To: Houston

IOS #: 45391

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Jessica Kramer

Date Sent: 08.01.2019 09.14 AM

Received By: Travis Simmons

Date Received: 08.02.2019 09.50 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1.7
#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?	Yes
#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:

Travis Simmons

Date: 08.02.2019



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: Tasman Geosciences, LLC

Date/ Time Received: 07/29/2019 12:00:00 PM

Work Order #: 632285

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)?	0
#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)?	No
#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:

Katie Lowe

Date: 07/29/2019

Checklist reviewed by:

John Builes

Date: 07/31/2019



Analytical Report 632951

for

Tasman Geosciences, LLC

Project Manager: Zach Conder

TODD 15 N TIE IN

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): **632951**
TODD 15 N TIE IN
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) 632951. 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. 632951 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 632951****Tasman Geosciences, LLC, Hobbs, NM**

TODD 15 N TIE IN

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL-21 @8'	S	08.02.2019 00:00	8 ft	632951-001
FL-22 @8'	S	08.02.2019 00:00	8 ft	632951-002
FL-23 @7'	S	08.02.2019 00:00	7 ft	632951-003
NSW-16 @4'	S	08.02.2019 00:00	4 ft	632951-004
NSW-17 @3.5'	S	08.02.2019 00:00	3.5 ft	632951-005
SSW-16 @4'	S	08.02.2019 00:00	4 ft	632951-006
SSW-17 @3.5'	S	08.02.2019 00:00	3.5 ft	632951-007



CASE NARRATIVE

Client Name: *Tasman Geosciences, LLC*

Project Name: *TODD 15 N TIE IN*

Project ID:

Work Order Number(s): 632951

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

Analytical non conformances and comments:

Batch: LBA-3098313 TPH by SW8015 Mod

Surrogate 1-Chlorooctane, Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 632951-003.



Certificate of Analytical Results

632951

Tasman Geosciences, LLC, Hobbs, NM
TODD 15 N TIE IN

Sample Id: FL-21 @8'	Matrix: Soil	Sample Depth: 8 ft
Lab Sample Id: 632951-001	Date Collected: 08.02.2019 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: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	10.5	10.0	0.354	mg/kg	08.06.2019 15:16		1

Analytical Method: TPH by SW8015 Mod	Prep Method: 1005
Analyst: ISU	% Moist:
Seq Number: 3098313	Date Prep: 08.09.2019 17:48
	Prep seq: 7683943

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.99	50.0	9.99	mg/kg	08.09.2019 20:37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.99	50.0	9.99	mg/kg	08.09.2019 20:37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.99	50.0	9.99	mg/kg	08.09.2019 20:37	U	1
Total TPH	PHC635	<9.99		9.99	mg/kg	08.09.2019 20:37	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	100	70 - 135	%		
o-Terphenyl	112	70 - 135	%		



Certificate of Analytical Results

632951

Tasman Geosciences, LLC, Hobbs, NM
TODD 15 N TIE IN

Sample Id: **FL-21 @8'**

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 632951-001

Date Collected: 08.02.2019 00:00

Date Received: 08.03.2019 09:30

Analytical Method: BTEX by SW 8260C

Prep Method: 5035A

Analyst: HOP

% Moist:

Tech: HOP

Seq Number: 3097577

Date Prep: 08.05.2019 16:55

Prep seq: 7683570

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000206	0.000994	0.000206	mg/kg	08.05.2019 23:12	U	1
Toluene	108-88-3	<0.000994	0.00497	0.000994	mg/kg	08.05.2019 23:12	U	1
Ethylbenzene	100-41-4	<0.000334	0.000994	0.000334	mg/kg	08.05.2019 23:12	U	1
m,p-Xylenes	179601-23-1	<0.000434	0.00199	0.000434	mg/kg	08.05.2019 23:12	U	1
o-Xylene	95-47-6	<0.000979	0.000994	0.000979	mg/kg	08.05.2019 23:12	U	1
Total Xylenes	1330-20-7	<0.000434		0.000434	mg/kg	08.05.2019 23:12	U	
Total BTEX		<0.000206		0.000206	mg/kg	08.05.2019 23:12	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	99	73 - 132	%		
1,2-Dichloroethane-D4	92	73 - 124	%		
Toluene-D8	104	69 - 124	%		
4-Bromofluorobenzene	83	58 - 152	%		



Certificate of Analytical Results

632951

Tasman Geosciences, LLC, Hobbs, NM
TODD 15 N TIE IN

Sample Id: **FL-22 @8'** Matrix: Soil Sample Depth: 8 ft
Lab Sample Id: 632951-002 Date Collected: 08.02.2019 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: 3097696 Date Prep: 08.06.2019 11:25
Prep seq: 7683592

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	14.0	9.98	0.353	mg/kg	08.06.2019 15:52		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ISU % Moist: Tech: ISU
Seq Number: 3098313 Date Prep: 08.09.2019 17:51
Prep seq: 7683943

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	11.8	49.6	9.92	mg/kg	08.09.2019 20:57	J	1
Diesel Range Organics (DRO)	C10C28DRO	312	49.6	9.92	mg/kg	08.09.2019 20:57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	71.7	49.6	9.92	mg/kg	08.09.2019 20:57		1
Total TPH	PHC635	396		9.92	mg/kg	08.09.2019 20:57		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	99	70 - 135	%		
o-Terphenyl	91	70 - 135	%		



Certificate of Analytical Results

632951

Tasman Geosciences, LLC, Hobbs, NM
TODD 15 N TIE IN

Sample Id: **FL-22 @8'**

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 632951-002

Date Collected: 08.02.2019 00:00

Date Received: 08.03.2019 09:30

Analytical Method: BTEX by SW 8260C

Prep Method: 5035A

Analyst: HOP

% Moist:

Tech: HOP

Seq Number: 3097577

Date Prep: 08.05.2019 16:55

Prep seq: 7683570

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 23:32	U	1
Toluene	108-88-3	<0.00100	0.00501	0.00100	mg/kg	08.05.2019 23:32	U	1
Ethylbenzene	100-41-4	<0.000336	0.00100	0.000336	mg/kg	08.05.2019 23:32	U	1
m,p-Xylenes	179601-23-1	<0.000438	0.00200	0.000438	mg/kg	08.05.2019 23:32	U	1
o-Xylene	95-47-6	<0.000987	0.00100	0.000987	mg/kg	08.05.2019 23:32	U	1
Total Xylenes	1330-20-7	<0.000438		0.000438	mg/kg	08.05.2019 23:32	U	
Total BTEX		<0.000207		0.000207	mg/kg	08.05.2019 23:32	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	99	73 - 132	%		
1,2-Dichloroethane-D4	94	73 - 124	%		
Toluene-D8	108	69 - 124	%		
4-Bromofluorobenzene	83	58 - 152	%		



Certificate of Analytical Results

632951

Tasman Geosciences, LLC, Hobbs, NM
TODD 15 N TIE IN

Sample Id: FL-23 @7'	Matrix: Soil	Sample Depth: 7 ft
Lab Sample Id: 632951-003	Date Collected: 08.02.2019 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: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	13.2	9.96	0.353	mg/kg	08.06.2019 16:28		1

Analytical Method: TPH by SW8015 Mod	Prep Method: 1005
Analyst: ISU	% Moist:
Seq Number: 3098313	Date Prep: 08.09.2019 17:54
	Prep seq: 7683943

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	2030	50.0	10.0	mg/kg	08.09.2019 21:16		1
Diesel Range Organics (DRO)	C10C28DRO	7080	100	20.0	mg/kg	08.13.2019 12:53	D	2
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	981	50.0	10.0	mg/kg	08.09.2019 21:16		1
Total TPH	PHC635	10100		10.0	mg/kg	08.13.2019 12:53		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	128	70 - 135	%		
o-Terphenyl	145	70 - 135	%		**



Certificate of Analytical Results

632951

Tasman Geosciences, LLC, Hobbs, NM
TODD 15 N TIE IN

Sample Id: **FL-23 @7'** Matrix: Soil Sample Depth: 7 ft
 Lab Sample Id: 632951-003 Date Collected: 08.02.2019 00:00 Date Received: 08.03.2019 09:30
 Analytical Method: BTEX by SW 8260C Prep Method: 5035A
 Analyst: HOP % Moist: Tech: HOP
 Seq Number: 3097577 Date Prep: 08.05.2019 16:55
 Prep seq: 7683570

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	1.35	0.198	0.0410	mg/kg	08.06.2019 04:26		200
Toluene	108-88-3	15.4	0.990	0.198	mg/kg	08.06.2019 04:26		200
Ethylbenzene	100-41-4	9.11	0.198	0.0665	mg/kg	08.06.2019 04:26		200
m,p-Xylenes	179601-23-1	27.6	0.396	0.0865	mg/kg	08.06.2019 04:26		200
o-Xylene	95-47-6	12.0	0.198	0.195	mg/kg	08.06.2019 04:26		200
Total Xylenes	1330-20-7	39.6		0.0865	mg/kg	08.06.2019 04:26		
Total BTEX		65.5		0.0410	mg/kg	08.06.2019 04:26		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	90	73 - 132	%		
1,2-Dichloroethane-D4	88	73 - 124	%		
Toluene-D8	116	69 - 124	%		
4-Bromofluorobenzene	97	58 - 152	%		



Certificate of Analytical Results

632951

Tasman Geosciences, LLC, Hobbs, NM
TODD 15 N TIE IN

Sample Id: NSW-16 @4'	Matrix: Soil	Sample Depth: 4 ft
Lab Sample Id: 632951-004	Date Collected: 08.02.2019 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: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	11.0	9.88	0.350	mg/kg	08.06.2019 17:05		1

Analytical Method: TPH by SW8015 Mod	Prep Method: 1005
Analyst: ISU	Tech: ISU
Seq Number: 3098313	Date Prep: 08.09.2019 17:57
	Prep seq: 7683943

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.93	49.7	9.93	mg/kg	08.09.2019 21:35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.93	49.7	9.93	mg/kg	08.09.2019 21:35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.93	49.7	9.93	mg/kg	08.09.2019 21:35	U	1
Total TPH	PHC635	<9.93		9.93	mg/kg	08.09.2019 21:35	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	101	70 - 135	%		
o-Terphenyl	113	70 - 135	%		



Certificate of Analytical Results

632951

Tasman Geosciences, LLC, Hobbs, NM
TODD 15 N TIE IN

Sample Id: **NSW-16 @4'** Matrix: **Soil** Sample Depth: **4 ft**
 Lab Sample Id: **632951-004** Date Collected: **08.02.2019 00:00** Date Received: **08.03.2019 09:30**
 Analytical Method: **BTEX by SW 8260C** Prep Method: **5035A**
 Analyst: **HOP** % Moist: Tech: **HOP**
 Seq Number: **3097577** Date Prep: **08.05.2019 16:55**
 Prep seq: **7683570**

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000206	0.000994	0.000206	mg/kg	08.05.2019 23:52	U	1
Toluene	108-88-3	<0.000994	0.00497	0.000994	mg/kg	08.05.2019 23:52	U	1
Ethylbenzene	100-41-4	<0.000334	0.000994	0.000334	mg/kg	08.05.2019 23:52	U	1
m,p-Xylenes	179601-23-1	<0.000434	0.00199	0.000434	mg/kg	08.05.2019 23:52	U	1
o-Xylene	95-47-6	<0.000979	0.000994	0.000979	mg/kg	08.05.2019 23:52	U	1
Total Xylenes	1330-20-7	<0.000434		0.000434	mg/kg	08.05.2019 23:52	U	
Total BTEX		<0.000206		0.000206	mg/kg	08.05.2019 23:52	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	99	73 - 132	%		
1,2-Dichloroethane-D4	93	73 - 124	%		
Toluene-D8	107	69 - 124	%		
4-Bromofluorobenzene	86	58 - 152	%		



Certificate of Analytical Results

632951

Tasman Geosciences, LLC, Hobbs, NM
TODD 15 N TIE IN

Sample Id: NSW-17 @3.5'	Matrix: Soil	Sample Depth: 3.5 ft
Lab Sample Id: 632951-005	Date Collected: 08.02.2019 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: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	9.39	10.1	0.357	mg/kg	08.06.2019 17:17	J	1

Analytical Method: TPH by SW8015 Mod	Prep Method: 1005
Analyst: ISU	% Moist:
Seq Number: 3098313	Date Prep: 08.09.2019 18:00
	Prep seq: 7683943

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.90	49.5	9.90	mg/kg	08.09.2019 22:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.90	49.5	9.90	mg/kg	08.09.2019 22:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.90	49.5	9.90	mg/kg	08.09.2019 22:13	U	1
Total TPH	PHC635	<9.90		9.90	mg/kg	08.09.2019 22:13	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	103	70 - 135	%		



Certificate of Analytical Results

632951

Tasman Geosciences, LLC, Hobbs, NM
TODD 15 N TIE IN

Sample Id: **NSW-17 @3.5'**

Matrix: Soil

Sample Depth: 3.5 ft

Lab Sample Id: 632951-005

Date Collected: 08.02.2019 00:00

Date Received: 08.03.2019 09:30

Analytical Method: BTEX by SW 8260C

Prep Method: 5035A

Analyst: HOP

% Moist:

Tech: HOP

Seq Number: 3097577

Date Prep: 08.05.2019 16:55

Prep seq: 7683570

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000207	0.00100	0.000207	mg/kg	08.06.2019 00:11	U	1
Toluene	108-88-3	<0.00100	0.00500	0.00100	mg/kg	08.06.2019 00:11	U	1
Ethylbenzene	100-41-4	<0.000336	0.00100	0.000336	mg/kg	08.06.2019 00:11	U	1
m,p-Xylenes	179601-23-1	<0.000437	0.00200	0.000437	mg/kg	08.06.2019 00:11	U	1
o-Xylene	95-47-6	<0.000985	0.00100	0.000985	mg/kg	08.06.2019 00:11	U	1
Total Xylenes	1330-20-7	<0.000437		0.000437	mg/kg	08.06.2019 00:11	U	
Total BTEX		<0.000207		0.000207	mg/kg	08.06.2019 00:11	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	97	73 - 132	%		
1,2-Dichloroethane-D4	91	73 - 124	%		
Toluene-D8	106	69 - 124	%		
4-Bromofluorobenzene	84	58 - 152	%		



Certificate of Analytical Results

632951

Tasman Geosciences, LLC, Hobbs, NM
TODD 15 N TIE IN

Sample Id: SSW-16 @4'	Matrix: Soil	Sample Depth: 4 ft
Lab Sample Id: 632951-006	Date Collected: 08.02.2019 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: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	11.5	10.1	0.356	mg/kg	08.06.2019 17:29		1

Analytical Method: TPH by SW8015 Mod	Prep Method: 1005
Analyst: ISU	% Moist:
Seq Number: 3098313	Date Prep: 08.09.2019 18:03
	Prep seq: 7683943

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.94	49.7	9.94	mg/kg	08.09.2019 22:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.94	49.7	9.94	mg/kg	08.09.2019 22:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.94	49.7	9.94	mg/kg	08.09.2019 22:13	U	1
Total TPH	PHC635	<9.94		9.94	mg/kg	08.09.2019 22:13	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	97	70 - 135	%		



Certificate of Analytical Results

632951

Tasman Geosciences, LLC, Hobbs, NM
TODD 15 N TIE IN

Sample Id: **SSW-16 @4'**

Matrix: Soil

Sample Depth: 4 ft

Lab Sample Id: 632951-006

Date Collected: 08.02.2019 00:00

Date Received: 08.03.2019 09:30

Analytical Method: BTEX by SW 8260C

Prep Method: 5035A

Analyst: HOP

% Moist:

Tech: HOP

Seq Number: 3097577

Date Prep: 08.05.2019 16:55

Prep seq: 7683570

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000205	0.000990	0.000205	mg/kg	08.06.2019 00:31	U	1
Toluene	108-88-3	<0.000990	0.00495	0.000990	mg/kg	08.06.2019 00:31	U	1
Ethylbenzene	100-41-4	<0.000332	0.000990	0.000332	mg/kg	08.06.2019 00:31	U	1
m,p-Xylenes	179601-23-1	<0.000432	0.00198	0.000432	mg/kg	08.06.2019 00:31	U	1
o-Xylene	95-47-6	<0.000975	0.000990	0.000975	mg/kg	08.06.2019 00:31	U	1
Total Xylenes	1330-20-7	<0.000432		0.000432	mg/kg	08.06.2019 00:31	U	
Total BTEX		<0.000205		0.000205	mg/kg	08.06.2019 00:31	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	98	73 - 132	%		
1,2-Dichloroethane-D4	94	73 - 124	%		
Toluene-D8	105	69 - 124	%		
4-Bromofluorobenzene	81	58 - 152	%		



Certificate of Analytical Results

632951

Tasman Geosciences, LLC, Hobbs, NM
TODD 15 N TIE IN

Sample Id: SSW-17 @3.5'	Matrix: Soil	Sample Depth: 3.5 ft
Lab Sample Id: 632951-007	Date Collected: 08.02.2019 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: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	8.97	9.94	0.352	mg/kg	08.06.2019 17:41	J	1

Analytical Method: TPH by SW8015 Mod	Prep Method: 1005
Analyst: ISU	% Moist:
Seq Number: 3098313	Date Prep: 08.09.2019 18:06
	Prep seq: 7683943

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.91	49.6	9.91	mg/kg	08.09.2019 22:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.91	49.6	9.91	mg/kg	08.09.2019 22:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.91	49.6	9.91	mg/kg	08.09.2019 22:32	U	1
Total TPH	PHC635	<9.91		9.91	mg/kg	08.09.2019 22:32	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	96	70 - 135	%		



Certificate of Analytical Results

632951

Tasman Geosciences, LLC, Hobbs, NM
TODD 15 N TIE IN

Sample Id: **SSW-17 @3.5'** Matrix: **Soil** Sample Depth: **3.5 ft**
 Lab Sample Id: **632951-007** Date Collected: **08.02.2019 00:00** Date Received: **08.03.2019 09:30**
 Analytical Method: **BTEX by SW 8260C** Prep Method: **5035A**
 Analyst: **HOP** % Moist: Tech: **HOP**
 Seq Number: **3097577** Date Prep: **08.05.2019 16:55**
 Prep seq: **7683570**

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000207	0.00100	0.000207	mg/kg	08.06.2019 00:50	U	1
Toluene	108-88-3	<0.00100	0.00501	0.00100	mg/kg	08.06.2019 00:50	U	1
Ethylbenzene	100-41-4	<0.000336	0.00100	0.000336	mg/kg	08.06.2019 00:50	U	1
m,p-Xylenes	179601-23-1	<0.000438	0.00200	0.000438	mg/kg	08.06.2019 00:50	U	1
o-Xylene	95-47-6	<0.000987	0.00100	0.000987	mg/kg	08.06.2019 00:50	U	1
Total Xylenes	1330-20-7	<0.000438		0.000438	mg/kg	08.06.2019 00:50	U	
Total BTEX		<0.000207		0.000207	mg/kg	08.06.2019 00:50	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	98	73 - 132	%		
1,2-Dichloroethane-D4	95	73 - 124	%		
Toluene-D8	106	69 - 124	%		
4-Bromofluorobenzene	83	58 - 152	%		



Certificate of Analytical Results

632951

Tasman Geosciences, LLC, Hobbs, NM
TODD 15 N TIE IN

Sample Id: 7683570-1-BLK	Matrix: Solid	Sample Depth:
Lab Sample Id: 7683570-1-BLK	Date Collected:	Date Received:
Analytical Method: BTEX by SW 8260C		Prep Method: 5035A
Analyst: HOP	% Moist:	Tech: HOP
Seq Number: 3097577	Date Prep: 08.05.2019 16:55	
	Prep seq: 7683570	

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 22:53	U	1
Toluene	108-88-3	<0.00100	0.00500	0.00100	mg/kg	08.05.2019 22:53	U	1
Ethylbenzene	100-41-4	<0.000336	0.00100	0.000336	mg/kg	08.05.2019 22:53	U	1
m,p-Xylenes	179601-23-1	<0.000437	0.00200	0.000437	mg/kg	08.05.2019 22:53	U	1
o-Xylene	95-47-6	<0.000985	0.00100	0.000985	mg/kg	08.05.2019 22:53	U	1
Total Xylenes	1330-20-7	<0.000437		0.000437	mg/kg	08.05.2019 22:53	U	
Total BTEX		<0.000207		0.000207	mg/kg	08.05.2019 22:53	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	96	73 - 132	%		
1,2-Dichloroethane-D4	95	73 - 124	%		
Toluene-D8	101	69 - 124	%		
4-Bromofluorobenzene	86	58 - 152	%		

Sample Id: 7683592-1-BLK	Matrix: Solid	Sample Depth:
Lab Sample Id: 7683592-1-BLK	Date Collected:	Date Received:
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Analyst: JYM	% Moist:	Tech: JYM
Seq Number: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.354	10.0	0.354	mg/kg	08.06.2019 14:40	U	1



Certificate of Analytical Results

632951

Tasman Geosciences, LLC, Hobbs, NM
TODD 15 N TIE IN

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	%		



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: TODD 15 N TIE IN

Work Orders : 632951

Project ID:

Lab Batch #: 3097577

Sample: 7683570-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.05.2019 20:56

SURROGATE RECOVERY STUDY

BTEX by SW 8260C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0488	0.0500	98	73-132	
1,2-Dichloroethane-D4	0.0431	0.0500	86	73-124	
Toluene-D8	0.0518	0.0500	104	69-124	
4-Bromofluorobenzene	0.0497	0.0500	99	58-152	

Lab Batch #: 3097577

Sample: 7683570-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.05.2019 21:16

SURROGATE RECOVERY STUDY

BTEX by SW 8260C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0475	0.0500	95	73-132	
1,2-Dichloroethane-D4	0.0426	0.0500	85	73-124	
Toluene-D8	0.0525	0.0500	105	69-124	
4-Bromofluorobenzene	0.0493	0.0500	99	58-152	

Lab Batch #: 3097577

Sample: 632951-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.05.2019 21:35

SURROGATE RECOVERY STUDY

BTEX by SW 8260C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0483	0.0500	97	73-132	
1,2-Dichloroethane-D4	0.0431	0.0500	86	73-124	
Toluene-D8	0.0525	0.0500	105	69-124	
4-Bromofluorobenzene	0.0491	0.0500	98	58-152	

Lab Batch #: 3097577

Sample: 632951-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.05.2019 21:55

SURROGATE RECOVERY STUDY

BTEX by SW 8260C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0493	0.0500	99	73-132	
1,2-Dichloroethane-D4	0.0427	0.0500	85	73-124	
Toluene-D8	0.0529	0.0500	106	69-124	
4-Bromofluorobenzene	0.0498	0.0500	100	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: TODD 15 N TIE IN

Work Orders : 632951

Project ID:

Lab Batch #: 3097577

Sample: 7683570-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.05.2019 22:53

SURROGATE RECOVERY STUDY

BTEX by SW 8260C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0479	0.0500	96	73-132	
1,2-Dichloroethane-D4	0.0474	0.0500	95	73-124	
Toluene-D8	0.0505	0.0500	101	69-124	
4-Bromofluorobenzene	0.0430	0.0500	86	58-152	

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	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
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	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
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	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
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: TODD 15 N TIE IN

Work Orders : 632951

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: TODD 15 N TIE IN

Work Order #: 632951

Analyst: HOP

Lab Batch ID: 3097577

Units: mg/kg

Date Prepared: 08.05.2019

Sample: 7683570-1-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	0.0505	101	0.0500	0.0478	96	5	62-132	25	
Toluene	<0.00100	0.0500	0.0532	106	0.0500	0.0490	98	8	66-124	25	
Ethylbenzene	<0.000336	0.0500	0.0553	111	0.0500	0.0502	100	10	71-134	25	
m,p-Xylenes	<0.000437	0.100	0.111	111	0.100	0.102	102	8	69-128	25	
o-Xylene	<0.000985	0.0500	0.0541	108	0.0500	0.0516	103	5	72-131	25	

Analyst: JYM

Lab Batch ID: 3097696

Units: mg/kg

Date Prepared: 08.06.2019

Sample: 7683592-1-BKS

Batch #: 1

Date Analyzed: 08.06.2019

Matrix: Solid

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	105	105	100	105	105	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: TODD 15 N TIE IN

Work Order #: 632951

Analyst: ISU

Date Prepared: 08.09.2019

Project ID:

Date Analyzed: 08.09.2019

Lab Batch ID: 3098313

Sample: 7683943-1-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)	<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 / MSD Recoveries

Project Name: TODD 15 N TIE IN

Work Order #: 632951

Lab Batch ID: 3097577

Date Analyzed: 08.05.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 632951-001 S

Batch #: 1 Matrix: Soil

Date Prepared: 08.05.2019

Analyst: HOP

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 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	<0.000207	0.0500	0.0420	84	0.0496	0.0418	84	0	62-132	25	
Toluene	<0.00100	0.0500	0.0435	87	0.0496	0.0428	86	2	66-124	25	
Ethylbenzene	<0.000336	0.0500	0.0442	88	0.0496	0.0444	90	0	71-134	25	
m,p-Xylenes	<0.000437	0.100	0.0881	88	0.0992	0.0883	89	0	69-128	25	
o-Xylene	<0.000985	0.0500	0.0448	90	0.0496	0.0449	91	0	72-131	25	

Lab Batch ID: 3097696

QC- Sample ID: 632951-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08.06.2019

Date Prepared: 08.06.2019

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	10.5	99.6	106	96	100	107	97	1	80-120	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: TODD 15 N TIE IN

Work Order #: 632951

Lab Batch ID: 3097696

Date Analyzed: 08.06.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 632951-002 S

Batch #: 1 Matrix: Soil

Date Prepared: 08.06.2019

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	14.0	100	113	99	100	113	99	0	80-120	20	

Lab Batch ID: 3098313

QC- Sample ID: 632906-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08.09.2019

Date Prepared: 08.09.2019

Analyst: ISU

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)	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] = $100 \times (C-A) / B$
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.

XENCO
LABORATORIES

Stafford, Texas (281-240-4200)

Midland, Texas (432-704-5251)

Dallas Texas (214-902-0300)

632951

Midland, Texas (432-704-5251)

632951

[illegible]

SHIP DATE: 02AUG19
ACTWGT: 14.00 LB MWN
CAD: 0909328/CFFE3211
DIMS: 12x10x9 IN
BILL RECIPIENT

ORIGIN ID: H08A (575) 392-7550
MAIL SERVICES ETC. LLC
4008 N GRIMES
HOBBBS, NM 88240
UNITED STATES US

551C2/F551/104C

STAFFORD TX 77477
REF: (281) 240-4200
DEPT:

XENCO LABORATORIES
4143 GREENBRIAR DR
STAFFORD TX 77477

TRK# 4705 2521 4165
SATURDAY 12:00P
PRIORITY OVERNIGHT

TX-US 1AH
77477

Part # 156148-434 HIT EXP 03/19 ::

EXPRESS
J181118060501LV

0201

77477

0201

77477

0201

77477

0201

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tasman Geosciences, LLC

Date/ Time Received: 08.03.2019 09.30.00 AM

Work Order #: 632951

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?	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)?	No
#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: MDS

PH Device/Lot#:

Checklist completed by:



Monica Shakhshir

Date: 08.06.2019

Checklist reviewed by:



John Builes

Date: 08.06.2019



Analytical Report 632952

for

Tasman Geosciences, LLC

Project Manager: Zach Conder

Todd 15 N Tie In

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): **632952**

Todd 15 N Tie In

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) 632952. 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. 632952 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 632952****Tasman Geosciences, LLC, Hobbs, NM**

Todd 15 N Tie In

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL-19N @7'	S	07.31.2019 00:00	7 ft	632952-001
FL-19S @7'	S	07.31.2019 00:00	7 ft	632952-002
FL-20N @7'	S	07.31.2019 00:00	7 ft	632952-003
FL-20S @7'	S	07.31.2019 00:00	7 ft	632952-004
NSW-14 @3.5'	S	07.31.2019 00:00	3.5 ft	632952-005
SSW-14 @3.5'	S	07.31.2019 00:00	3.5 ft	632952-006
NSW-15 @3.5'	S	07.31.2019 00:00	3.5 ft	632952-007
SSW-15 @3.5'	S	07.31.2019 00:00	3.5 ft	632952-008
FL-21N@8'	S	07.31.2019 00:00	8 ft	632952-009
NSW-16@4'	S	07.31.2019 00:00	4 ft	632952-010



CASE NARRATIVE

Client Name: *Tasman Geosciences, LLC*

Project Name: *Todd 15 N Tie In*

Project ID:

Work Order Number(s): 632952

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

632952

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: FL-19N @7'	Matrix: Soil	Sample Depth: 7 ft
Lab Sample Id: 632952-001	Date Collected: 07.31.2019 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: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	10.5	9.96	0.353	mg/kg	08.06.2019 17:53		1

Analytical Method: TPH by SW8015 Mod	Prep Method: 1005
Analyst: ISU	% Moist:
Seq Number: 3098313	Date Prep: 08.09.2019 18:09
	Prep seq: 7683943

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.95	49.8	9.95	mg/kg	08.09.2019 22:51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.95	49.8	9.95	mg/kg	08.09.2019 22:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.95	49.8	9.95	mg/kg	08.09.2019 22:51	U	1
Total TPH	PHC635	<9.95		9.95	mg/kg	08.09.2019 22:51	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	96	70 - 135	%		
o-Terphenyl	104	70 - 135	%		



Certificate of Analytical Results

632952

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **FL-19N @7'**

Matrix: Soil

Sample Depth: 7 ft

Lab Sample Id: 632952-001

Date Collected: 07.31.2019 00:00

Date Received: 08.03.2019 09:30

Analytical Method: BTEX by SW 8260C

Prep Method: 5035A

Analyst: HOP

% Moist:

Tech: HOP

Seq Number: 3097577

Date Prep: 08.05.2019 16:55

Prep seq: 7683570

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000206	0.000994	0.000206	mg/kg	08.06.2019 01:09	U	1
Toluene	108-88-3	<0.000994	0.00497	0.000994	mg/kg	08.06.2019 01:09	U	1
Ethylbenzene	100-41-4	<0.000334	0.000994	0.000334	mg/kg	08.06.2019 01:09	U	1
m,p-Xylenes	179601-23-1	<0.000434	0.00199	0.000434	mg/kg	08.06.2019 01:09	U	1
o-Xylene	95-47-6	<0.000979	0.000994	0.000979	mg/kg	08.06.2019 01:09	U	1
Total Xylenes	1330-20-7	<0.000434		0.000434	mg/kg	08.06.2019 01:09	U	
Total BTEX		<0.000206		0.000206	mg/kg	08.06.2019 01:09	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	97	73 - 132	%		
1,2-Dichloroethane-D4	92	73 - 124	%		
Toluene-D8	105	69 - 124	%		
4-Bromofluorobenzene	84	58 - 152	%		



Certificate of Analytical Results

632952

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: FL-19S @7'	Matrix: Soil	Sample Depth: 7 ft
Lab Sample Id: 632952-002	Date Collected: 07.31.2019 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: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	10.8	9.86	0.349	mg/kg	08.06.2019 18:05		1

Analytical Method: TPH by SW8015 Mod	Prep Method: 1005
Analyst: ISU	% Moist:
Seq Number: 3098313	Date Prep: 08.09.2019 18:12
	Prep seq: 7683943

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.90	49.5	9.90	mg/kg	08.09.2019 23:09	U	1
Diesel Range Organics (DRO)	C10C28DRO	20.0	49.5	9.90	mg/kg	08.09.2019 23:09	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.90	49.5	9.90	mg/kg	08.09.2019 23:09	U	1
Total TPH	PHC635	20.0		9.90	mg/kg	08.09.2019 23:09	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	97	70 - 135	%		
o-Terphenyl	105	70 - 135	%		



Certificate of Analytical Results

632952

Tasman Geosciences, LLC, Hobbs, NM

Todd 15 N Tie In

Sample Id: **FL-19S @7'**

Matrix: Soil

Sample Depth: 7 ft

Lab Sample Id: 632952-002

Date Collected: 07.31.2019 00:00

Date Received: 08.03.2019 09:30

Analytical Method: BTEX by SW 8260C

Prep Method: 5035A

Analyst: HOP

% Moist:

Tech: HOP

Seq Number: 3097577

Date Prep: 08.05.2019 16:55

Prep seq: 7683570

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000205	0.000992	0.000205	mg/kg	08.06.2019 01:29	U	1
Toluene	108-88-3	<0.000992	0.00496	0.000992	mg/kg	08.06.2019 01:29	U	1
Ethylbenzene	100-41-4	<0.000333	0.000992	0.000333	mg/kg	08.06.2019 01:29	U	1
m,p-Xylenes	179601-23-1	<0.000433	0.00198	0.000433	mg/kg	08.06.2019 01:29	U	1
o-Xylene	95-47-6	<0.000977	0.000992	0.000977	mg/kg	08.06.2019 01:29	U	1
Total Xylenes	1330-20-7	<0.000433		0.000433	mg/kg	08.06.2019 01:29	U	
Total BTEX		<0.000205		0.000205	mg/kg	08.06.2019 01:29	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	101	73 - 132	%		
1,2-Dichloroethane-D4	96	73 - 124	%		
Toluene-D8	106	69 - 124	%		
4-Bromofluorobenzene	85	58 - 152	%		



Certificate of Analytical Results

632952

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **FL-20N @7'** Matrix: Soil Sample Depth: 7 ft
Lab Sample Id: 632952-003 Date Collected: 07.31.2019 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: 3097696 Date Prep: 08.06.2019 11:25
Prep seq: 7683592

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	10.1	10.0	0.355	mg/kg	08.06.2019 18:17		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005
Analyst: ISU % Moist: Tech: ISU
Seq Number: 3098318 Date Prep: 08.12.2019 09:24
Prep seq: 7683989

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.94	49.7	9.94	mg/kg	08.12.2019 14:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.94	49.7	9.94	mg/kg	08.12.2019 14:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.94	49.7	9.94	mg/kg	08.12.2019 14:30	U	1
Total TPH	PHC635	<9.94		9.94	mg/kg	08.12.2019 14:30	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	79	70 - 135	%		
o-Terphenyl	87	70 - 135	%		



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **FL-20N @7'**

Matrix: Soil

Sample Depth: 7 ft

Lab Sample Id: 632952-003

Date Collected: 07.31.2019 00:00

Date Received: 08.03.2019 09:30

Analytical Method: BTEX by SW 8260C

Prep Method: 5035A

Analyst: HOP

% Moist:

Tech: HOP

Seq Number: 3097577

Date Prep: 08.05.2019 16:55

Prep seq: 7683570

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000206	0.000996	0.000206	mg/kg	08.06.2019 01:48	U	1
Toluene	108-88-3	<0.000996	0.00498	0.000996	mg/kg	08.06.2019 01:48	U	1
Ethylbenzene	100-41-4	<0.000334	0.000996	0.000334	mg/kg	08.06.2019 01:48	U	1
m,p-Xylenes	179601-23-1	<0.000435	0.00199	0.000435	mg/kg	08.06.2019 01:48	U	1
o-Xylene	95-47-6	<0.000981	0.000996	0.000981	mg/kg	08.06.2019 01:48	U	1
Total Xylenes	1330-20-7	<0.000435		0.000435	mg/kg	08.06.2019 01:48	U	
Total BTEX		<0.000206		0.000206	mg/kg	08.06.2019 01:48	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	98	73 - 132	%		
1,2-Dichloroethane-D4	91	73 - 124	%		
Toluene-D8	104	69 - 124	%		
4-Bromofluorobenzene	87	58 - 152	%		



Certificate of Analytical Results

632952

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: FL-20S @7'	Matrix: Soil	Sample Depth: 7 ft
Lab Sample Id: 632952-004	Date Collected: 07.31.2019 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: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	91.8	10.0	0.355	mg/kg	08.06.2019 18:29		1

Analytical Method: TPH by SW8015 Mod	Prep Method: 1005
Analyst: ISU	% Moist:
Seq Number: 3098318	Date Prep: 08.12.2019 09:33
	Prep seq: 7683989

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.93	49.7	9.93	mg/kg	08.12.2019 15:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.93	49.7	9.93	mg/kg	08.12.2019 15:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.93	49.7	9.93	mg/kg	08.12.2019 15:28	U	1
Total TPH	PHC635	<9.93		9.93	mg/kg	08.12.2019 15:28	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	83	70 - 135	%		
o-Terphenyl	89	70 - 135	%		



Certificate of Analytical Results

632952

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **FL-20S @7'**

Matrix: Soil

Sample Depth: 7 ft

Lab Sample Id: 632952-004

Date Collected: 07.31.2019 00:00

Date Received: 08.03.2019 09:30

Analytical Method: BTEX by SW 8260C

Prep Method: 5035A

Analyst: HOP

% Moist:

Tech: HOP

Seq Number: 3097577

Date Prep: 08.05.2019 16:55

Prep seq: 7683570

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000207	0.000998	0.000207	mg/kg	08.06.2019 02:08	U	1
Toluene	108-88-3	<0.000998	0.00499	0.000998	mg/kg	08.06.2019 02:08	U	1
Ethylbenzene	100-41-4	<0.000335	0.000998	0.000335	mg/kg	08.06.2019 02:08	U	1
m,p-Xylenes	179601-23-1	<0.000436	0.00200	0.000436	mg/kg	08.06.2019 02:08	U	1
o-Xylene	95-47-6	<0.000983	0.000998	0.000983	mg/kg	08.06.2019 02:08	U	1
Total Xylenes	1330-20-7	<0.000436		0.000436	mg/kg	08.06.2019 02:08	U	
Total BTEX		<0.000207		0.000207	mg/kg	08.06.2019 02:08	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	99	73 - 132	%		
1,2-Dichloroethane-D4	93	73 - 124	%		
Toluene-D8	106	69 - 124	%		
4-Bromofluorobenzene	88	58 - 152	%		



Certificate of Analytical Results

632952

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: NSW-14 @3.5'	Matrix: Soil	Sample Depth: 3.5 ft
Lab Sample Id: 632952-005	Date Collected: 07.31.2019 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: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	11.6	10.0	0.355	mg/kg	08.06.2019 18:41		1

Analytical Method: TPH by SW8015 Mod	Prep Method: 1005
Analyst: ISU	% Moist:
Seq Number: 3098318	Date Prep: 08.12.2019 09:36
	Prep seq: 7683989

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.88	49.4	9.88	mg/kg	08.12.2019 15:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.88	49.4	9.88	mg/kg	08.12.2019 15:47	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.88	49.4	9.88	mg/kg	08.12.2019 15:47	U	1
Total TPH	PHC635	<9.88		9.88	mg/kg	08.12.2019 15:47	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	85	70 - 135	%		
o-Terphenyl	92	70 - 135	%		



Certificate of Analytical Results

632952

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **NSW-14 @3.5'** Matrix: **Soil** Sample Depth: **3.5 ft**
 Lab Sample Id: **632952-005** Date Collected: **07.31.2019 00:00** Date Received: **08.03.2019 09:30**
 Analytical Method: **BTEX by SW 8260C** Prep Method: **5035A**
 Analyst: **HOP** % Moist: Tech: **HOP**
 Seq Number: **3097577** Date Prep: **08.05.2019 16:55**
 Prep seq: **7683570**

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000208	0.00100	0.000208	mg/kg	08.06.2019 02:27	U	1
Toluene	108-88-3	<0.00100	0.00502	0.00100	mg/kg	08.06.2019 02:27	U	1
Ethylbenzene	100-41-4	<0.000337	0.00100	0.000337	mg/kg	08.06.2019 02:27	U	1
m,p-Xylenes	179601-23-1	<0.000438	0.00201	0.000438	mg/kg	08.06.2019 02:27	U	1
o-Xylene	95-47-6	<0.000989	0.00100	0.000989	mg/kg	08.06.2019 02:27	U	1
Total Xylenes	1330-20-7	<0.000438		0.000438	mg/kg	08.06.2019 02:27	U	
Total BTEX		<0.000208		0.000208	mg/kg	08.06.2019 02:27	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	98	73 - 132	%		
1,2-Dichloroethane-D4	92	73 - 124	%		
Toluene-D8	106	69 - 124	%		
4-Bromofluorobenzene	85	58 - 152	%		



Certificate of Analytical Results

632952

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: SSW-14 @3.5'	Matrix: Soil	Sample Depth: 3.5 ft
Lab Sample Id: 632952-006	Date Collected: 07.31.2019 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: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	9.42	10.0	0.355	mg/kg	08.06.2019 18:54	J	1

Analytical Method: TPH by SW8015 Mod	Prep Method: 1005
Analyst: ISU	% Moist:
Seq Number: 3098318	Date Prep: 08.12.2019 09:39
	Prep seq: 7683989

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.96	49.8	9.96	mg/kg	08.12.2019 16:06	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.96	49.8	9.96	mg/kg	08.12.2019 16:06	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.96	49.8	9.96	mg/kg	08.12.2019 16:06	U	1
Total TPH	PHC635	<9.96		9.96	mg/kg	08.12.2019 16:06	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	78	70 - 135	%		
o-Terphenyl	85	70 - 135	%		



Certificate of Analytical Results

632952

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **SSW-14 @3.5'** Matrix: Soil Sample Depth: 3.5 ft
 Lab Sample Id: 632952-006 Date Collected: 07.31.2019 00:00 Date Received: 08.03.2019 09:30
 Analytical Method: BTEX by SW 8260C Prep Method: 5035A
 Analyst: HOP % Moist: Tech: HOP
 Seq Number: 3097577 Date Prep: 08.05.2019 16:55
 Prep seq: 7683570

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000205	0.000992	0.000205	mg/kg	08.06.2019 02:47	U	1
Toluene	108-88-3	<0.000992	0.00496	0.000992	mg/kg	08.06.2019 02:47	U	1
Ethylbenzene	100-41-4	<0.000333	0.000992	0.000333	mg/kg	08.06.2019 02:47	U	1
m,p-Xylenes	179601-23-1	<0.000433	0.00198	0.000433	mg/kg	08.06.2019 02:47	U	1
o-Xylene	95-47-6	<0.000977	0.000992	0.000977	mg/kg	08.06.2019 02:47	U	1
Total Xylenes	1330-20-7	<0.000433		0.000433	mg/kg	08.06.2019 02:47	U	
Total BTEX		<0.000205		0.000205	mg/kg	08.06.2019 02:47	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	98	73 - 132	%		
1,2-Dichloroethane-D4	91	73 - 124	%		
Toluene-D8	103	69 - 124	%		
4-Bromofluorobenzene	86	58 - 152	%		



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: NSW-15 @3.5'	Matrix: Soil	Sample Depth: 3.5 ft
Lab Sample Id: 632952-007	Date Collected: 07.31.2019 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: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	10.3	9.96	0.353	mg/kg	08.06.2019 19:30		1

Analytical Method: TPH by SW8015 Mod	Prep Method: 1005
Analyst: ISU	% Moist:
Seq Number: 3098318	Date Prep: 08.12.2019 09:42
	Prep seq: 7683989

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.88	49.4	9.88	mg/kg	08.12.2019 16:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	15.2	49.4	9.88	mg/kg	08.12.2019 16:25	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.88	49.4	9.88	mg/kg	08.12.2019 16:25	U	1
Total TPH	PHC635	15.2		9.88	mg/kg	08.12.2019 16:25	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	73	70 - 135	%		
o-Terphenyl	79	70 - 135	%		



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **NSW-15 @3.5'** Matrix: **Soil** Sample Depth: **3.5 ft**
 Lab Sample Id: **632952-007** Date Collected: **07.31.2019 00:00** Date Received: **08.03.2019 09:30**
 Analytical Method: **BTEX by SW 8260C** Prep Method: **5035A**
 Analyst: **HOP** % Moist: Tech: **HOP**
 Seq Number: **3097577** Date Prep: **08.05.2019 16:55**
 Prep seq: **7683570**

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000208	0.00101	0.000208	mg/kg	08.06.2019 03:07	U	1
Toluene	108-88-3	<0.00101	0.00503	0.00101	mg/kg	08.06.2019 03:07	U	1
Ethylbenzene	100-41-4	<0.000338	0.00101	0.000338	mg/kg	08.06.2019 03:07	U	1
m,p-Xylenes	179601-23-1	<0.000439	0.00201	0.000439	mg/kg	08.06.2019 03:07	U	1
o-Xylene	95-47-6	<0.000991	0.00101	0.000991	mg/kg	08.06.2019 03:07	U	1
Total Xylenes	1330-20-7	<0.000439		0.000439	mg/kg	08.06.2019 03:07	U	
Total BTEX		<0.000208		0.000208	mg/kg	08.06.2019 03:07	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	100	73 - 132	%		
1,2-Dichloroethane-D4	96	73 - 124	%		
Toluene-D8	105	69 - 124	%		
4-Bromofluorobenzene	86	58 - 152	%		



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: SSW-15 @3.5'	Matrix: Soil	Sample Depth: 3.5 ft
Lab Sample Id: 632952-008	Date Collected: 07.31.2019 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: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	8.95	10.0	0.354	mg/kg	08.06.2019 19:42	J	1

Analytical Method: TPH by SW8015 Mod	Prep Method: 1005
Analyst: ISU	% Moist:
Seq Number: 3098318	Date Prep: 08.12.2019 09:45
	Prep seq: 7683989

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.90	49.5	9.90	mg/kg	08.13.2019 16:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	23.9	49.5	9.90	mg/kg	08.13.2019 16:26	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.90	49.5	9.90	mg/kg	08.13.2019 16:26	U	1
Total TPH	PHC635	23.9		9.90	mg/kg	08.13.2019 16:26	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	85	70 - 135	%		
o-Terphenyl	90	70 - 135	%		



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **SSW-15 @3.5'** Matrix: **Soil** Sample Depth: **3.5 ft**
 Lab Sample Id: **632952-008** Date Collected: **07.31.2019 00:00** Date Received: **08.03.2019 09:30**
 Analytical Method: **BTEX by SW 8260C** Prep Method: **5035A**
 Analyst: **HOP** % Moist: Tech: **HOP**
 Seq Number: **3097577** Date Prep: **08.05.2019 16:55**
 Prep seq: **7683570**

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000208	0.00101	0.000208	mg/kg	08.06.2019 03:26	U	1
Toluene	108-88-3	<0.00101	0.00503	0.00101	mg/kg	08.06.2019 03:26	U	1
Ethylbenzene	100-41-4	<0.000338	0.00101	0.000338	mg/kg	08.06.2019 03:26	U	1
m,p-Xylenes	179601-23-1	<0.000439	0.00201	0.000439	mg/kg	08.06.2019 03:26	U	1
o-Xylene	95-47-6	<0.000991	0.00101	0.000991	mg/kg	08.06.2019 03:26	U	1
Total Xylenes	1330-20-7	<0.000439		0.000439	mg/kg	08.06.2019 03:26	U	
Total BTEX		<0.000208		0.000208	mg/kg	08.06.2019 03:26	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	99	73 - 132	%		
1,2-Dichloroethane-D4	94	73 - 124	%		
Toluene-D8	105	69 - 124	%		
4-Bromofluorobenzene	87	58 - 152	%		



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: FL-21N@8'	Matrix: Soil	Sample Depth: 8 ft
Lab Sample Id: 632952-009	Date Collected: 07.31.2019 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: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	10.3	9.98	0.353	mg/kg	08.06.2019 19:54		1

Analytical Method: TPH by SW8015 Mod	Prep Method: 1005
Analyst: ISU	% Moist:
Seq Number: 3098318	Date Prep: 08.12.2019 09:48
	Prep seq: 7683989

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.91	49.6	9.91	mg/kg	08.13.2019 00:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<9.91	49.6	9.91	mg/kg	08.13.2019 00:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.91	49.6	9.91	mg/kg	08.13.2019 00:49	U	1
Total TPH	PHC635	<9.91		9.91	mg/kg	08.13.2019 00:49	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	95	70 - 135	%		
o-Terphenyl	103	70 - 135	%		



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Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **FL-21N@8'**

Matrix: Soil

Sample Depth: 8 ft

Lab Sample Id: 632952-009

Date Collected: 07.31.2019 00:00

Date Received: 08.03.2019 09:30

Analytical Method: BTEX by SW 8260C

Prep Method: 5035A

Analyst: HOP

% Moist:

Tech: HOP

Seq Number: 3097577

Date Prep: 08.05.2019 16:55

Prep seq: 7683570

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000206	0.000994	0.000206	mg/kg	08.06.2019 03:46	U	1
Toluene	108-88-3	<0.000994	0.00497	0.000994	mg/kg	08.06.2019 03:46	U	1
Ethylbenzene	100-41-4	<0.000334	0.000994	0.000334	mg/kg	08.06.2019 03:46	U	1
m,p-Xylenes	179601-23-1	<0.000434	0.00199	0.000434	mg/kg	08.06.2019 03:46	U	1
o-Xylene	95-47-6	<0.000979	0.000994	0.000979	mg/kg	08.06.2019 03:46	U	1
Total Xylenes	1330-20-7	<0.000434		0.000434	mg/kg	08.06.2019 03:46	U	
Total BTEX		<0.000206		0.000206	mg/kg	08.06.2019 03:46	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	99	73 - 132	%		
1,2-Dichloroethane-D4	92	73 - 124	%		
Toluene-D8	108	69 - 124	%		
4-Bromofluorobenzene	86	58 - 152	%		



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Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: NSW-16@4'	Matrix: Soil	Sample Depth: 4 ft
Lab Sample Id: 632952-010	Date Collected: 07.31.2019 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: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	18.8	9.96	0.353	mg/kg	08.06.2019 20:06		1

Analytical Method: TPH by SW8015 Mod	Prep Method: 1005
Analyst: ISU	% Moist:
Seq Number: 3098318	Date Prep: 08.12.2019 09:51
	Prep seq: 7683989

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<9.95	49.8	9.95	mg/kg	08.13.2019 01:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	24.8	49.8	9.95	mg/kg	08.13.2019 01:08	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<9.95	49.8	9.95	mg/kg	08.13.2019 01:08	U	1
Total TPH	PHC635	24.8		9.95	mg/kg	08.13.2019 01:08	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	91	70 - 135	%		
o-Terphenyl	98	70 - 135	%		



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Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: **NSW-16@4'**

Matrix: Soil

Sample Depth: 4 ft

Lab Sample Id: 632952-010

Date Collected: 07.31.2019 00:00

Date Received: 08.03.2019 09:30

Analytical Method: BTEX by SW 8260C

Prep Method: 5035A

Analyst: HOP

% Moist:

Tech: HOP

Seq Number: 3097577

Date Prep: 08.05.2019 16:55

Prep seq: 7683570

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000208	0.00100	0.000208	mg/kg	08.06.2019 04:06	U	1
Toluene	108-88-3	<0.00100	0.00502	0.00100	mg/kg	08.06.2019 04:06	U	1
Ethylbenzene	100-41-4	<0.000337	0.00100	0.000337	mg/kg	08.06.2019 04:06	U	1
m,p-Xylenes	179601-23-1	<0.000438	0.00201	0.000438	mg/kg	08.06.2019 04:06	U	1
o-Xylene	95-47-6	<0.000989	0.00100	0.000989	mg/kg	08.06.2019 04:06	U	1
Total Xylenes	1330-20-7	<0.000438		0.000438	mg/kg	08.06.2019 04:06	U	
Total BTEX		<0.000208		0.000208	mg/kg	08.06.2019 04:06	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	98	73 - 132	%		
1,2-Dichloroethane-D4	93	73 - 124	%		
Toluene-D8	104	69 - 124	%		
4-Bromofluorobenzene	83	58 - 152	%		



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

Sample Id: 7683570-1-BLK	Matrix: Solid	Sample Depth:
Lab Sample Id: 7683570-1-BLK	Date Collected:	Date Received:
Analytical Method: BTEX by SW 8260C		Prep Method: 5035A
Analyst: HOP	% Moist:	Tech: HOP
Seq Number: 3097577	Date Prep: 08.05.2019 16:55	
	Prep seq: 7683570	

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 22:53	U	1
Toluene	108-88-3	<0.00100	0.00500	0.00100	mg/kg	08.05.2019 22:53	U	1
Ethylbenzene	100-41-4	<0.000336	0.00100	0.000336	mg/kg	08.05.2019 22:53	U	1
m,p-Xylenes	179601-23-1	<0.000437	0.00200	0.000437	mg/kg	08.05.2019 22:53	U	1
o-Xylene	95-47-6	<0.000985	0.00100	0.000985	mg/kg	08.05.2019 22:53	U	1
Total Xylenes	1330-20-7	<0.000437		0.000437	mg/kg	08.05.2019 22:53	U	
Total BTEX		<0.000207		0.000207	mg/kg	08.05.2019 22:53	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	96	73 - 132	%		
1,2-Dichloroethane-D4	95	73 - 124	%		
Toluene-D8	101	69 - 124	%		
4-Bromofluorobenzene	86	58 - 152	%		

Sample Id: 7683592-1-BLK	Matrix: Solid	Sample Depth:
Lab Sample Id: 7683592-1-BLK	Date Collected:	Date Received:
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Analyst: JYM	% Moist:	Tech: JYM
Seq Number: 3097696	Date Prep: 08.06.2019 11:25	
	Prep seq: 7683592	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.354	10.0	0.354	mg/kg	08.06.2019 14:40	U	1



Certificate of Analytical Results

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Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Tie In

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	%		

Sample Id: 7683989-1-BLK	Matrix: Solid	Sample Depth:
Lab Sample Id: 7683989-1-BLK	Date Collected:	Date Received:
Analytical Method: TPH by SW8015 Mod		Prep Method: 1005
Analyst: ISU	% Moist:	Tech: ISU
Seq Number: 3098318	Date Prep: 08.12.2019 09:15	
	Prep seq: 7683989	

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	08.12.2019 13:33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<10.0	50.0	10.0	mg/kg	08.12.2019 13:33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<10.0	50.0	10.0	mg/kg	08.12.2019 13:33	U	1
Total TPH	PHC635	<10.0		10.0	mg/kg	08.12.2019 13:33	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	80	70 - 135	%		
o-Terphenyl	87	70 - 135	%		



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: Todd 15 N Tie In

Work Orders : 632952

Project ID:

Lab Batch #: 3097577

Sample: 7683570-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.05.2019 20:56

SURROGATE RECOVERY STUDY

BTEX by SW 8260C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0488	0.0500	98	73-132	
1,2-Dichloroethane-D4	0.0431	0.0500	86	73-124	
Toluene-D8	0.0518	0.0500	104	69-124	
4-Bromofluorobenzene	0.0497	0.0500	99	58-152	

Lab Batch #: 3097577

Sample: 7683570-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.05.2019 21:16

SURROGATE RECOVERY STUDY

BTEX by SW 8260C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0475	0.0500	95	73-132	
1,2-Dichloroethane-D4	0.0426	0.0500	85	73-124	
Toluene-D8	0.0525	0.0500	105	69-124	
4-Bromofluorobenzene	0.0493	0.0500	99	58-152	

Lab Batch #: 3097577

Sample: 632951-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.05.2019 21:35

SURROGATE RECOVERY STUDY

BTEX by SW 8260C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0483	0.0500	97	73-132	
1,2-Dichloroethane-D4	0.0431	0.0500	86	73-124	
Toluene-D8	0.0525	0.0500	105	69-124	
4-Bromofluorobenzene	0.0491	0.0500	98	58-152	

Lab Batch #: 3097577

Sample: 632951-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.05.2019 21:55

SURROGATE RECOVERY STUDY

BTEX by SW 8260C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0493	0.0500	99	73-132	
1,2-Dichloroethane-D4	0.0427	0.0500	85	73-124	
Toluene-D8	0.0529	0.0500	106	69-124	
4-Bromofluorobenzene	0.0498	0.0500	100	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: Todd 15 N Tie In

Work Orders : 632952

Project ID:

Lab Batch #: 3097577

Sample: 7683570-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.05.2019 22:53

SURROGATE RECOVERY STUDY

BTEX by SW 8260C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0479	0.0500	96	73-132	
1,2-Dichloroethane-D4	0.0474	0.0500	95	73-124	
Toluene-D8	0.0505	0.0500	101	69-124	
4-Bromofluorobenzene	0.0430	0.0500	86	58-152	

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	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
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	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
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	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
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: Todd 15 N Tie In

Work Orders : 632952

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	

Lab Batch #: 3098318

Sample: 7683989-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.12.2019 13:33

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.9	100	80	70-135	
o-Terphenyl	43.7	50.0	87	70-135	

Lab Batch #: 3098318

Sample: 7683989-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.12.2019 13:52

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.5	100	92	70-135	
o-Terphenyl	43.8	50.0	88	70-135	

Lab Batch #: 3098318

Sample: 7683989-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.12.2019 14:11

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.9	100	92	70-135	
o-Terphenyl	45.2	50.0	90	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: Todd 15 N Tie In

Work Orders : 632952

Project ID:

Lab Batch #: 3098318

Sample: 632952-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.12.2019 14:49

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.4	99.7	85	70-135	
o-Terphenyl	41.6	49.9	83	70-135	

Lab Batch #: 3098318

Sample: 632952-003 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.12.2019 15:08

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.4	99.2	84	70-135	
o-Terphenyl	41.6	49.6	84	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: Todd 15 N Tie In

Work Order #: 632952

Analyst: HOP

Lab Batch ID: 3097577

Units: mg/kg

Date Prepared: 08.05.2019

Sample: 7683570-1-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	0.0505	101	0.0500	0.0478	96	5	62-132	25	
Toluene	<0.00100	0.0500	0.0532	106	0.0500	0.0490	98	8	66-124	25	
Ethylbenzene	<0.000336	0.0500	0.0553	111	0.0500	0.0502	100	10	71-134	25	
m,p-Xylenes	<0.000437	0.100	0.111	111	0.100	0.102	102	8	69-128	25	
o-Xylene	<0.000985	0.0500	0.0541	108	0.0500	0.0516	103	5	72-131	25	

Analyst: JYM

Lab Batch ID: 3097696

Units: mg/kg

Date Prepared: 08.06.2019

Sample: 7683592-1-BKS

Batch #: 1

Date Analyzed: 08.06.2019

Matrix: Solid

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	105	105	100	105	105	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: Todd 15 N Tie In

Work Order #: 632952

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	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)	<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	

Analyst: ISU

Date Prepared: 08.12.2019

Date Analyzed: 08.12.2019

Lab Batch ID: 3098318

Sample: 7683989-1-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)	<10.0	1000	970	97	1000	964	96	1	70-135	35	
Diesel Range Organics (DRO)	<10.0	1000	916	92	1000	922	92	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 / MSD Recoveries

Project Name: Todd 15 N Tie In

Work Order #: 632952

Lab Batch ID: 3097577

Date Analyzed: 08.05.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 632951-001 S

Batch #: 1 Matrix: Soil

Date Prepared: 08.05.2019

Analyst: HOP

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 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	<0.000207	0.0500	0.0420	84	0.0496	0.0418	84	0	62-132	25	
Toluene	<0.00100	0.0500	0.0435	87	0.0496	0.0428	86	2	66-124	25	
Ethylbenzene	<0.000336	0.0500	0.0442	88	0.0496	0.0444	90	0	71-134	25	
m,p-Xylenes	<0.000437	0.100	0.0881	88	0.0992	0.0883	89	0	69-128	25	
o-Xylene	<0.000985	0.0500	0.0448	90	0.0496	0.0449	91	0	72-131	25	

Lab Batch ID: 3097696

QC- Sample ID: 632951-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08.06.2019

Date Prepared: 08.06.2019

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	10.5	99.6	106	96	100	107	97	1	80-120	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: Todd 15 N Tie In

Work Order #: 632952

Lab Batch ID: 3097696

Date Analyzed: 08.06.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 632951-002 S

Batch #: 1 Matrix: Soil

Date Prepared: 08.06.2019

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	14.0	100	113	99	100	113	99	0	80-120	20	

Lab Batch ID: 3098313

QC- Sample ID: 632906-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08.09.2019

Date Prepared: 08.09.2019

Analyst: ISU

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)	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] = $100 \times (C-A) / B$
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: Todd 15 N Tie In

Work Order #: 632952

Lab Batch ID: 3098318

Date Analyzed: 08.12.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 632952-003 S

Batch #: 1 Matrix: Soil

Date Prepared: 08.12.2019

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)	<9.97	997	909	91	992	882	89	3	70-135	35	
Diesel Range Organics (DRO)	<9.97	997	882	88	992	863	87	2	70-135	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.



Chain of Custody

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland TX (432-704-5440) EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296

4400bs.NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-

Work Order No: 631552

Page of
www.xerco.com

Project Manager:	ZACH CORDER	Bill to: (if different)	
Company Name:	TASMANIAN GEOSCIENCES	Company Name:	FLINZ AARP
Address:	2620 W. MARLBOROUGH BLVD	Address:	90 AMBER GROVES
City, State ZIP:	HOBBS, NM 88240	City, State ZIP:	
Phone:	806-724-5943		7 CONDEGOTSMAN-SEO.COM

Project Name:	TODD LUTHER		Turn Around			
Project Number:			Routine	☐		
P.O. Number:			Rush:			
Sampler's Name:	BECKY RUFFIN		Due Date:			
SAMPLE RECEIPT	Temp Blank	Yes No	Wet bed	Yes No	Number of Containers	
	Temperature (°C)	03				
	Received Initial:	IR ID: HOU-069 C/F: +0.1				
	Cooler Custody Seals	Yes No	Yes No	Yes No		Temp 4.8 Corrected: 4.9
	Sample Custody Seals	Yes No	Yes No	Yes No		
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth		

[illegible]

Total	200.7 / 6010	200.8 / 6020:	8RCRA	13PPM	Texas	11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO ₂	Na	Sr	Tl	Sn	U	V	Zn
Circle Method(s) and Metal(s) to be analyzed																																		
TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U																																		
1631 / 245.1 / 7470 / 7471 : Hg																																		

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 to Xenco. 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 shipment charge of \$75.00 will be applied to each order and a charge of \$5 for each sample submitted to Xenco, but not material. These terms will be enforceable retroactively. Xenco, its affiliates and subcontractors shall not be liable for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco.

Relinquished by (Signature)	Received by (Signature)	Date/Time	Relinquished by (Signature)	Received by (Signature)	Date/Time
Buck	Stephane Rojas	8-1-19	Stephane Rojas	Stephane Rojas	8-1-19
					8/3/19 9:30

LABORATORIES
4143 GREENBRIAR DR

STAFFORD TX 77477

(281) 240-4200
INV:
PO:

REF:

DEPT:



FedEx
Express



551C2/F551/104

310111806050100

FRI - 02 AUG 3:00P
STANDARD OVERNIGHT

TRK# 4705 2521 4095
0201

AB SGRA

77477
TX-US IAH

Part # 156148-434 RT EXP 03/19





Analytical Report 633722

for

Tasman Geosciences, LLC

Project Manager: Zach Conder

Todd 15 N Fed Tie In

08.19.2019

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)



08.19.2019

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

Reference: XENCO Report No(s): **633722**

Todd 15 N Fed Tie In

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) 633722. 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. 633722 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 633722

Tasman Geosciences, LLC, Hobbs, NM

Todd 15 N Fed Tie In

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
WSW- 12N @6'	S	08.09.2019 00:00	6 ft	633722-001



CASE NARRATIVE

Client Name: *Tasman Geosciences, LLC*

Project Name: *Todd 15 N Fed Tie In*

Project ID:

Work Order Number(s): 633722

Report Date: 08.19.2019

Date Received: 08.10.2019

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:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3098520 BTEX by SW 8260C

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

Lab Sample ID 633722-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Ethylbenzene, o-Xylene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 633722-001.

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

Batch: LBA-3098797 TPH by SW8015 Mod

Lab Sample ID 633722-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Diesel Range Organics (DRO) recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 633722-001.

The Laboratory Control Sample for Diesel Range Organics (DRO) is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analytical Results

633722

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Fed Tie In

Sample Id: WSW- 12N @6'	Matrix: Soil	Sample Depth: 6 ft
Lab Sample Id: 633722-001	Date Collected: 08.09.2019 00:00	Date Received: 08.10.2019 09:30
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Analyst: JYM	% Moist: 4.05	Tech: JYM
Seq Number: 3098462	Date Prep: 08.13.2019 09:55	
	Prep seq: 7684086	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	9.88	9.96	0.353	mg/kg	08.13.2019 12:58	J	1

Analytical Method: TPH by SW8015 Mod		Prep Method: 1005
Analyst: ISU	% Moist: 4.01	Tech: ISU
Seq Number: 3098797	Date Prep: 08.15.2019 16:39	
	Prep seq: 7684305	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	15.5	51.9	10.4	mg/kg	08.16.2019 12:51	J	1
Diesel Range Organics (DRO)	C10C28DRO	967	51.9	10.4	mg/kg	08.16.2019 12:51		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	139	51.9	10.4	mg/kg	08.16.2019 12:51		1
Total TPH	PHC635	1120		10.4	mg/kg	08.16.2019 12:51		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	124	70 - 135	%		
o-Terphenyl	97	70 - 135	%		



Certificate of Analytical Results

633722

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Fed Tie In

Sample Id: **WSW- 12N @6'**

Matrix: Soil

Sample Depth: 6 ft

Lab Sample Id: 633722-001

Date Collected: 08.09.2019 00:00

Date Received: 08.10.2019 09:30

Analytical Method: BTEX by SW 8260C

Prep Method: 5030B

Analyst: HOP

% Moist: 4.01

Tech: HOP

Seq Number: 3098520

Date Prep: 08.14.2019 12:00

Prep seq: 7684230

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	0.000868	0.00105	0.000216	mg/kg	08.14.2019 14:47	J	1
Toluene	108-88-3	<0.00105	0.00523	0.00105	mg/kg	08.14.2019 14:47	U	1
Ethylbenzene	100-41-4	<0.000351	0.00105	0.000351	mg/kg	08.14.2019 14:47	UX	1
m,p-Xylenes	179601-23-1	<0.000457	0.00209	0.000457	mg/kg	08.14.2019 14:47	U	1
o-Xylene	95-47-6	<0.00103	0.00105	0.00103	mg/kg	08.14.2019 14:47	UX	1
Total Xylenes	1330-20-7	<0.000457		0.000457	mg/kg	08.14.2019 14:47	U	
Total BTEX		0.000868		0.000216	mg/kg	08.14.2019 14:47	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	103	73 - 132	%		
1,2-Dichloroethane-D4	94	73 - 124	%		
Toluene-D8	96	69 - 124	%		
4-Bromofluorobenzene	87	58 - 152	%		



Certificate of Analytical Results

633722

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 N Fed Tie In

Sample Id: 7684086-1-BLK	Matrix: Solid	Sample Depth:
Lab Sample Id: 7684086-1-BLK	Date Collected:	Date Received:
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Analyst: JYM	% Moist:	Tech: JYM
Seq Number: 3098462	Date Prep: 08.13.2019 09:55	
	Prep seq: 7684086	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.354	10.0	0.354	mg/kg	08.13.2019 08:18	U	1

Sample Id: 7684230-1-BLK	Matrix: Solid	Sample Depth:
Lab Sample Id: 7684230-1-BLK	Date Collected:	Date Received:
Analytical Method: BTEX by SW 8260C		Prep Method: 5030B
Analyst: HOP	% Moist:	Tech: HOP
Seq Number: 3098520	Date Prep: 08.14.2019 12:00	
	Prep seq: 7684230	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000207	0.00100	0.000207	mg/kg	08.14.2019 14:27	U	1
Toluene	108-88-3	<0.00100	0.00500	0.00100	mg/kg	08.14.2019 14:27	U	1
Ethylbenzene	100-41-4	<0.000336	0.00100	0.000336	mg/kg	08.14.2019 14:27	U	1
m,p-Xylenes	179601-23-1	<0.000437	0.00200	0.000437	mg/kg	08.14.2019 14:27	U	1
o-Xylene	95-47-6	<0.000985	0.00100	0.000985	mg/kg	08.14.2019 14:27	U	1
Total Xylenes	1330-20-7	<0.000437		0.000437	mg/kg	08.14.2019 14:27	U	
Total BTEX		<0.000207		0.000207	mg/kg	08.14.2019 14:27	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	99	73 - 132	%		
1,2-Dichloroethane-D4	87	73 - 124	%		
Toluene-D8	100	69 - 124	%		
4-Bromofluorobenzene	86	58 - 152	%		



Certificate of Analytical Results

633722

Tasman Geosciences, LLC, Hobbs, NM

Todd 15 N Fed Tie In

Sample Id: **7684305-1-BLK**

Matrix: Solid

Sample Depth:

Lab Sample Id: 7684305-1-BLK

Date Collected:

Date Received:

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst: ISU

% Moist:

Tech: ISU

Seq Number: 3098797

Date Prep: 08.15.2019 16:30

Prep seq: 7684305

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	08.15.2019 17:54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<10.0	50.0	10.0	mg/kg	08.15.2019 17:54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<10.0	50.0	10.0	mg/kg	08.15.2019 17:54	U	1
Total TPH	PHC635	<10.0		10.0	mg/kg	08.15.2019 17:54	U	

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



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: Todd 15 N Fed Tie In

Work Orders : 633722

Project ID:

Lab Batch #: 3098520

Sample: 7684230-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.14.2019 10:43

SURROGATE RECOVERY STUDY

BTEX by SW 8260C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0502	0.0500	100	73-132	
1,2-Dichloroethane-D4	0.0440	0.0500	88	73-124	
Toluene-D8	0.0525	0.0500	105	69-124	
4-Bromofluorobenzene	0.0491	0.0500	98	58-152	

Lab Batch #: 3098520

Sample: 7684230-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.14.2019 11:02

SURROGATE RECOVERY STUDY

BTEX by SW 8260C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0485	0.0500	97	73-132	
1,2-Dichloroethane-D4	0.0424	0.0500	85	73-124	
Toluene-D8	0.0511	0.0500	102	69-124	
4-Bromofluorobenzene	0.0515	0.0500	103	58-152	

Lab Batch #: 3098520

Sample: 633722-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.14.2019 13:08

SURROGATE RECOVERY STUDY

BTEX by SW 8260C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0495	0.0500	99	73-132	
1,2-Dichloroethane-D4	0.0430	0.0500	86	73-124	
Toluene-D8	0.0513	0.0500	103	69-124	
4-Bromofluorobenzene	0.0503	0.0500	101	58-152	

Lab Batch #: 3098520

Sample: 633722-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.14.2019 13:28

SURROGATE RECOVERY STUDY

BTEX by SW 8260C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0500	0.0500	100	73-132	
1,2-Dichloroethane-D4	0.0432	0.0500	86	73-124	
Toluene-D8	0.0492	0.0500	98	69-124	
4-Bromofluorobenzene	0.0476	0.0500	95	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: Todd 15 N Fed Tie In

Work Orders : 633722

Project ID:

Lab Batch #: 3098520

Sample: 7684230-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.14.2019 14:27

SURROGATE RECOVERY STUDY

BTEX by SW 8260C	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
Dibromofluoromethane	0.0493	0.0500	99	73-132	
1,2-Dichloroethane-D4	0.0435	0.0500	87	73-124	
Toluene-D8	0.0502	0.0500	100	69-124	
4-Bromofluorobenzene	0.0432	0.0500	86	58-152	

Lab Batch #: 3098797

Sample: 7684305-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.15.2019 17:54

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	88.1	100	88	70-135	
o-Terphenyl	44.0	50.0	88	70-135	

Lab Batch #: 3098797

Sample: 7684305-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.15.2019 18:14

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	91.2	100	91	70-135	
o-Terphenyl	42.7	50.0	85	70-135	

Lab Batch #: 3098797

Sample: 7684305-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.15.2019 18:33

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	95.0	100	95	70-135	
o-Terphenyl	43.0	50.0	86	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: Todd 15 N Fed Tie In

Work Orders : 633722

Project ID:

Lab Batch #: 3098797

Sample: 633722-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.15.2019 19:31

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.5	99.3	95	70-135	
o-Terphenyl	37.6	49.7	76	70-135	

Lab Batch #: 3098797

Sample: 633722-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.16.2019 12:32

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.6	99.6	87	70-135	
o-Terphenyl	35.1	49.8	70	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: Todd 15 N Fed Tie In

Work Order #: 633722

Analyst: HOP

Date Prepared: 08.14.2019

Project ID:

Date Analyzed: 08.14.2019

Lab Batch ID: 3098520

Sample: 7684230-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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	0.0521	104	0.0500	0.0507	101	3	62-132	25	
Toluene	<0.00100	0.0500	0.0507	101	0.0500	0.0526	105	4	66-124	25	
Ethylbenzene	<0.000336	0.0500	0.0537	107	0.0500	0.0540	108	1	71-134	25	
m,p-Xylenes	<0.000437	0.100	0.109	109	0.100	0.110	110	1	69-128	25	
o-Xylene	<0.000985	0.0500	0.0561	112	0.0500	0.0543	109	3	72-131	25	

Analyst: JYM

Date Prepared: 08.13.2019

Date Analyzed: 08.13.2019

Lab Batch ID: 3098462

Sample: 7684086-1-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	102	102	100	102	102	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: Todd 15 N Fed Tie In

Work Order #: 633722

Analyst: ISU

Date Prepared: 08.15.2019

Project ID:

Date Analyzed: 08.15.2019

Lab Batch ID: 3098797

Sample: 7684305-1-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)	<10.0	1000	915	92	1000	942	94	3	70-135	35	
Diesel Range Organics (DRO)	<10.0	1000	855	86	1000	868	87	2	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 / MSD Recoveries

Project Name: Todd 15 N Fed Tie In

Work Order #: 633722

Lab Batch ID: 3098520

Date Analyzed: 08.14.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 633722-001 S

Date Prepared: 08.14.2019

Batch #: 1 Matrix: Soil

Analyst: HOP

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 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	0.000868	0.0517	0.0449	85	0.0523	0.0439	82	2	62-132	25	
Toluene	<0.00103	0.0517	0.0431	83	0.0523	0.0397	76	8	66-124	25	
Ethylbenzene	<0.000347	0.0517	0.0422	82	0.0523	0.0359	69	16	71-134	25	X
m,p-Xylenes	<0.000451	0.103	0.0846	82	0.105	0.0722	69	16	69-128	25	
o-Xylene	<0.00102	0.0517	0.0394	76	0.0523	0.0360	69	9	72-131	25	X

Lab Batch ID: 3098462

Date Analyzed: 08.13.2019

Reporting Units: mg/kg

QC- Sample ID: 633511-001 S

Date Prepared: 08.13.2019

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	97.9	99.8	193	95	99.8	193	95	0	80-120	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: Todd 15 N Fed Tie In

Work Order #: 633722

Lab Batch ID: 3098462

Date Analyzed: 08.13.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 633714-001 S

Batch #: 1 Matrix: Soil

Date Prepared: 08.13.2019

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	45.2	99.6	144	99	100	145	100	1	80-120	20	

Lab Batch ID: 3098797

QC- Sample ID: 633722-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08.16.2019

Date Prepared: 08.15.2019

Analyst: ISU

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)	15.5	1040	910	86	1030	1020	98	11	70-135	35	
Diesel Range Organics (DRO)	967	1040	1580	59	1030	1840	85	15	70-135	35	X

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.



Method Duplicate

Project Name: Todd 15 N Fed Tie In

Work Order #: 633722

Lab Batch #: 3098354

Date Analyzed: 08.13.2019 14:15

QC- Sample ID: 633722-001 D

Reporting Units: %

Date Prepared: 08.13.2019

Batch #: 1

Project ID:

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	4.01	4.22	5	10	

Lab Batch #: 3098354

Date Analyzed: 08.13.2019 14:15

QC- Sample ID: 633754-009 D

Reporting Units: %

Date Prepared: 08.13.2019

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	9.71	8.79	10	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



Chain of Custody

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334
Midland, TX (432-704-5440) El Paso, TX (915)585-3443 Lubbock, TX (806)794-1296
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813)332-7550
Hobbs, NM (575-382-7550)

Work Order No: 6372-2

Work Order Comments

Program: UST/ST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

State of Project:

Reporting: Level II ☐ Level III ☐ PST/AUST ☐ TRRP ☐ Level IV ☐

Deliverables: EDD ☐ ADaPT ☐ Other:

Project Manager:	ZACH CANNON	Est. No. (if different)	
Company Name:	TRACMAN GEOSCIENCES	Company Name:	FLAMING ARBP
Address:	2620 W. MARLBOROUGH BLVD	Address:	920 AMBER GROVES
City, State ZIP:	HOBBS, NM 88240	City, State ZIP:	
Phone:	806-724-5943	Est. No.	720000075-REV. 06-01

[illegible][illegible]

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 \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not realized. These terms will be enforced unless previously associated.

Requisitioned by (Signature)	Received by (Signature)	Date/Time	Requisitioned by (Signature)	Received by (Signature)	Date/Time
1. Beck	Buttany Cox	2/9/92 5.52	Buttany Cox	For	
3. For		8/10/99 9.30 ¹⁶			

156148-434 FIT EXP 03/19 ::

TX-US IAH 77477

SGRA X0

TRK# 4705 2521 4809 0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

J1811006050Luv

 **FedEx** Express

REF: STAFFORD TX 77477
DEPT: (281) 240-4200

INV: XENCO LABORATORIES
PO: 4143 GREENBRIAR DR
HOBBS, NM 88240
UNITED STATES US

551C2/F551/104C

BILL RECIPIENT
DIMS: 16x13x12 IN
1000 N. DALLAS

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tasman Geosciences, LLC

Date/ Time Received: 08.10.2019 09.30.00 AM

Work Order #: 633722

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)?	3.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	No
#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
#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: 08.12.2019

Checklist reviewed by:


John Builes

Date: 08.12.2019



Analytical Report 635230

for

Tasman Geosciences, LLC

Project Manager: Z Conder

Todd 15 B Tie 1N

09.03.2019

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)



09.03.2019

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

Reference: XENCO Report No(s): **635230**

Todd 15 B Tie 1N

Project Address: County, NM

Z 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) 635230. 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. 635230 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 635230****Tasman Geosciences, LLC, Hobbs, NM**

Todd 15 B Tie 1N

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL-23-b @15'	S	08.26.2019 00:00	15 ft	635230-001
WSW-12N-b @ 6'	S	08.26.2019 00:00	6 ft	635230-002



CASE NARRATIVE

Client Name: *Tasman Geosciences, LLC*

Project Name: *Todd 15 B Tie 1N*

Project ID:

Work Order Number(s): 635230

Report Date: 09.03.2019

Date Received: 08.27.2019

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-3100184 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: 635230-001 SD.



Certificate of Analytical Results

635230

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 B Tie 1N

Sample Id: **FL-23-b @15'** Matrix: Soil Sample Depth: 15 ft
Lab Sample Id: 635230-001 Date Collected: 08.26.2019 00:00 Date Received: 08.27.2019 11:30
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3100250 Date Prep: 08.30.2019 12:30
Prep seq: 7685378

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	95.1	5.01	0.860	mg/kg	08.30.2019 16:31		1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015
Analyst: ARM % Moist: Tech: ARM
Seq Number: 3099899 Date Prep: 08.27.2019 14:08
Prep seq: 7685087

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.1	15.0	mg/kg	08.28.2019 01:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	155	50.1	25.1	mg/kg	08.28.2019 01:08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	50.1	25.1	mg/kg	08.28.2019 01:08	U	1
Total TPH	PHC635	155		15.0	mg/kg	08.28.2019 01:08		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	93	70 - 135	%		
o-Terphenyl	95	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B
Analyst: KTL % Moist: Tech: KTL
Seq Number: 3100184 Date Prep: 08.29.2019 10:00
Prep seq: 7685218

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	08.29.2019 08:55	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	08.29.2019 08:55	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	08.29.2019 08:55	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	08.29.2019 08:55	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	08.29.2019 08:55	U	1
Xylenes, Total	1330-20-7	<0.000343		0.000343	mg/kg	08.29.2019 08:55	U	
Total BTEX		<0.000343		0.000343	mg/kg	08.29.2019 08:55	U	

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



Certificate of Analytical Results

635230

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 B Tie 1N

Sample Id: WSW-12N-b @ 6'	Matrix: Soil	Sample Depth: 6 ft
Lab Sample Id: 635230-002	Date Collected: 08.26.2019 00:00	Date Received: 08.27.2019 11:30
Analytical Method: Inorganic Anions by EPA 300/300.1		Prep Method: E300P
Analyst: CHE	% Moist:	Tech: CHE
Seq Number: 3100250	Date Prep: 08.30.2019 12:30	
	Prep seq: 7685378	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	3.65	4.98	0.855	mg/kg	08.30.2019 16:37	J	1

Analytical Method: TPH by SW8015 Mod		Prep Method: 8015
Analyst: ARM	% Moist:	Tech: ARM
Seq Number: 3099899	Date Prep: 08.27.2019 14:08	
	Prep seq: 7685087	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.1	50.2	15.1	mg/kg	08.28.2019 01:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	50.2	25.1	mg/kg	08.28.2019 01:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	50.2	25.1	mg/kg	08.28.2019 01:28	U	1
Total TPH	PHC635	<15.1		15.1	mg/kg	08.28.2019 01:28	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	83	70 - 135	%		

Analytical Method: BTEX by EPA 8021		Prep Method: 5030B
Analyst: KTL	% Moist:	Tech: KTL
Seq Number: 3100184	Date Prep: 08.29.2019 10:00	
	Prep seq: 7685218	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	08.29.2019 09:15	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	08.29.2019 09:15	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	08.29.2019 09:15	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	08.29.2019 09:15	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	08.29.2019 09:15	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	08.29.2019 09:15	U	
Total BTEX		<0.000342		0.000342	mg/kg	08.29.2019 09:15	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	123	70 - 130	%		



Certificate of Analytical Results

635230

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 B Tie 1N

Sample Id: 7685087-1-BLK	Matrix: Solid	Sample Depth:
Lab Sample Id: 7685087-1-BLK	Date Collected:	Date Received:
Analytical Method: TPH by SW8015 Mod		Prep Method: 8015
Analyst: ARM	% Moist:	Tech: ARM
Seq Number: 3099899	Date Prep: 08.27.2019 14:08	
	Prep seq: 7685087	

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	08.27.2019 19:38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	50.0	25.0	mg/kg	08.27.2019 19:38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	50.0	25.0	mg/kg	08.27.2019 19:38	U	1
Total TPH	PHC635	<15.0		15.0	mg/kg	08.27.2019 19:38	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	100	70 - 135	%		
o-Terphenyl	103	70 - 135	%		

Sample Id: 7685218-1-BLK	Matrix: Solid	Sample Depth:
Lab Sample Id: 7685218-1-BLK	Date Collected:	Date Received:
Analytical Method: BTEX by EPA 8021		Prep Method: 5030B
Analyst: KTL	% Moist:	Tech: KTL
Seq Number: 3100184	Date Prep: 08.29.2019 10:00	
	Prep seq: 7685218	

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	08.29.2019 08:35	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	08.29.2019 08:35	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	08.29.2019 08:35	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	08.29.2019 08:35	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	08.29.2019 08:35	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	08.29.2019 08:35	U	
Total BTEX		<0.000344		0.000344	mg/kg	08.29.2019 08:35	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	93	70 - 130	%		
4-Bromofluorobenzene	111	70 - 130	%		



Certificate of Analytical Results

635230

Tasman Geosciences, LLC, Hobbs, NM
Todd 15 B Tie 1N

Sample Id: **7685378-1-BLK** Matrix: Solid Sample Depth:
Lab Sample Id: 7685378-1-BLK Date Collected: Date Received:
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: CHE % Moist: Tech: CHE
Seq Number: 3100250 Date Prep: 08.30.2019 12:30
Prep seq: 7685378

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	08.30.2019 13:03	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: Todd 15 B Tie 1N

Work Orders : 635230

Project ID:

Lab Batch #: 3100184

Sample: 7685218-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.29.2019 06:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0285	0.0300	95	70-130	
4-Bromofluorobenzene	0.0358	0.0300	119	70-130	

Lab Batch #: 3100184

Sample: 7685218-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.29.2019 07:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0278	0.0300	93	70-130	
4-Bromofluorobenzene	0.0342	0.0300	114	70-130	

Lab Batch #: 3100184

Sample: 635230-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.29.2019 07:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0285	0.0300	95	70-130	
4-Bromofluorobenzene	0.0390	0.0300	130	70-130	

Lab Batch #: 3100184

Sample: 635230-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.29.2019 07:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0298	0.0300	99	70-130	
4-Bromofluorobenzene	0.0408	0.0300	136	70-130	**

Lab Batch #: 3100184

Sample: 7685218-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.29.2019 08:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0279	0.0300	93	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: Todd 15 B Tie 1N

Work Orders : 635230

Project ID:

Lab Batch #: 3099899

Sample: 7685087-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.27.2019 19:38

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	51.4	50.0	103	70-135	

Lab Batch #: 3099899

Sample: 7685087-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.27.2019 19:57

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	62.4	50.0	125	70-135	

Lab Batch #: 3099899

Sample: 7685087-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08.27.2019 20:17

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	59.8	50.0	120	70-135	

Lab Batch #: 3099899

Sample: 635141-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.27.2019 20:55

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	50.3	50.2	100	70-135	

Lab Batch #: 3099899

Sample: 635141-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08.27.2019 21:15

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	48.8	50.2	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.



BS / BSD Recoveries

Project Name: Todd 15 B Tie 1N

Work Order #: 635230

Analyst: KTL

Lab Batch ID: 3100184

Units: mg/kg

Date Prepared: 08.29.2019

Sample: 7685218-1-BKS

Batch #: 1

Project ID:

Date Analyzed: 08.29.2019

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	0.0996	100	0.100	0.0944	94	5	70-130	35	
Toluene	<0.000456	0.100	0.0996	100	0.100	0.0939	94	6	70-130	35	
Ethylbenzene	<0.000565	0.100	0.116	116	0.100	0.112	112	4	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.238	119	0.200	0.227	114	5	70-130	35	
o-Xylene	<0.000344	0.100	0.115	115	0.100	0.109	109	5	70-130	35	

Analyst: CHE

Lab Batch ID: 3100250

Units: mg/kg

Date Prepared: 08.30.2019

Sample: 7685378-1-BKS

Batch #: 1

Date Analyzed: 08.30.2019

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	230	92	250	229	92	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: Todd 15 B Tie 1N

Work Order #: 635230

Analyst: ARM

Date Prepared: 08.27.2019

Project ID:

Date Analyzed: 08.27.2019

Lab Batch ID: 3099899

Sample: 7685087-1-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	985	99	1000	1010	101	3	70-135	20	
Diesel Range Organics (DRO)	<25.0	1000	1010	101	1000	1050	105	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 / MSD Recoveries

Project Name: Todd 15 B Tie 1N

Work Order #: 635230

Lab Batch ID: 3100184

Date Analyzed: 08.29.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 635230-001 S

Batch #: 1 Matrix: Soil

Date Prepared: 08.29.2019

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	<0.000384	0.0998	0.0943	94	0.0994	0.0883	89	7	70-130	35	
Toluene	<0.000455	0.0998	0.0938	94	0.0994	0.0819	82	14	70-130	35	
Ethylbenzene	<0.000564	0.0998	0.107	107	0.0994	0.0816	82	27	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.221	111	0.199	0.164	82	30	70-130	35	
o-Xylene	<0.000344	0.0998	0.105	105	0.0994	0.0821	83	24	70-130	35	

Lab Batch ID: 3100250

QC- Sample ID: 635619-006 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08.30.2019

Date Prepared: 08.30.2019

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	56.0	249	299	98	249	299	98	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: Todd 15 B Tie 1N

Work Order #: 635230

Lab Batch ID: 3100250

Date Analyzed: 08.30.2019

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 635631-001 S

Batch #: 1 Matrix: Soil

Date Prepared: 08.30.2019

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	71.7	249	316	98	249	316	98	0	90-110	20	

Lab Batch ID: 3099899

QC- Sample ID: 635141-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08.27.2019

Date Prepared: 08.27.2019

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)	<15.0	1000	953	95	1000	945	95	1	70-135	20	
Diesel Range Organics (DRO)	<25.1	1000	868	87	1000	862	86	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.

Page 1 Of 1

San Antonio, Texas (210-509-3334)

Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

Final 1.000



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tasman Geosciences, LLC

Date/ Time Received: 08.27.2019 11.30.00 AM

Work Order #: 635230

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)?	1.2
#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: 08.27.2019

Checklist reviewed by:



John Builes

Date: 08.29.2019

Analytical Report 630329

for
Tasman Geosciences, LLC

Project Manager: Zach Conder

Todd 15N Federal 14 Tie In

24-JUL-19

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)

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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24-JUL-19

Project Manager: **Zach Conder**

Tasman Geosciences, LLC

2620 W. Marland Blvd.

Hobbs, NM 88240

Reference: XENCO Report No(s): **630329**

Todd 15N Federal 14 Tie In

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) 630329. 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. 630329 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 that reads 'Jessica Kramer'.

Jessica Kramer

Project Assistant

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

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 630329



Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
W.C.	S	07-08-19 10:00		630329-001



CASE NARRATIVE

Client Name: *Tasman Geosciences, LLC*

Project Name: *Todd 15N Federal 14 Tie In*

Project ID:

Work Order Number(s): 630329

Report Date: 24-JUL-19

Date Received: 07/10/2019

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



Certificate of Analytical Results 630329



Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id: **W.C.** Matrix: Soil Date Received: 07.10.19 09.30
 Lab Sample Id: 630329-001 Date Collected: 07.08.19 10.00
 Analytical Method: Anions by EPA 300 Prep Method: E300P
 Tech: JYM % Moisture:
 Analyst: JYM Date Prep: 07.10.19 12.24 Basis: Wet Weight
 Seq Number: 3094960

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.7	10.0	0.354	mg/kg	07.10.19 17.01		1

Analytical Method: Reactive Cyanide by SW 846-Section 7.3.3.2 Prep Method: SW7.3.3.2P
 Tech: JCL % Moisture:
 Analyst: KCS Date Prep: 07.11.19 10.00 Basis: Wet Weight
 Seq Number: 3095087

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Cyanide	57-12-5	<0.0250	0.0250	0.0117	mg/kg	07.11.19 15.48	U+	5

Analytical Method: Flash Point by EPA 1010
 Tech: JCL % Moisture:
 Analyst: JCL Basis: Wet Weight
 Seq Number: 3095109

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Flash Point		>180			Deg F	07.11.19 11.36		1

Analytical Method: Paint Filter Liquids Test by EPA 9095
 Tech: YAV % Moisture:
 Analyst: YAV Basis: Wet Weight
 Seq Number: 3095368

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Paint Filter	PAIFILTER	Pass	1.0		PA/100mL	07.15.19 14.16		1



Certificate of Analytical Results 630329



Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id: **W.C.** Matrix: Soil Date Received: 07.10.19 09.30
 Lab Sample Id: 630329-001 Date Collected: 07.08.19 10.00
 Analytical Method: Reactive Sulfide by SW 846-Section 7.3.4.2 Prep Method: SW7.3.4.2P
 Tech: JCL % Moisture:
 Analyst: JCL Date Prep: 07.11.19 16.00 Basis: Wet Weight
 Seq Number: 3095106

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Reactive Sulfide	18496-25-8	<25.0	25.0	0.500	mg/kg	07.11.19 16.00	U	1

Analytical Method: Soil pH by EPA 9045C

Tech: KBU % Moisture:
 Analyst: KBU Basis: Wet Weight
 Seq Number: 3095015

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
pH	12408-02-5	8.21			SU	07.11.19 11.30		1
Temperature	TEMP	23.4			Deg C	07.11.19 11.30	+	1

Analytical Method: Gamma Spectroscopy by E901.1

Tech: CHE Prep Method: E901.1P
 Analyst: CHE % Moisture:
 Date Prep: 07.11.19 10.30 Basis: Wet Weight
 Seq Number: 3095113 SUB: T104704400-18-16

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Radium-226	13982-63-3	<2.26	2.26		pCi/g	07.11.19 10.27	U	1
Radium-228	15262-20-1	<0.895	0.895		pCi/g	07.11.19 10.27	U	1
Lead-210	14255-04-0	<2.52	2.52		pCi/g	07.11.19 10.27	U	1
Thorium-228	14274-82-9	<4.59	4.59		pCi/g	07.11.19 10.27	U	1
Bismuth-214	14733-03-0	<0.368	0.368		pCi/g	07.11.19 10.27	U	1
Pb-214	15067-28-4	<0.308	0.308		pCi/g	07.11.19 10.27	U	1
Total Activity		<0.0659	0.0659		pCi/g	07.11.19 10.27	U	1



Certificate of Analytical Results 630329



Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id: **W.C.**

Matrix: Soil

Date Received: 07.10.19 09.30

Lab Sample Id: 630329-001

Date Collected: 07.08.19 10.00

Analytical Method: TPH by Texas1005

Prep Method: TX1005P

Tech: DRG

% Moisture:

Analyst: ISU

Date Prep: 07.11.19 12.21

Basis: Wet Weight

Seq Number: 3094990

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
C6-C12 Range Hydrocarbons	PHC612	224	49.8	16.5	mg/kg	07.11.19 15.21		1
C12-C28 Range Hydrocarbons	PHCG1228	2820	49.8	21.0	mg/kg	07.11.19 15.21		1
C28-C35 Range Hydrocarbons	PHCG2835	395	49.8	19.4	mg/kg	07.11.19 15.21		1
Total TPH	PHC635	3440	49.8	16.5	mg/kg	07.11.19 15.21		1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
o-Terphenyl	84-15-1	121	%	70-130	07.11.19 15.21			
1-Chlorooctane	111-85-3	117	%	70-130	07.11.19 15.21			



Certificate of Analytical Results 630329



Tasman Geosciences, LLC, Hobbs, NM

Todd 15N Federal 14 Tie In

Sample Id: **W.C.**
Lab Sample Id: 630329-001

Matrix: Soil
Date Collected: 07.08.19 10.00

Date Received: 07.10.19 09.30

Analytical Method: TCLP Mercury by EPA 7470A

Prep Method: SW7470P

Tech: MLI

% Moisture:

Analyst: ANJ

Date Prep: 07.12.19 09.20

Seq Number: 3095185

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Mercury	7439-97-6	<0.000100	0.000200	0.000100	mg/L	07.12.19 13.29	U	1

Analytical Method: TCLP Metals per ICP by SW846 6010B

Prep Method: SW3010A

Tech: AHI

% Moisture:

Analyst: DEP

Date Prep: 07.11.19 08.35

Seq Number: 3095164

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Arsenic	7440-38-2	<0.0500	0.0500	0.0168	mg/L	07.11.19 20.06	U	1
Barium	7440-39-3	1.27	0.0500	0.000700	mg/L	07.11.19 20.06		1
Cadmium	7440-43-9	<0.0250	0.0250	0.000656	mg/L	07.11.19 20.06	U	1
Chromium	7440-47-3	<0.0500	0.0500	0.00681	mg/L	07.11.19 20.06	U	1
Lead	7439-92-1	<0.0500	0.0500	0.00916	mg/L	07.11.19 20.06	U	1
Selenium	7782-49-2	<0.100	0.100	0.0278	mg/L	07.11.19 20.06	U	1
Silver	7440-22-4	<0.100	0.100	0.00802	mg/L	07.11.19 20.06	U	1

Analytical Method: TCLP BTEX by SW 8260B

Prep Method: SW5030B

Tech: KRP

% Moisture:

Analyst: KRP

Date Prep: 07.12.19 09.00

Seq Number: 3095211

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00250	0.00500	0.00250	mg/L	07.12.19 14.01	U	5
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
Dibromofluoromethane	1868-53-7	101	%	75-131	07.12.19 14.01			
1,2-Dichloroethane-D4	17060-07-0	91	%	63-144	07.12.19 14.01			
Toluene-D8	2037-26-5	101	%	80-117	07.12.19 14.01			
4-Bromofluorobenzene	460-00-4	97	%	74-124	07.12.19 14.01			

Certificate of Analytical Results 630329**Tasman Geosciences, LLC, Hobbs, NM**

Todd 15N Federal 14 Tie In

Sample Type: Soil	Sample Date: 07.08.2019
Lab ID#: 630329-001	Sample Time: 10:00
Project Name: Todd 15N Federal 14 Tie In	Receiving Date: 07.10.2019
Project #:	Analysis Date: 07.11.2019
Project Location:	Analysis Time: 10:27
Field Code: W.C.	

Analysis Description	Analysis Result pCi/G	Analysis Error +/- 2s	Analysis Result Bq/G	Analysis Error +/- 2s	Analysis Test Method	Analysis Technician
Radium-226	<2.26	N/A	<0.0836	N/A	E901.1	CHE
Radium-228	<0.895	N/A	<0.0331	N/A	E901.1	CHE
Lead-210	<2.52	N/A	<0.0934	N/A	E901.1	CHE
Thorium-228	<4.59	N/A	<0.170	N/A	E901.1	CHE
Bismuth-214	<0.368	N/A	<0.0136	N/A	E901.1	CHE
Pb-214	<0.308	N/A	<0.0114	N/A	E901.1	CHE
Total Activity	<0.0659	N/A	<0.00244	N/A	E901.1	CHE



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 **SQL** Sample 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 630329

Tasman Geosciences, LLC

Todd 15N Federal 14 Tie In

Analytical Method: Anions by EPA 300

Seq Number: 3094960

MB Sample Id: 7681713-1-BLK

Matrix: Solid

LCS Sample Id: 7681713-1-BKS

Prep Method: E300P

Date Prep: 07.10.19

LCSD Sample Id: 7681713-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.354	100	102	102	102	102	80-120	0	20	mg/kg	07.10.19 15:15	

Analytical Method: Anions by EPA 300

Seq Number: 3094960

Parent Sample Id: 629422-003

Matrix: Soil

MS Sample Id: 629422-003 S

Prep Method: E300P

Date Prep: 07.10.19

MSD Sample Id: 629422-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1070	99.6	1150	80	1150	80	80-120	0	20	mg/kg	07.10.19 15:42	

Analytical Method: Reactive Cyanide by SW 846-Section 7.3.3.2

Seq Number: 3095087

MB Sample Id: 7681826-1-BLK

Matrix: Solid

LCS Sample Id: 7681826-1-BKS

Prep Method: SW7.3.3.2P

Date Prep: 07.11.19

LCSD Sample Id: 7681826-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Cyanide	<0.0583	20.0	2.69	13	2.63	13	5-40	2	20	mg/kg	07.11.19 15:41	

Analytical Method: Reactive Cyanide by SW 846-Section 7.3.3.2

Seq Number: 3095087

Parent Sample Id: 630301-001

Matrix: Soil

MD Sample Id: 630301-001 D

Prep Method: SW7.3.3.2P

Date Prep: 07.11.19

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Cyanide	<0.0250	<0.0250	0	20	mg/kg	07.11.19 15:45	

Analytical Method: TCLP Mercury by EPA 7470A

Seq Number: 3095185

MB Sample Id: 7681899-1-BLK

Matrix: Water

LCS Sample Id: 7681899-1-BKS

Prep Method: SW7470P

Date Prep: 07.12.19

LCSD Sample Id: 7681899-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.000100	0.00200	0.00187	94	0.00189	95	80-120	1	20	mg/L	07.12.19 13:01	

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 630329

Tasman Geosciences, LLC

Todd 15N Federal 14 Tie In

Analytical Method: TCLP Mercury by EPA 7470A

Seq Number: 3095185

Matrix: Solid

Prep Method: SW7470P

Parent Sample Id: 630292-001

MS Sample Id: 630292-001 S

Date Prep: 07.12.19

MSD Sample Id: 630292-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Mercury	<0.000100	0.00200	0.00195	98	0.00197	99	75-125	1	20	mg/L	07.12.19 13:11	

Analytical Method: TCLP Metals per ICP by SW846 6010B

Seq Number: 3095164

Matrix: Water

Prep Method: SW3010A

MB Sample Id: 7681762-1-BLK

LCS Sample Id: 7681762-1-BKS

Date Prep: 07.11.19

LCSD Sample Id: 7681762-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	<0.00336	1.00	0.964	96	0.974	97	75-125	1	20	mg/L	07.11.19 19:58	
Barium	<0.000140	1.00	0.951	95	0.949	95	75-125	0	20	mg/L	07.11.19 19:58	
Cadmium	<0.000131	1.00	0.983	98	0.978	98	75-125	1	20	mg/L	07.11.19 19:58	
Chromium	<0.00136	1.00	1.00	100	1.00	100	75-125	0	20	mg/L	07.11.19 19:58	
Lead	<0.00183	1.00	1.01	101	1.01	101	75-125	0	20	mg/L	07.11.19 19:58	
Selenium	<0.00555	1.00	0.961	96	0.957	96	75-125	0	20	mg/L	07.11.19 19:58	
Silver	<0.00160	0.500	0.489	98	0.489	98	75-125	0	20	mg/L	07.11.19 19:58	

Analytical Method: TCLP Metals per ICP by SW846 6010B

Seq Number: 3095164

Matrix: Soil

Prep Method: SW3010A

Parent Sample Id: 630329-001

MS Sample Id: 630329-001 S

Date Prep: 07.11.19

MSD Sample Id: 630329-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Arsenic	0.0268	5.00	5.38	107	5.48	109	75-125	2	20	mg/L	07.11.19 20:10	
Barium	1.27	5.00	6.55	106	6.66	108	75-125	2	20	mg/L	07.11.19 20:10	
Cadmium	0.000855	5.00	5.53	111	5.54	111	75-125	0	20	mg/L	07.11.19 20:10	
Chromium	<0.00681	5.00	5.54	111	5.58	112	75-125	1	20	mg/L	07.11.19 20:10	
Lead	<0.00916	5.00	5.50	110	5.50	110	75-125	0	20	mg/L	07.11.19 20:10	
Selenium	<0.0278	5.00	5.57	111	5.59	112	75-125	0	20	mg/L	07.11.19 20:10	
Silver	<0.00802	2.50	2.77	111	2.77	111	75-125	0	20	mg/L	07.11.19 20:10	

Analytical Method: Flash Point by EPA 1010

Seq Number: 3095109

Matrix: Product

Parent Sample Id: 630218-001

MD Sample Id: 630218-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Flash Point	>180	>180	0	25	Deg F	07.11.19 11:23	

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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



QC Summary 630329

Tasman Geosciences, LLC

Todd 15N Federal 14 Tie In

Analytical Method: Paint Filter Liquids Test by EPA 9095

Seq Number: 3095368

Matrix: Soil

Parent Sample Id: 630329-001

MD Sample Id: 630329-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Paint Filter	Pass	Pass	0	20	PA/100mL	07.15.19 14:16	

Analytical Method: Reactive Sulfide by SW 846-Section 7.3.4.2

Seq Number: 3095106

Matrix: Solid

MB Sample Id: 3095106-1-BLK

LCS Sample Id: 3095106-1-BKS

Prep Method: SW7.3.4.2P

Date Prep: 07.11.19

LCSD Sample Id: 3095106-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Reactive Sulfide	<25.0	50.0	44.0	88	49.0	98	30-120	11	20	mg/kg	07.11.19 16:00	

Analytical Method: Reactive Sulfide by SW 846-Section 7.3.4.2

Seq Number: 3095106

Matrix: Soil

Parent Sample Id: 630301-001

MD Sample Id: 630301-001 D

Prep Method: SW7.3.4.2P

Date Prep: 07.11.19

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Reactive Sulfide	<25.0	<25.0	0	20	mg/kg	07.11.19 16:00	

Analytical Method: Soil pH by EPA 9045C

Seq Number: 3095015

Matrix: Product

Parent Sample Id: 630218-001

MD Sample Id: 630218-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
pH	7.22	7.22	0	20	SU	07.11.19 11:30	
Temperature	22.8	23.2	2	25	Deg C	07.11.19 11:30	

Analytical Method: TPH by Texas1005

Seq Number: 3094990

Matrix: Solid

MB Sample Id: 7681719-1-BLK

LCS Sample Id: 7681719-1-BKS

Prep Method: TX1005P

Date Prep: 07.10.19

LCSD Sample Id: 7681719-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C12 Range Hydrocarbons	<50.0	1000	1100	110	1120	112	75-125	2	20	mg/kg	07.10.19 18:54	
C12-C28 Range Hydrocarbons	<50.0	1000	1110	111	1120	112	75-125	1	20	mg/kg	07.10.19 18:54	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
o-Terphenyl	108		103		108		70-130	%	07.10.19 18:54
1-Chlorooctane	103		115		117		70-130	%	07.10.19 18:54

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 630329

Tasman Geosciences, LLC

Todd 15N Federal 14 Tie In

Analytical Method: TPH by Texas1005

Seq Number: 3094990

Parent Sample Id: 630220-001

Matrix: Soil

MS Sample Id: 630220-001 S

Prep Method: TX1005P

Date Prep: 07.10.19

MSD Sample Id: 630220-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C12 Range Hydrocarbons	<16.6	1000	1080	108	1100	110	75-125	2	20	mg/kg	07.10.19 22:56	
C12-C28 Range Hydrocarbons	21.2	1000	1110	109	1130	111	75-125	2	20	mg/kg	07.10.19 22:56	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
o-Terphenyl	98		102		70-130	%	07.10.19 22:56
1-Chlorooctane	111		115		70-130	%	07.10.19 22:56

Analytical Method: TCLP BTEX by SW 8260B

Seq Number: 3095211

MB Sample Id: 7681923-1-BLK

Matrix: Water

LCS Sample Id: 7681923-1-BKS

Prep Method: SW5030B

Date Prep: 07.12.19

LCSD Sample Id: 7681923-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00250	0.250	0.218	87	0.224	90	66-142	3	20	mg/L	07.12.19 09:51	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	100		107		106		75-131	%	07.12.19 09:51
1,2-Dichloroethane-D4	100		102		102		63-144	%	07.12.19 09:51
Toluene-D8	106		96		97		80-117	%	07.12.19 09:51
4-Bromofluorobenzene	101		100		98		74-124	%	07.12.19 09:51

Analytical Method: TCLP BTEX by SW 8260B

Seq Number: 3095211

Parent Sample Id: 630456-001

Matrix: Sludge

MS Sample Id: 630456-001 S

Prep Method: SW5030B

Date Prep: 07.12.19

MSD Sample Id: 630456-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.0250	2.50	2.26	90	2.16	86	66-142	5	20	mg/L	07.12.19 10:28	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	104		104		75-131	%	07.12.19 10:28
1,2-Dichloroethane-D4	108		99		63-144	%	07.12.19 10:28
Toluene-D8	98		98		80-117	%	07.12.19 10:28
4-Bromofluorobenzene	99		104		74-124	%	07.12.19 10:28

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. = $\text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

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

ORIGIN ID: H0BA (575) 392-7550

**
MAIL SERVICES ETC, LLC
4008 N GRIMESHOBBS, NM 88240
UNITED STATES USSHIP DATE: 09 JUL 19
ACTWGT: 14.00 LB MAN
CAD: 0909328/CAFE3211
DIMS: 17x16x11 IN

BILL RECIPIENT

TO XENCO LABORATORIES
XENCO LABORATORIES
4143 GREENBRIAR DR

STAFFORD TX 77477

(281) 240-4200

INV:

PO:

REF:

DEPT:

FedEx
Express

J181118060501uv

TRK#
0201 4705 2521 2493WED - 10 JUL 10:30A
PRIORITY OVERNIGHT

AB SGRA

77477
TX-US IAH

MT EXP 03/10 ::



Inter-Office Shipment

Page 1 of 1

IOS Number **43089**

Date/Time: 07/10/19 10:12

Created by: Heidi Mathews

Please send report to: John Builes

Lab# From: **Houston**

Delivery Priority:

Address: 4147 Greenbriar Dr.

Lab# To: **Midland**

Air Bill No.:

E-Mail: john.builes@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
630329-001	S	W.C.	07/08/19 10:00	E901.1	Gamma Spectroscopy by E901.1	07/16/19	01/04/20	JHB	TOTACTIVITY Y	

Inter Office Shipment or Sample Comments:

Relinquished By:

Handwritten signature of Heidi Mathews in black ink.

Heidi Mathews

Date Relinquished: 07/10/2019

Received By:

Handwritten signature of Brianna Teel in black ink.

Brianna Teel

Date Received: 07/11/2019 09:47

Cooler Temperature:



XENCO Laboratories



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 43089

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sent By: Heidi Mathews

Date Sent: 07/10/2019 10:12 AM

Received By: Brianna Teel

Date Received: 07/11/2019 09:47 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

Date: 07/11/2019



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: Tasman Geosciences, LLC

Date/ Time Received: 07/10/2019 09:30:00 AM

Work Order #: 630329

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)?	4.2
#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
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes sub NORM to Midland
#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:

Heidi Mathews

Date: 07/10/2019

Checklist reviewed by:

John Builes

Date: 07/12/2019

Plains Pipeline, LP
Todd 15N Federal 14 Tie In



Initial Release



Initial Release

Plains Pipeline, LP
Todd 15N Federal 14 Tie In



Initial Release



Excavated Area

Plains Pipeline, LP
Todd 15N Federal 14 Tie In



Excavated Area



Back Filled Excavation

Plains Pipeline, LP
Todd 15N Federal 14 Tie In



Back Filled Excavation

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	NDHR1915659759
District RP	1RP-5527
Facility ID	fDHR1915659632
Application ID	pDHR1915658052

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 32.2872449

Longitude -103.7428015

(NAD 83 in decimal degrees to 5 decimal places)

Site Name Todd 15N Federal 14 Tie In	Site Type Pipeline Tie In/Pig Trap
Date Release Discovered 5/16/2019	API# (if applicable)

Unit Letter	Section	Township	Range	County
I	23	23S	31E	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) 10 bbls	Volume Recovered (bbls) 0 bbls
☐ 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

During maintenance operations, the valve draining to the catch basin at the pig trap was not properly closed.

Form C-141

State of New Mexico
Oil Conservation Division

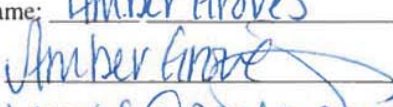
Page 2

Incident ID	NDHR1915659759
District RP	1RP-5527
Facility ID	fDHR1915659632
Application ID	pDHR1915658052

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? When and by what means (phone, email, etc)? Notification was given via e-mail to NMOCD and BLM on 5/17/2019 @ 10:44 AM.	

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 <u>not</u> 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: <u>Amber Groves</u>	Title: <u>Remediation Coordinator</u>
Signature: <u></u>	Date: <u>5/23/2019</u>
email: <u>algroves@paalp.com</u>	Telephone: <u>(575) 200-5517</u>
<u>OCD Only</u>	
Received by: <u>Dylan Rose-Coss</u>	Date: <u>06/05/2019</u>

Amber L Groves

From: Dray L Boiles
Sent: Thursday, May 23, 2019 10:23 AM
To: Amber L Groves
Subject: Todd 23 Spill Calculation

Length	Width	Depth		Volume Barrels
453	4	0.37	0.0154	10.324776

Dray Boiles

Maintenance Supervisor
Plains Pipeline L.P.
577 US HWY 385 N
Seminole, TX 79360
Office: (432)758-8139
Fax: (432)758-8150
Cellular: (806)215-1990
Email: dlboiles@paalp.com