Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	NDHR1918228923
District RP	1RP-5593
Facility ID	fDHR1918228769
Application ID	pDHR1918228414

Closure

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

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

Ihereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules ad regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which ay 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 ompliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially estore, 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: Amber Groves Date: 10/31/2019

email: algroves@paalp.com Telephone: 575-200-5517

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate ad remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the esponsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

October 24, 2019

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

Re: **Remediation Summary and Closure Report**
Former EK Queen Station Historical
API No. N/A
GPS: Latitude 32.726736 Longitude -103.631709
UL "O", Sec. 23, T18S, R33E
Lea County, NM
NMOCD Ref. No. 1RP-5593

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

RELEASE DETAILS					
Type of Release: Historical			**Volume of Release:**	Unknown	
			Volume Recovered:	Unknown	
Source of Release:	Historical		**Date of Release:**	Unknown	**Date of Discovery:** 6/20/19
Was Immediate Notice Given?	Yes		**If, YES, to Whom?**	NMOCD District I/NMSLO	
Was a Watercourse Reached?	No		**If YES, Volume Impacting the Watercourse:**		N/A
Surface Owner:	State		**Mineral Owner:**	State	
Describe Cause of Problem and Remedial Action Taken:					
Historical impact discovered during site reclamation activities.					

Site Characteristics Map is provided as Figure 1. 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	**51 - 75 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. If none were identified, 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**
51 feet-100 feet	Chloride***	EPA 300.0	10,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	TPH (GRO+DRO)	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

SITE DELINEATION

On May 28, 2019, Tasman personnel were on site to begin delineation activities. Four (4) verticals (HA-1, HA-2, HA-3, HA-4) were installed within the affected areas in an effort to determine the vertical extent of soil impacts. Verticals were advanced to depths of two (2) to three (3) feet (ft.) below ground surface (BGS). Soil samples were collected at one (1) ft. intervals and field screened for chlorides and volatile organic compounds. Collected soil samples were then submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX concentrations. Laboratory analytical results indicated chloride concentrations were below the NMOCD closure criteria in all of the submitted soil samples. Analytical results indicated TPH concentrations were below NMOCD closure criteria in each of the submitted soil samples with the exception of soil samples HA-2 @ 3' and HA-4 @ 3'. Analytical results indicated BTEX concentrations were below the NMOCD closure criteria in all of the submitted soil samples.

On June 13, 2019, Tasman revisited the site to complete delineation activities. The areas characterized by sample points HA-2 and HA-4 were advanced to a depth of ten (10) ft. and five (5) ft. BGS, respectively. Soil samples were collected at one (1) ft. intervals and field screened for chlorides and volatile organic compounds. Collected soil samples were then submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX concentrations. 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 8260C		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)	MRO C_{28}-C_{35} (mg/kg)	TPH C_6-C_{35} (mg/kg)	Chloride (mg/kg)
HA-1 SS	5/28/2019	Surf.	In-Situ	<0.000383	<0.000343	11.2	3,190	**3201.2**	514	**3715.2**	<0.853
HA-1 @ 1'	5/28/2019	1'	In-Situ	0.0565	0.0969	8.39	92.6	100.99	47.0	147.99	-
HA-1 @ 2'	5/28/2019	2'	In-Situ	0.0566	0.0717	8.21	122	130	64.5	194.71	2.26
HA-2 SS	5/28/2019	Surface	In-Situ	<0.000384	0.00325	40.4	7,660	**7,700.4**	2,180	**9,880.4**	1.88
HA-2 @ 1'	5/28/2019	1'	In-Situ	0.000557	0.00400	11.8	1,050	**1,061.8**	384	1,445.8	-
HA-2 @ 2'	5/28/2019	2'	In-Situ	<0.000382	0.00108	9.10	277	286.1	134	420.1	-
HA-2 @ 3'	5/28/2019	3'	In-Situ	<0.000387	<0.000346	9.02	908	917.02	347	1,264.02	<0.852
HA-2 @ 4'	6/13/2019	4'	In-Situ	<0.000193	<0.0000959	15.9	95.9	111.8	28.6	140.4	<0.865
HA-2 @ 5'	6/13/2019	5'	In-Situ	<0.000192	0.00263	133	1,890	**2,023**	102	2,125	-
HA-2 @ 6'	6/13/2019	6'	In-Situ	<0.000192	0.000529	300	3,360	**3,660**	190	**3,850**	-
HA-2 @ 7'	6/13/2019	7'	In-Situ	<0.000193	0.0119	223	3,150	**3,373**	204	**3,577**	-
HA-2 @ 8'	6/13/2019	8'	In-Situ	<0.000192	<0.0000955	10.2	435	445.2	523	968.2	-
HA-2 @ 9'	6/13/2019	9'	In-Situ	<0.000192	<0.0000955	<7.97	34.8	34.8	25.3	60.1	-
HA-2 @ 10'	6/13/2019	10'	In-Situ	<0.000193	<0.0000959	10.6	91.0	101.6	19.7	121.3	4.13
HA-3 SS	5/28/2019	Surface	In-Situ	0.000508	0.0230	145	7,640	**7,785**	3,160	**10,945**	<0.867
HA-3 @ 1'	5/28/2019	1'	In-Situ	<0.000388	<0.000347	12.2	13.8	26	14.0	40.0	-
HA-3 @ 2'	5/28/2019	2'	In-Situ	<0.000384	<0.000344	12.0	11.5	23.5	11.6	35.1	-
HA-3 @ 3'	5/28/2019	3'	In-Situ	<0.000388	0.00106	8.88	52.1	60.98	22.3	83.28	<0.855
HA-4 SS	5/28/2019	Surface	In-Situ	<0.000387	0.00310	139	42,300	**42,439**	7,800	**50,239**	664
HA-4 @ 1'	5/28/2019	1'	In-Situ	0.000388	0.0111	10.7	1,540	**1,550.7**	344	1,894.7	-
HA-4 @ 2'	5/28/2019	2'	In-Situ	0.0239	0.178	9.51	65.6	75.11	16.8	91.91	-
HA-4 @ 3'	5/28/2019	3'	In-Situ	<0.000386	0.00161	11.0	1,130	**1,141**	253	1,394	26.3
HA-4 @ 4'	6/13/2019	4'	In-Situ	<0.000192	<0.0000953	<7.98	15.8	15.8	13.4	29.2	<0.855
HA-4 @ 5'	6/13/2019	5'	In-Situ	<0.000194	<0.0000961	<7.99	<8.12	<7.99	<8.12	<7.99	<0.860
NMOCD Closure Criteria				**10**	**50**	**-**	**-**	**1,000**	**-**	**2,500**	**10,000**

Delineation Sample Location Map is provided as Attachment 2. Laboratory analytical reports are provided as Appendix B.

SUMMARY OF FIELD ACTIVITIES

Impacted soil in the areas characterized by sample point HA-3 were excavated to a depth of one (1) foot BGS. Impacted soil in the area characterized by sample point HA-4 was excavated to a depth of four (4) ft. BGS. Impacted soil in the area characterized by sample points HA-1 and HA-2 was excavated to a depth of twelve (12) ft. BGS., which was the depth that all visibility stained areas had been removed and olfactory evidence suggested that soil impacts were below the NMOCD closure criteria. Excavated impacted soil was temporarily stockpiled on-site, atop an impermeable liner, pending final disposition. Upon completion of excavation activities, sixteen (16) confirmation composite method soil samples were collected from the floors and sidewalls of the excavated areas representing no more than two hundred (200) square feet. The collected soil samples were submitted to a commercial laboratory for analysis of TPH, BTEX, and chloride concentrations. Laboratory analytical results indicated that TPH, BTEX, and chloride concentrations were below the NMOCD closure criteria in all of the submitted soil samples. Upon receiving laboratory analytical results from confirmatory sampling, 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 BTEX, TPH and/or Chloride 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)
1 FL @ 4'	9/17/2019	4'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
1 SW @ 2'	9/17/2019	2'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
2 FL 1 @ 1'	9/17/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
2 FL 2 @ 1'	9/17/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
2 SW 1 @ 6"	9/17/2019	6"	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
2 SW 2 @ 6"	9/17/2019	6"	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
3 FL 1 @ 12'	9/20/2019	12'	In-Situ	<0.050	<0.300	<10.0	59.9	59.9	114.0	173.9	16.0
3 FL 2 @ 12'	9/20/2019	12'	In-Situ	<0.050	<0.300	<10.0	230	230	161	391	16.0
3 FL 3 @ 12'	9/20/2019	12'	In-Situ	<0.050	<0.300	<10.0	33.1	33.1	59.7	92.8	32.0
3 FL 4 @ 12'	9/23/2019	12'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
3 FL 5 @ 12'	9/23/2019	12'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
3 SW 1 @ 6'	9/17/2019	6'	In-Situ	<0.050	<0.300	<10.0	22.4	22.4	35.9	58.3	<16.0
3 SW 2 @ 6'	9/17/2019	6'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
3 SW 3 @ 6'	9/17/2019	6'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
3 SW 4 @ 6'	9/20/2019	6'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
3 SW 5 @ 6'	9/23/2019	6'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
Closure Criteria				**10**	**50**	**-**	**-**	**1,000**	**-**	**2,500**	**10,000**

Confirmation Sample Location Map (Floors) and Confirmation Sample Location Map (Walls) are provided as Figure 3A and 3B.

SITE CLOSURE REQUEST

Based on laboratory analytical results from confirmation soil samples, 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 Former EK Queen Station.

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.

A "SLO preferred" mix of seed will be utilized for the revegetation of the Site. On NMOCD and SLO 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 "SLO preferred" seed mixed will be purchased from a reputable source and the "seed tags" will be retained as proof of seed quantity and quality. The Site will be monitored on a quarterly basis to evaluate the revegetation process and if noxious weed are observed during the monitoring they will be addressed through mechanical or chemical treatment means. Seed Content Information (seed tag), is provided as Appendix E:

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.

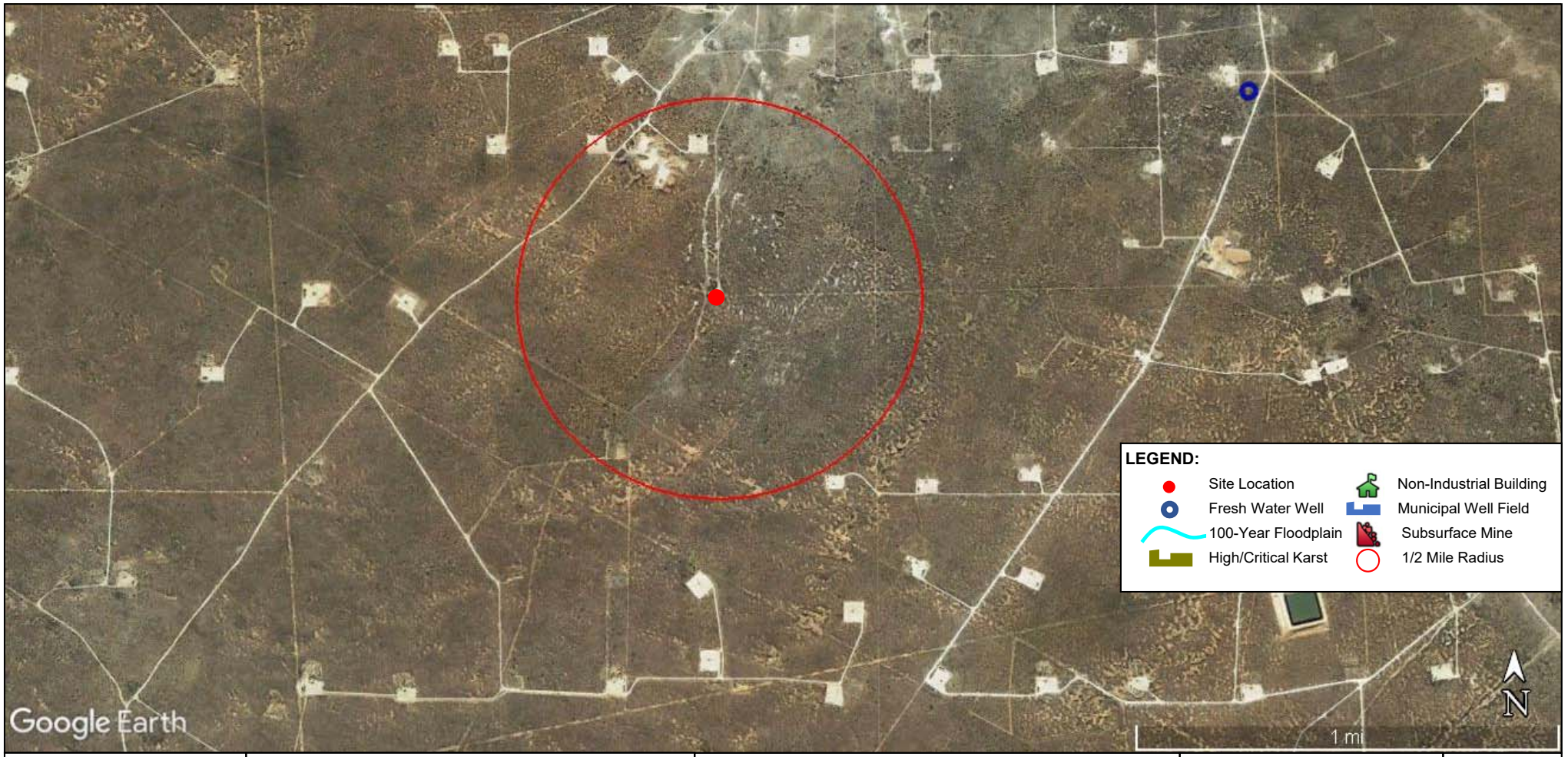
Respectfully,

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

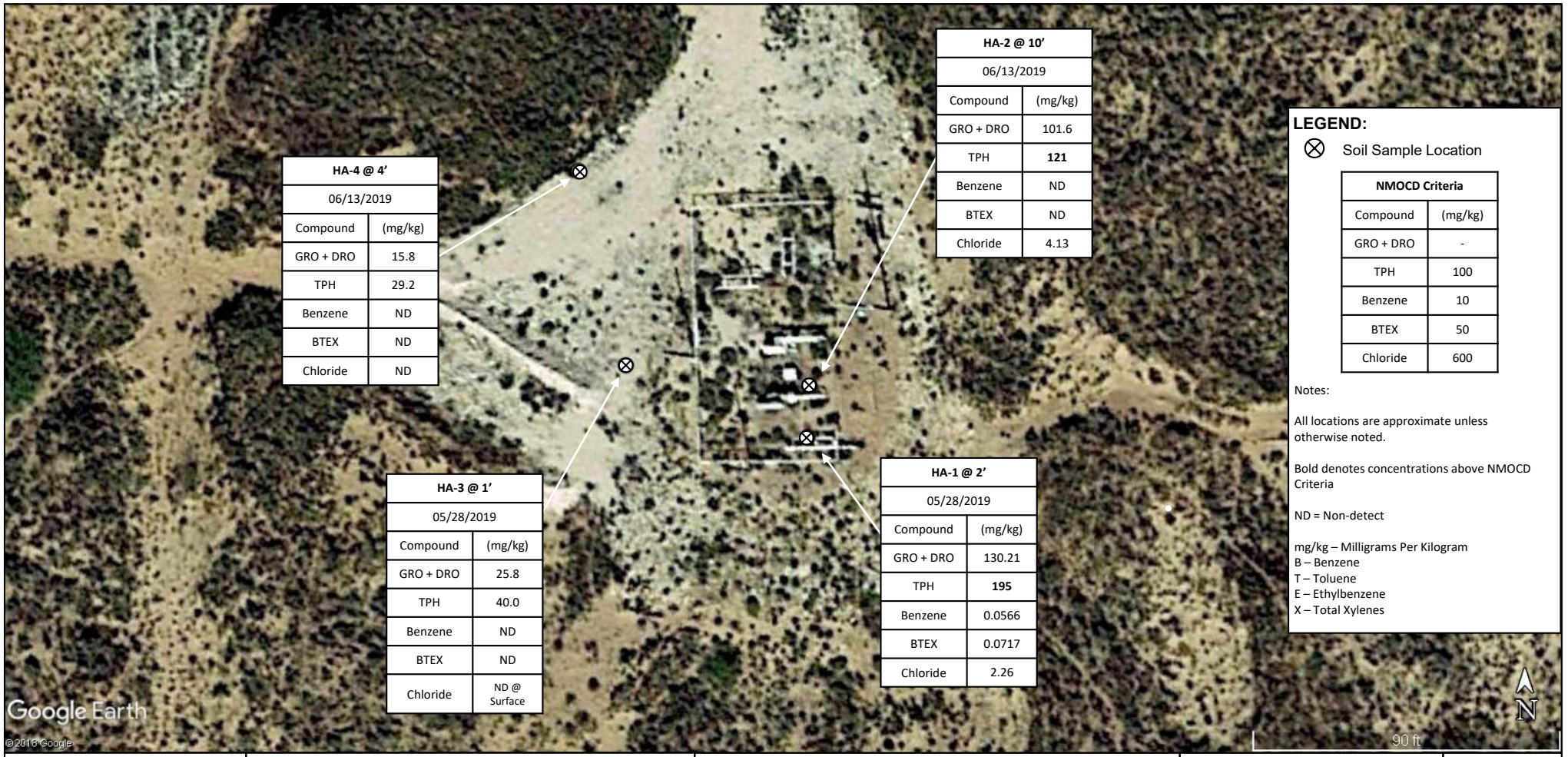
Brian Cooper
Construction Supervisor
bcooper@tasman-geo.com
(806) 401-5356

Attachments:

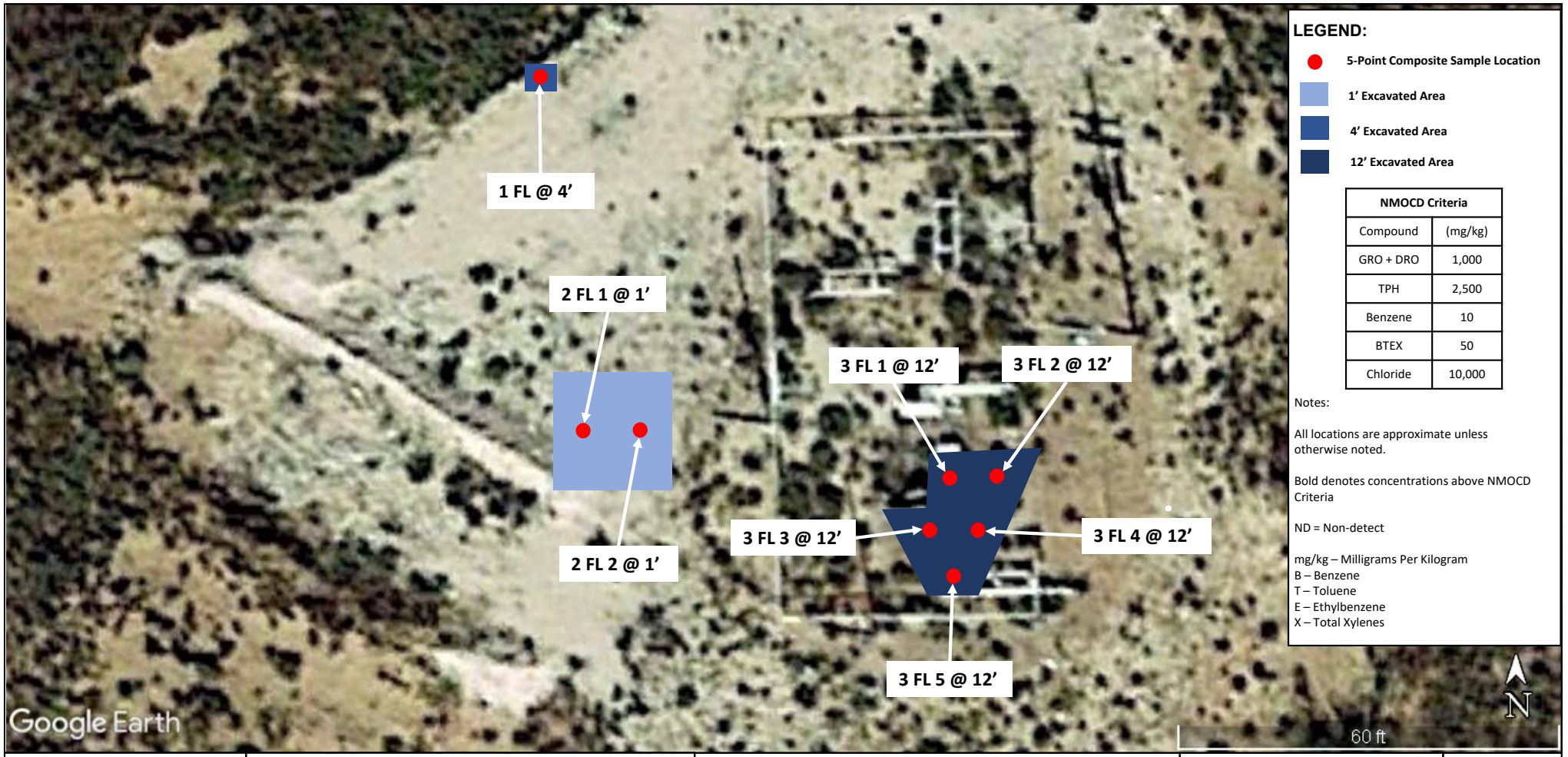
Figure 1:	Site Characteristics Map
Figure 2:	Delineation Sample Location Map
Figure 3A:	Confirmation Sample Location Map (Floors)
Figure 3B:	Confirmation Sample Location Map (Walls)
Appendix A:	Depth to Groundwater Results
Appendix B:	Laboratory Analytical Reports
Appendix C:	Photo Documentation
Appendix D:	Initial C-141
Appendix E:	Seed Content Information



DATE: October 2019 DESIGNED BY: BC DRAWN BY: BC	TASMAN GEOSCIENCES *Tasman Geosciences, Inc.* *2620 W. Marland Blvd.* *Hobbs, NM 88240*	**Plains Pipeline, LP** **Former EK Queen Station Historical** GPS: 32.726736, -103.631709 UL "O", Section 23, Township 18 South, Range 33 East Lea County, New Mexico	Site Characteristics Map	**Figure 1**



DATE: July 2019 DESIGNED BY: BD DRAWN BY: BD	TASMAN GEOSCIENCES *Tasman Geosciences, Inc.* *2620 W. Marland Blvd.* *Hobbs, NM 88240*	**Plains Pipeline, LP** **Former EK Queen Station Historical** GPS: 32.726736, -103.631709 UL "O", Section 23, Township 18 South, Range 33 East Lea County, New Mexico	Delineation Sample Location Map	**Figure 2**



LEGEND:

- 5-Point Composite Sample Location
- 1' Excavated Area
- 4' Excavated Area
- 12' Excavated Area

NMOCD Criteria	
Compound	(mg/kg)
GRO + DRO	1,000
TPH	2,500
Benzene	10
BTEX	50
Chloride	10,000

Notes:

All locations are approximate unless otherwise noted.

Bold denotes concentrations above NMOCD Criteria

ND = Non-detect

mg/kg – Milligrams Per Kilogram
B – Benzene
T – Toluene
E – Ethylbenzene
X – Total Xylenes

DATE: October 2019 DESIGNED BY: BD DRAWN BY: BC	TASMAN GEOSCIENCES *Tasman Geosciences, Inc.* *2620 W. Marland Blvd.* *Hobbs, NM 88240*	**Plains Pipeline, LP** **Former EK Queen Station Historical** GPS: 32.726736, -103.631709 UL "O", Section 23, Township 18 South, Range 33 East Lea County, New Mexico	Confirmation Sample Location Map (Floors)	**Figure 3A**

LEGEND:

- Soil Sample Location
- 1’ Excavated Area
- 4’ Excavated Area
- 12’ Excavated Area

NMOCD Criteria	
Compound	(mg/kg)
GRO + DRO	1,000
TPH	2,500
Benzene	10
BTEX	50
Chloride	10,000

Notes:

All locations are approximate unless otherwise noted.

Bold denotes concentrations above NMOCD Criteria

ND = Non-detect

mg/kg – Milligrams Per Kilogram
B – Benzene
T – Toluene
E – Ethylbenzene
X – Total Xylenes

DATE: October 2019 DESIGNED BY: BD DRAWN BY: BC	TASMAN GEOSCIENCES *Tasman Geosciences, Inc.* *2620 W. Marland Blvd.* *Hobbs, NM 88240*	**Plains Pipeline, LP** **Former EK Queen Station Historical** GPS: 32.726736, -103.631709 UL “O”, Section 23, Township 18 South, Range 33 East Lea County, New Mexico	Confirmation Sample Location Map (Walls)	**Figure 3B**


100
48S 33E
X

New Mexico Office of the State Engineer

Wells with Well Log Information

No wells found.

PLSS Search:

Section(s): 23 **Township:** 18S **Range:** 33E

USGS science for a changing world

National Water Information System: Mapper

Sites | Map

Search

Surface-Water Sites

Groundwater Sites

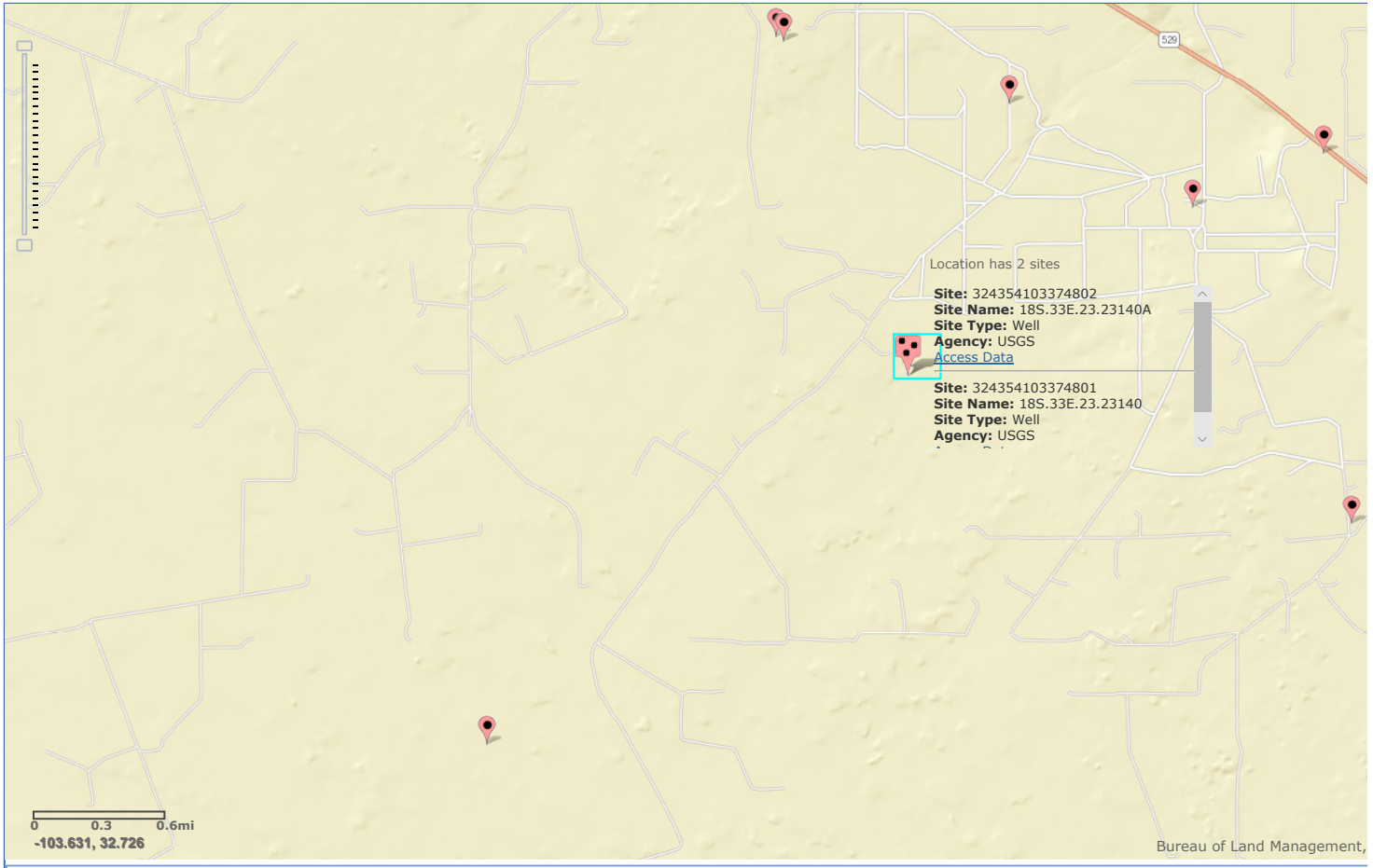
Active Sites
Any data
Instantaneous data
Daily data
Water-quality data
Measurements
Annual Report

Inactive Sites
Any data
Instantaneous data
Daily data
Water-quality data
Measurements
Annual Report

Springs

Atmospheric Sites

Other Sites



Site Information

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Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 324354103374802

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

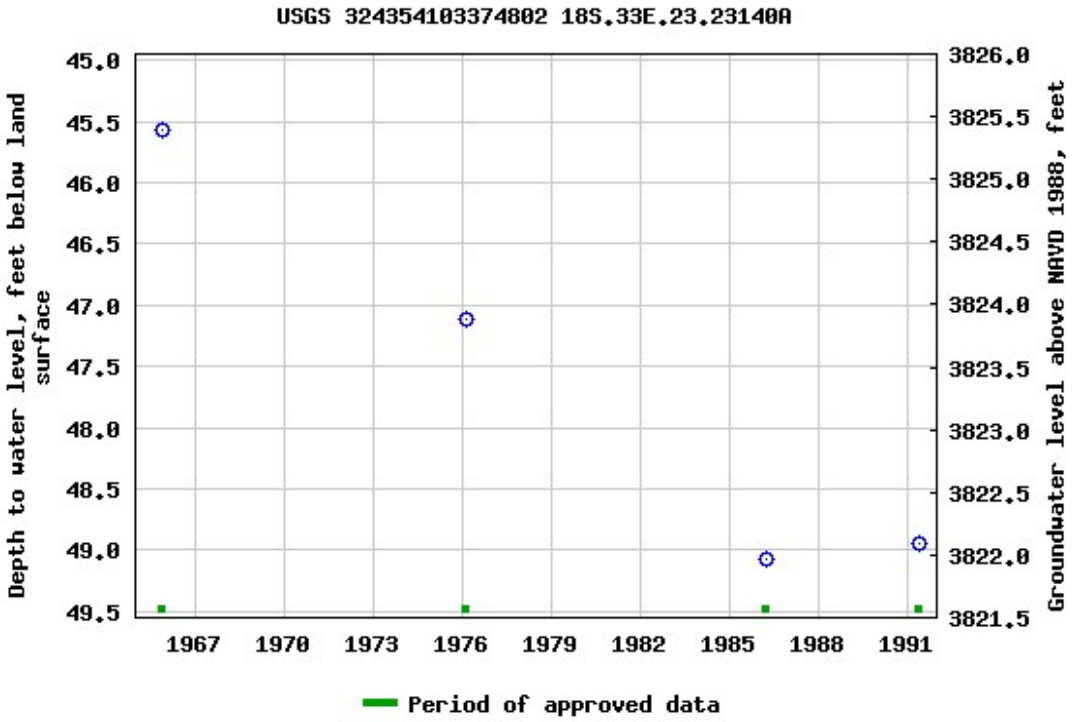
USGS 324354103374802 18S.33E.23.23140A

Available data for this site Groundwater: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°43'54", Longitude 103°37'48" NAD27
Land-surface elevation 3,871 feet above NAVD88
The depth of the well is 60 feet below land surface.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

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



Breaks in the plot represent a gap of at least one year between field measurements.
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- 324354103374801

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

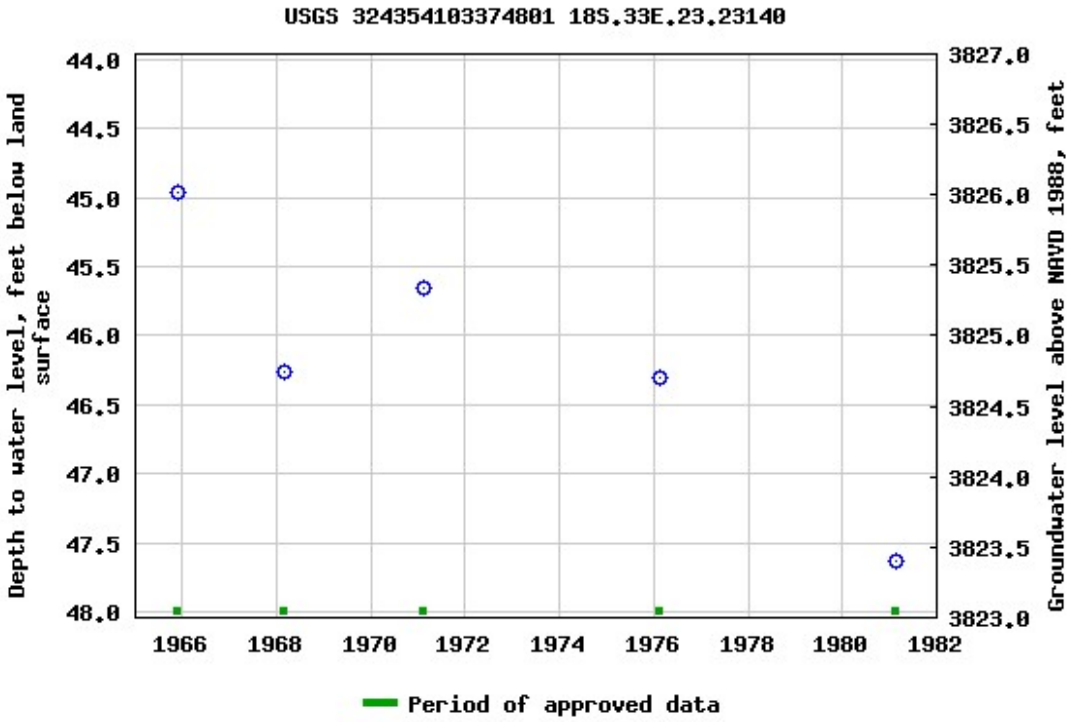
USGS 324354103374801 18S.33E.23.23140

Available data for this site Groundwater: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°43'54", Longitude 103°37'48" NAD27
Land-surface elevation 3,871 feet above NAVD88
The depth of the well is 58 feet below land surface.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

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



Breaks in the plot represent a gap of at least one year between field measurements.
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Analytical Report 626141

for

Tasman Geosciences, LLC

Project Manager: Zach Conder

EK Queens Reclamation

12-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)

Table of Contents

12-JUN-19

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

Reference: XENCO Report No(s): **626141**
EK Queens Reclamation
Project Address: Lea County, NM

Zach Conder:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 626141. 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. 626141 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

John Builes
Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

Sample Cross Reference 626141

Tasman Geosciences, LLC, Hobbs, NM

EK Queens Reclamation

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
HA-1 SS	S	05-28-19 00:00		626141-001
HA-1 @ 1'	S	05-28-19 00:00	1 ft	626141-002
HA-1 @ 2'	S	05-28-19 00:00	2 ft	626141-003
HA-2 SS	S	05-28-19 00:00		626141-004
HA-2 @ 1'	S	05-28-19 00:00	1 ft	626141-005
HA-2 @ 2'	S	05-28-19 00:00	2 ft	626141-006
HA-2 @ 3'	S	05-28-19 00:00	3 ft	626141-007
HA-3 SS	S	05-28-19 00:00		626141-008
HA-3 @ 1'	S	05-28-19 00:00	1 ft	626141-009
HA-3 @ 2'	S	05-28-19 00:00	2 ft	626141-010
HA-3 @ 3'	S	05-28-19 00:00	3 ft	626141-011
HA-4 SS	S	05-28-19 00:00		626141-012
HA-4 @ 1'	S	05-28-19 00:00	1 ft	626141-013
HA-4 @ 2'	S	05-28-19 00:00	2 ft	626141-014
HA-4 @ 3'	S	05-28-19 00:00	3 ft	626141-015

CASE NARRATIVE

Client Name: Tasman Geosciences, LLC

Project Name: EK Queens Reclamation

Project ID:
Work Order Number(s): *626141*

Report Date: *12-JUN-19*
Date Received: *05/31/2019*

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-3090914 TPH by SW8015 Mod
Surrogate 1-Chlorooctane, Surrogate o-Terphenyl recovered below QC limits. Matrix interferences is suspected.
Samples affected are: 626141-012.

Batch: LBA-3091580 BTEX by EPA 8021
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 4-Bromofluorobenzene recovered below QC limits. Matrix interferences is suspected.
Samples affected are: 626141-004.

Batch: LBA-3091758 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: 626141-014.

Batch: LBA-3091855 BTEX by EPA 8021
Dilution due to poor internal resolution caused by matrix interference.

Certificate of Analytical Results
626141

Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **HA-1 SS** Matrix: Soil Sample Depth:

Lab Sample Id: 626141-001 Date Collected: 05.28.19 00.00 Date Received: 05.31.19 13.54

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: CHE % Moist: Tech: CHE

Seq Number: 3091325 Date Prep: 06.03.19 17.45

Prep seq: 7679148

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.853	4.97	0.853	mg/kg	06.05.19 15:54	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3091214 Date Prep: 06.02.19 11.00

Prep seq: 7679154

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**11.2**	14.9	7.97	mg/kg	06.03.19 03:10	J	1
Diesel Range Organics (DRO)	C10C28DRO	**3190**	14.9	8.10	mg/kg	06.03.19 03:10		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**514**	14.9	8.10	mg/kg	06.03.19 03:10		1
Total TPH	PHC635	**3720**		7.97	mg/kg	06.03.19 03:10		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	84	70 - 135	%		
o-Terphenyl	102	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: SCM

Seq Number: 3091580 Date Prep: 06.06.19 17.00

Prep seq: 7679457

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.07.19 22:16	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	06.07.19 22:16	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	06.07.19 22:16	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.07.19 22:16	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	06.07.19 22:16	U	1
Xylenes, Total	1330-20-7	<0.000343		0.000343	mg/kg	06.07.19 22:16	U	
Total BTEX		<0.000343		0.000343	mg/kg	06.07.19 22:16	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	110	70 - 130	%		
4-Bromofluorobenzene	78	70 - 130	%		

Certificate of Analytical Results
626141

Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **HA-1 @ 1'** Matrix: Soil Sample Depth: 1 ft

Lab Sample Id: 626141-002 Date Collected: 05.28.19 00.00 Date Received: 05.31.19 13.54

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3091214 Date Prep: 06.02.19 11.00

Prep seq: 7679154

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**8.39**	15.0	7.98	mg/kg	06.03.19 03:30	J	1
Diesel Range Organics (DRO)	C10C28DRO	**92.6**	15.0	8.10	mg/kg	06.03.19 03:30		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**47.0**	15.0	8.10	mg/kg	06.03.19 03:30		1
Total TPH	PHC635	**148**		7.98	mg/kg	06.03.19 03:30		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	102	70 - 135	%		
o-Terphenyl	98	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: DVM

Seq Number: 3091855 Date Prep: 06.10.19 12.00

Prep seq: 7679621

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	**0.0565**	0.0496	0.00955	mg/kg	06.11.19 09:01		25
Toluene	108-88-3	**0.0139**	0.0496	0.0113	mg/kg	06.11.19 09:01	J	25
Ethylbenzene	100-41-4	<0.0140	0.0496	0.0140	mg/kg	06.11.19 09:01	U	25
m_p-Xylenes	179601-23-1	**0.0265**	0.0992	0.0252	mg/kg	06.11.19 09:01	J	25
o-Xylene	95-47-6	<0.00854	0.0496	0.00854	mg/kg	06.11.19 09:01	U	25
Xylenes, Total	1330-20-7	**0.0265**		0.00854	mg/kg	06.11.19 09:01	J	
Total BTEX		**0.0969**		0.00854	mg/kg	06.11.19 09:01		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	123	70 - 130	%		

Certificate of Analytical Results
626141

Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **HA-1 @ 2'** Matrix: Soil Sample Depth: 2 ft

Lab Sample Id: 626141-003 Date Collected: 05.28.19 00.00 Date Received: 05.31.19 13.54

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: CHE % Moist: Tech: CHE

Seq Number: 3091325 Date Prep: 06.03.19 17.45

Prep seq: 7679148

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**2.26**	5.04	0.865	mg/kg	06.05.19 17:14	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3091214 Date Prep: 06.02.19 11.00

Prep seq: 7679154

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**8.21**	15.0	7.98	mg/kg	06.03.19 03:50	J	1
Diesel Range Organics (DRO)	C10C28DRO	**122**	15.0	8.10	mg/kg	06.03.19 03:50		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**64.5**	15.0	8.10	mg/kg	06.03.19 03:50		1
Total TPH	PHC635	**195**		7.98	mg/kg	06.03.19 03:50		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	85	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: DVM

Seq Number: 3091855 Date Prep: 06.10.19 12.00

Prep seq: 7679621

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	**0.0566**	0.0503	0.00968	mg/kg	06.11.19 09:20		25
Toluene	108-88-3	**0.0151**	0.0503	0.0115	mg/kg	06.11.19 09:20	J	25
Ethylbenzene	100-41-4	<0.0142	0.0503	0.0142	mg/kg	06.11.19 09:20	U	25
m_p-Xylenes	179601-23-1	<0.0255	0.101	0.0255	mg/kg	06.11.19 09:20	U	25
o-Xylene	95-47-6	<0.00866	0.0503	0.00866	mg/kg	06.11.19 09:20	U	25
Xylenes, Total	1330-20-7	<0.00866		0.00866	mg/kg	06.11.19 09:20	U	
Total BTEX		**0.0717**		0.00866	mg/kg	06.11.19 09:20		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	128	70 - 130	%		

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626141

Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **HA-2 SS** Matrix: Soil Sample Depth:

Lab Sample Id: 626141-004 Date Collected: 05.28.19 00.00 Date Received: 05.31.19 13.54

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: CHE % Moist: Tech: CHE

Seq Number: 3091325 Date Prep: 06.03.19 17.45

Prep seq: 7679148

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**1.88**	5.02	0.862	mg/kg	06.05.19 17:22	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3091214 Date Prep: 06.02.19 11.00

Prep seq: 7679154

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**40.4**	74.8	39.9	mg/kg	06.03.19 06:51	J	5
Diesel Range Organics (DRO)	C10C28DRO	**7660**	74.8	40.5	mg/kg	06.03.19 06:51		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**2180**	74.8	40.5	mg/kg	06.03.19 06:51		5
Total TPH	PHC635	**9880**		39.9	mg/kg	06.03.19 06:51		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	85	70 - 135	%		
o-Terphenyl	116	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: SCM

Seq Number: 3091580 Date Prep: 06.06.19 17.00

Prep seq: 7679457

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.07.19 23:15	U	1
Toluene	108-88-3	**0.000978**	0.00200	0.000455	mg/kg	06.07.19 23:15	J	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.07.19 23:15	U	1
m_p-Xylenes	179601-23-1	**0.00147**	0.00399	0.00101	mg/kg	06.07.19 23:15	J	1
o-Xylene	95-47-6	**0.000798**	0.00200	0.000344	mg/kg	06.07.19 23:15	J	1
Xylenes, Total	1330-20-7	**0.00227**		0.000344	mg/kg	06.07.19 23:15		
Total BTEX		**0.00325**		0.000344	mg/kg	06.07.19 23:15		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	70 - 130	%		
4-Bromofluorobenzene	68	70 - 130	%		**

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626141

Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **HA-2 @ 1'** Matrix: Soil Sample Depth: 1 ft

Lab Sample Id: 626141-005 Date Collected: 05.28.19 00.00 Date Received: 05.31.19 13.54

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3091214 Date Prep: 06.02.19 11.00

Prep seq: 7679154

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**11.8**	15.0	7.99	mg/kg	06.03.19 07:10	J	1
Diesel Range Organics (DRO)	C10C28DRO	**1050**	15.0	8.12	mg/kg	06.03.19 07:10		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**384**	15.0	8.12	mg/kg	06.03.19 07:10		1
Total TPH	PHC635	**1450**		7.99	mg/kg	06.03.19 07:10		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	89	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: SCM

Seq Number: 3091580 Date Prep: 06.06.19 17.00

Prep seq: 7679457

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	**0.000557**	0.00199	0.000383	mg/kg	06.07.19 23:34	J	1
Toluene	108-88-3	**0.000606**	0.00199	0.000453	mg/kg	06.07.19 23:34	J	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	06.07.19 23:34	U	1
m_p-Xylenes	179601-23-1	**0.00155**	0.00398	0.00101	mg/kg	06.07.19 23:34	J	1
o-Xylene	95-47-6	**0.00129**	0.00199	0.000342	mg/kg	06.07.19 23:34	J	1
Xylenes, Total	1330-20-7	**0.00284**		0.000342	mg/kg	06.07.19 23:34		
Total BTEX		**0.00400**		0.000342	mg/kg	06.07.19 23:34		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	70 - 130	%		
4-Bromofluorobenzene	71	70 - 130	%		

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Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **HA-2 @ 2'** Matrix: Soil Sample Depth: 2 ft

Lab Sample Id: 626141-006 Date Collected: 05.28.19 00.00 Date Received: 05.31.19 13.54

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3091214 Date Prep: 06.02.19 11.00

Prep seq: 7679154

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**9.10**	15.0	7.99	mg/kg	06.03.19 07:29	J	1
Diesel Range Organics (DRO)	C10C28DRO	**277**	15.0	8.11	mg/kg	06.03.19 07:29		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**134**	15.0	8.11	mg/kg	06.03.19 07:29		1
Total TPH	PHC635	**420**		7.99	mg/kg	06.03.19 07:29		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	92	70 - 135	%		
o-Terphenyl	86	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: SCM

Seq Number: 3091580 Date Prep: 06.06.19 17.00

Prep seq: 7679457

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	06.07.19 23:55	U	1
Toluene	108-88-3	**0.000516**	0.00198	0.000452	mg/kg	06.07.19 23:55	J	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	06.07.19 23:55	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	06.07.19 23:55	U	1
o-Xylene	95-47-6	**0.000565**	0.00198	0.000342	mg/kg	06.07.19 23:55	J	1
Xylenes, Total	1330-20-7	**0.000565**		0.000342	mg/kg	06.07.19 23:55	J	
Total BTEX		**0.00108**		0.000342	mg/kg	06.07.19 23:55	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	70 - 130	%		
4-Bromofluorobenzene	104	70 - 130	%		

Certificate of Analytical Results
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Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **HA-2 @ 3'** Matrix: Soil Sample Depth: 3 ft

Lab Sample Id: 626141-007 Date Collected: 05.28.19 00.00 Date Received: 05.31.19 13.54

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: CHE % Moist: Tech: CHE

Seq Number: 3091325 Date Prep: 06.03.19 17.45

Prep seq: 7679148

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.852	4.96	0.852	mg/kg	06.05.19 17:29	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3091214 Date Prep: 06.02.19 11.00

Prep seq: 7679154

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**9.02**	15.0	7.99	mg/kg	06.03.19 07:49	J	1
Diesel Range Organics (DRO)	C10C28DRO	**908**	15.0	8.12	mg/kg	06.03.19 07:49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**347**	15.0	8.12	mg/kg	06.03.19 07:49		1
Total TPH	PHC635	**1260**		7.99	mg/kg	06.03.19 07:49		

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

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: SCM

Seq Number: 3091580 Date Prep: 06.06.19 17.00

Prep seq: 7679457

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	06.07.19 12:15	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	06.07.19 12:15	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	06.07.19 12:15	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.07.19 12:15	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.07.19 12:15	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	06.07.19 12:15	U	
Total BTEX		<0.000346		0.000346	mg/kg	06.07.19 12:15	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	88	70 - 130	%		
4-Bromofluorobenzene	86	70 - 130	%		

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Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **HA-3 SS** Matrix: Soil Sample Depth:

Lab Sample Id: 626141-008 Date Collected: 05.28.19 00.00 Date Received: 05.31.19 13.54

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: CHE % Moist: Tech: CHE

Seq Number: 3091325 Date Prep: 06.03.19 17.45

Prep seq: 7679148

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.867	5.05	0.867	mg/kg	06.05.19 17:36	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3090914 Date Prep: 05.31.19 10.00

Prep seq: 7679062

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**145**	75.0	40.0	mg/kg	05.31.19 18:27		5
Diesel Range Organics (DRO)	C10C28DRO	**7640**	75.0	40.6	mg/kg	05.31.19 18:27		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**3160**	75.0	40.6	mg/kg	05.31.19 18:27		5
Total TPH	PHC635	**10900**		40.0	mg/kg	05.31.19 18:27		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	84	70 - 135	%		
o-Terphenyl	108	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: SCM

Seq Number: 3091580 Date Prep: 06.06.19 17.00

Prep seq: 7679457

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	**0.000508**	0.00199	0.000383	mg/kg	06.07.19 12:35	J	1
Toluene	108-88-3	**0.00150**	0.00199	0.000454	mg/kg	06.07.19 12:35	J	1
Ethylbenzene	100-41-4	**0.00419**	0.00199	0.000563	mg/kg	06.07.19 12:35		1
m_p-Xylenes	179601-23-1	**0.00431**	0.00398	0.00101	mg/kg	06.07.19 12:35		1
o-Xylene	95-47-6	**0.0125**	0.00199	0.000343	mg/kg	06.07.19 12:35		1
Xylenes, Total	1330-20-7	**0.0168**		0.000343	mg/kg	06.07.19 12:35		
Total BTEX		**0.0230**		0.000343	mg/kg	06.07.19 12:35		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	70 - 130	%		
4-Bromofluorobenzene	107	70 - 130	%		

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Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **HA-3 @ 1'** Matrix: Soil Sample Depth: 1 ft

Lab Sample Id: 626141-009 Date Collected: 05.28.19 00.00 Date Received: 05.31.19 13.54

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3090914 Date Prep: 05.31.19 10.00

Prep seq: 7679062

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**12.2**	15.0	7.98	mg/kg	05.31.19 18:46	J	1
Diesel Range Organics (DRO)	C10C28DRO	**13.8**	15.0	8.10	mg/kg	05.31.19 18:46	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**14.0**	15.0	8.10	mg/kg	05.31.19 18:46	J	1
Total TPH	PHC635	**40.0**		7.98	mg/kg	05.31.19 18:46		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	86	70 - 135	%		
o-Terphenyl	80	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: SCM

Seq Number: 3091580 Date Prep: 06.06.19 17.00

Prep seq: 7679457

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000388	0.00202	0.000388	mg/kg	06.07.19 12:56	U	1
Toluene	108-88-3	<0.000459	0.00202	0.000459	mg/kg	06.07.19 12:56	U	1
Ethylbenzene	100-41-4	<0.000569	0.00202	0.000569	mg/kg	06.07.19 12:56	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00403	0.00102	mg/kg	06.07.19 12:56	U	1
o-Xylene	95-47-6	<0.000347	0.00202	0.000347	mg/kg	06.07.19 12:56	U	1
Xylenes, Total	1330-20-7	<0.000347		0.000347	mg/kg	06.07.19 12:56	U	
Total BTEX		<0.000347		0.000347	mg/kg	06.07.19 12:56	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	98	70 - 130	%		

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Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **HA-3 @ 2'** Matrix: Soil Sample Depth: 2 ft

Lab Sample Id: 626141-010 Date Collected: 05.28.19 00.00 Date Received: 05.31.19 13.54

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3090914 Date Prep: 05.31.19 10.00

Prep seq: 7679062

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**12.0**	14.9	7.97	mg/kg	05.31.19 19:06	J	1
Diesel Range Organics (DRO)	C10C28DRO	**11.5**	14.9	8.10	mg/kg	05.31.19 19:06	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**11.6**	14.9	8.10	mg/kg	05.31.19 19:06	J	1
Total TPH	PHC635	**35.1**		7.97	mg/kg	05.31.19 19:06		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	84	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: SCM

Seq Number: 3091580 Date Prep: 06.06.19 17.00

Prep seq: 7679457

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.07.19 13:16	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.07.19 13:16	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.07.19 13:16	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.07.19 13:16	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.07.19 13:16	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	06.07.19 13:16	U	
Total BTEX		<0.000344		0.000344	mg/kg	06.07.19 13:16	U	

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

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Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **HA-3 @ 3'** Matrix: Soil Sample Depth: 3 ft

Lab Sample Id: 626141-011 Date Collected: 05.28.19 00.00 Date Received: 05.31.19 13.54

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: CHE % Moist: Tech: CHE

Seq Number: 3091325 Date Prep: 06.03.19 17.45

Prep seq: 7679148

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.855	4.98	0.855	mg/kg	06.05.19 17:58	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3090914 Date Prep: 05.31.19 10.00

Prep seq: 7679062

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**8.88**	15.0	7.99	mg/kg	05.31.19 19:25	J	1
Diesel Range Organics (DRO)	C10C28DRO	**52.1**	15.0	8.11	mg/kg	05.31.19 19:25		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**22.3**	15.0	8.11	mg/kg	05.31.19 19:25		1
Total TPH	PHC635	**83.3**		7.99	mg/kg	05.31.19 19:25		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	92	70 - 135	%		
o-Terphenyl	89	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: SCM

Seq Number: 3091758 Date Prep: 06.07.19 15.45

Prep seq: 7679574

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000388	0.00202	0.000388	mg/kg	06.07.19 19:09	U	1
Toluene	108-88-3	**0.000655**	0.00202	0.000459	mg/kg	06.07.19 19:09	J	1
Ethylbenzene	100-41-4	<0.000569	0.00202	0.000569	mg/kg	06.07.19 19:09	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00403	0.00102	mg/kg	06.07.19 19:09	U	1
o-Xylene	95-47-6	**0.000403**	0.00202	0.000347	mg/kg	06.07.19 19:09	J	1
Xylenes, Total	1330-20-7	**0.000403**		0.000347	mg/kg	06.07.19 19:09	J	
Total BTEX		**0.00106**		0.000347	mg/kg	06.07.19 19:09	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	94	70 - 130	%		
4-Bromofluorobenzene	102	70 - 130	%		

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Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **HA-4 SS** Matrix: Soil Sample Depth:

Lab Sample Id: 626141-012 Date Collected: 05.28.19 00.00 Date Received: 05.31.19 13.54

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: CHE % Moist: Tech: CHE

Seq Number: 3091325 Date Prep: 06.03.19 17.45

Prep seq: 7679148

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**664**	5.00	0.858	mg/kg	06.05.19 18:05		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3090914 Date Prep: 05.31.19 10.00

Prep seq: 7679062

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**139**	179	95.7	mg/kg	05.31.19 19:45	J	12
Diesel Range Organics (DRO)	C10C28DRO	**42300**	179	97.2	mg/kg	05.31.19 19:45		12
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**7800**	179	97.2	mg/kg	05.31.19 19:45		12
Total TPH	PHC635	**50200**		95.7	mg/kg	05.31.19 19:45		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	63	70 - 135	%		**
o-Terphenyl	57	70 - 135	%		**

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: SCM

Seq Number: 3091758 Date Prep: 06.07.19 15.45

Prep seq: 7679574

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	06.07.19 19:29	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	06.07.19 19:29	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	06.07.19 19:29	U	1
m_p-Xylenes	179601-23-1	**0.00139**	0.00402	0.00102	mg/kg	06.07.19 19:29	J	1
o-Xylene	95-47-6	**0.00171**	0.00201	0.000346	mg/kg	06.07.19 19:29	J	1
Xylenes, Total	1330-20-7	**0.00310**		0.000346	mg/kg	06.07.19 19:29		
Total BTEX		**0.00310**		0.000346	mg/kg	06.07.19 19:29		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	91	70 - 130	%		
4-Bromofluorobenzene	85	70 - 130	%		

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Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **HA-4 @ 1'** Matrix: Soil Sample Depth: 1 ft

Lab Sample Id: 626141-013 Date Collected: 05.28.19 00.00 Date Received: 05.31.19 13.54

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3090914 Date Prep: 05.31.19 10.00

Prep seq: 7679062

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**10.7**	15.0	7.99	mg/kg	05.31.19 20:04	J	1
Diesel Range Organics (DRO)	C10C28DRO	**1540**	15.0	8.12	mg/kg	05.31.19 20:04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**344**	15.0	8.12	mg/kg	05.31.19 20:04		1
Total TPH	PHC635	**1890**		7.99	mg/kg	05.31.19 20:04		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	95	70 - 135	%		
o-Terphenyl	126	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: SCM

Seq Number: 3091758 Date Prep: 06.07.19 15.45

Prep seq: 7679574

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	**0.000388**	0.00199	0.000383	mg/kg	06.07.19 19:49	J	1
Toluene	108-88-3	**0.00231**	0.00199	0.000453	mg/kg	06.07.19 19:49		1
Ethylbenzene	100-41-4	**0.00246**	0.00199	0.000561	mg/kg	06.07.19 19:49		1
m_p-Xylenes	179601-23-1	**0.00218**	0.00398	0.00101	mg/kg	06.07.19 19:49	J	1
o-Xylene	95-47-6	**0.00381**	0.00199	0.000342	mg/kg	06.07.19 19:49		1
Xylenes, Total	1330-20-7	**0.00599**		0.000342	mg/kg	06.07.19 19:49		
Total BTEX		**0.0111**		0.000342	mg/kg	06.07.19 19:49		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	96	70 - 130	%		
4-Bromofluorobenzene	123	70 - 130	%		

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Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **HA-4 @ 2'** Matrix: Soil Sample Depth: 2 ft

Lab Sample Id: 626141-014 Date Collected: 05.28.19 00.00 Date Received: 05.31.19 13.54

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3090914 Date Prep: 05.31.19 10.00

Prep seq: 7679062

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**9.51**	15.0	8.00	mg/kg	05.31.19 20:24	J	1
Diesel Range Organics (DRO)	C10C28DRO	**65.6**	15.0	8.13	mg/kg	05.31.19 20:24		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**16.8**	15.0	8.13	mg/kg	05.31.19 20:24		1
Total TPH	PHC635	**91.9**		8.00	mg/kg	05.31.19 20:24		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	92	70 - 135	%		
o-Terphenyl	86	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: SCM

Seq Number: 3091758 Date Prep: 06.07.19 15.45

Prep seq: 7679574

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	**0.0239**	0.00200	0.000385	mg/kg	06.07.19 20:10		1
Toluene	108-88-3	**0.0132**	0.00200	0.000456	mg/kg	06.07.19 20:10		1
Ethylbenzene	100-41-4	**0.0243**	0.00200	0.000565	mg/kg	06.07.19 20:10		1
m_p-Xylenes	179601-23-1	**0.0215**	0.00400	0.00101	mg/kg	06.07.19 20:10		1
o-Xylene	95-47-6	**0.0946**	0.00200	0.000344	mg/kg	06.07.19 20:10		1
Xylenes, Total	1330-20-7	**0.116**		0.000344	mg/kg	06.07.19 20:10		
Total BTEX		**0.178**		0.000344	mg/kg	06.07.19 20:10		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	112	70 - 130	%		
4-Bromofluorobenzene	259	70 - 130	%		**

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Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **HA-4 @ 3'** Matrix: Soil Sample Depth: 3 ft

Lab Sample Id: 626141-015 Date Collected: 05.28.19 00.00 Date Received: 05.31.19 13.54

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: CHE % Moist: Tech: CHE

Seq Number: 3091325 Date Prep: 06.03.19 17.45

Prep seq: 7679148

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**26.3**	5.00	0.858	mg/kg	06.05.19 18:27		1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3090914 Date Prep: 05.31.19 10.00

Prep seq: 7679062

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**11.0**	15.0	8.00	mg/kg	05.31.19 20:43	J	1
Diesel Range Organics (DRO)	C10C28DRO	**1130**	15.0	8.13	mg/kg	05.31.19 20:43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**253**	15.0	8.13	mg/kg	05.31.19 20:43		1
Total TPH	PHC635	**1390**		8.00	mg/kg	05.31.19 20:43		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	96	70 - 135	%		
o-Terphenyl	118	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: SCM

Seq Number: 3091758 Date Prep: 06.07.19 15.45

Prep seq: 7679574

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	06.07.19 20:30	U	1
Toluene	108-88-3	**0.000572**	0.00201	0.000457	mg/kg	06.07.19 20:30	J	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	06.07.19 20:30	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.07.19 20:30	U	1
o-Xylene	95-47-6	**0.00104**	0.00201	0.000346	mg/kg	06.07.19 20:30	J	1
Xylenes, Total	1330-20-7	**0.00104**		0.000346	mg/kg	06.07.19 20:30	J	
Total BTEX		**0.00161**		0.000346	mg/kg	06.07.19 20:30	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	98	70 - 130	%		
4-Bromofluorobenzene	106	70 - 130	%		

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Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **7679062-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7679062-1-BLK Date Collected: Date Received:

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3090914 Date Prep: 05.31.19 10.00

Prep seq: 7679062

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	05.31.19 12:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	05.31.19 12:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	05.31.19 12:32	U	1
Total TPH	PHC635	<8.00		8.00	mg/kg	05.31.19 12:32	U	

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

Sample Id: **7679148-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7679148-1-BLK Date Collected: Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: CHE % Moist: Tech: CHE

Seq Number: 3091325 Date Prep: 06.03.19 17.45

Prep seq: 7679148

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	06.05.19 15:33	U	1

Certificate of Analytical Results
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Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **7679154-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7679154-1-BLK Date Collected: Date Received:

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3091214 Date Prep: 06.02.19 11.00

Prep seq: 7679154

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	06.02.19 21:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	06.02.19 21:01	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	06.02.19 21:01	U	1
Total TPH	PHC635	<8.00		8.00	mg/kg	06.02.19 21:01	U	

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

Sample Id: **7679457-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7679457-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: SCM

Seq Number: 3091580 Date Prep: 06.06.19 17.00

Prep seq: 7679457

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.07.19 05:52	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	06.07.19 05:52	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	06.07.19 05:52	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.07.19 05:52	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	06.07.19 05:52	U	1
Xylenes, Total	1330-20-7	<0.000343		0.000343	mg/kg	06.07.19 05:52	U	
Total BTEX		<0.000343		0.000343	mg/kg	06.07.19 05:52	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	88	70 - 130	%		
4-Bromofluorobenzene	86	70 - 130	%		

Certificate of Analytical Results
626141

Tasman Geosciences, LLC, Hobbs, NM
EK Queens Reclamation

Sample Id: **7679574-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7679574-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: SCM

Seq Number: 3091758 Date Prep: 06.07.19 15.45

Prep seq: 7679574

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	06.07.19 18:50	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	06.07.19 18:50	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	06.07.19 18:50	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	06.07.19 18:50	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	06.07.19 18:50	U	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	06.07.19 18:50	U	
Total BTEX		<0.000345		0.000345	mg/kg	06.07.19 18:50	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	88	70 - 130	%		
4-Bromofluorobenzene	87	70 - 130	%		

Sample Id: **7679621-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7679621-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: SCM % Moist: Tech: DVM

Seq Number: 3091855 Date Prep: 06.10.19 08.30

Prep seq: 7679621

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.11.19 02:24	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	06.11.19 02:24	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	06.11.19 02:24	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.11.19 02:24	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	06.11.19 02:24	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	06.11.19 02:24	U	
Total BTEX		<0.000342		0.000342	mg/kg	06.11.19 02:24	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	110	70 - 130	%		
4-Bromofluorobenzene	107	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: EK Queens Reclamation

Work Orders : 626141, **Project ID:**

Lab Batch #: 3091580 **Sample:** 7679457-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/07/19 04:19

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	70-130	
4-Bromofluorobenzene	0.0290	0.0300	97	70-130	

Lab Batch #: 3091580 **Sample:** 7679457-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/07/19 04:38

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	70-130	
4-Bromofluorobenzene	0.0319	0.0300	106	70-130	

Lab Batch #: 3091580 **Sample:** 626138-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/07/19 04:57

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	70-130	
4-Bromofluorobenzene	0.0320	0.0300	107	70-130	

Lab Batch #: 3091580 **Sample:** 626138-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/07/19 05:16

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	70-130	
4-Bromofluorobenzene	0.0317	0.0300	106	70-130	

Lab Batch #: 3091580 **Sample:** 7679457-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/07/19 05:52

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	70-130	
4-Bromofluorobenzene	0.0258	0.0300	86	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: EK Queens Reclamation

Work Orders : 626141, **Project ID:**

Lab Batch #: 3091758 **Sample:** 7679574-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/07/19 17:09

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	70-130	
4-Bromofluorobenzene	0.0314	0.0300	105	70-130	

Lab Batch #: 3091758 **Sample:** 7679574-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/07/19 17:29

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	70-130	
4-Bromofluorobenzene	0.0318	0.0300	106	70-130	

Lab Batch #: 3091758 **Sample:** 626141-011 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/07/19 17:49

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	70-130	
4-Bromofluorobenzene	0.0227	0.0300	76	70-130	

Lab Batch #: 3091758 **Sample:** 626141-011 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/07/19 18:09

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0327	0.0300	109	70-130	
4-Bromofluorobenzene	0.0294	0.0300	98	70-130	

Lab Batch #: 3091758 **Sample:** 7679574-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/07/19 18:50

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	70-130	
4-Bromofluorobenzene	0.0261	0.0300	87	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: EK Queens Reclamation

Work Orders : 626141, **Project ID:**

Lab Batch #: 3091855 **Sample:** 7679621-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/11/19 00:50

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	70-130	
4-Bromofluorobenzene	0.0295	0.0300	98	70-130	

Lab Batch #: 3091855 **Sample:** 7679621-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/11/19 01:09

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	70-130	
4-Bromofluorobenzene	0.0293	0.0300	98	70-130	

Lab Batch #: 3091855 **Sample:** 627068-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/11/19 01:28

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	70-130	
4-Bromofluorobenzene	0.0357	0.0300	119	70-130	

Lab Batch #: 3091855 **Sample:** 627068-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/11/19 01:47

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	70-130	
4-Bromofluorobenzene	0.0353	0.0300	118	70-130	

Lab Batch #: 3091855 **Sample:** 7679621-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/11/19 02:24

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0331	0.0300	110	70-130	
4-Bromofluorobenzene	0.0320	0.0300	107	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: EK Queens Reclamation

Work Orders : 626141, **Project ID:**

Lab Batch #: 3090914 **Sample:** 7679062-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/31/19 12:32

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.1	100	97	70-135	
o-Terphenyl	48.3	50.0	97	70-135	

Lab Batch #: 3090914 **Sample:** 7679062-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/31/19 12:51

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	60.7	50.0	121	70-135	

Lab Batch #: 3090914 **Sample:** 7679062-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/31/19 13:11

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	100	126	70-135	
o-Terphenyl	53.8	50.0	108	70-135	

Lab Batch #: 3090914 **Sample:** 625612-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/31/19 13:50

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	99.9	122	70-135	
o-Terphenyl	58.8	50.0	118	70-135	

Lab Batch #: 3090914 **Sample:** 625612-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/31/19 14:10

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.9	119	70-135	
o-Terphenyl	52.8	50.0	106	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: EK Queens Reclamation

Work Orders : 626141, **Project ID:**

Lab Batch #: 3091214 **Sample:** 7679154-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/02/19 21:01

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.8	100	100	70-135	
o-Terphenyl	49.6	50.0	99	70-135	

Lab Batch #: 3091214 **Sample:** 7679154-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/02/19 21:20

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	58.3	50.0	117	70-135	

Lab Batch #: 3091214 **Sample:** 7679154-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/02/19 21:40

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	61.5	50.0	123	70-135	

Lab Batch #: 3091214 **Sample:** 625896-110 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/02/19 22:19

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	99.9	120	70-135	
o-Terphenyl	54.7	50.0	109	70-135	

Lab Batch #: 3091214 **Sample:** 625896-110 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/02/19 22:38

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	99.7	127	70-135	
o-Terphenyl	57.9	49.9	116	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: EK Queens Reclamation

Work Order #: 626141 **Project ID:**

Analyst: SCM **Date Prepared:** 06/06/2019 **Date Analyzed:** 06/07/2019

Lab Batch ID: 3091580 **Sample:** 7679457-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 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
Benzene	<0.000382	0.0992	0.0913	92	0.100	0.0951	95	4	70-130	35	
Toluene	<0.000452	0.0992	0.0892	90	0.100	0.0927	93	4	70-130	35	
Ethylbenzene	<0.000560	0.0992	0.0966	97	0.100	0.0998	100	3	70-130	35	
m_p-Xylenes	<0.00101	0.198	0.197	99	0.200	0.204	102	3	70-130	35	
o-Xylene	<0.000342	0.0992	0.0976	98	0.100	0.103	103	5	70-130	35	

Analyst: SCM **Date Prepared:** 06/07/2019 **Date Analyzed:** 06/07/2019

Lab Batch ID: 3091758 **Sample:** 7679574-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 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
Benzene	<0.000383	0.0994	0.0939	94	0.101	0.0997	99	6	70-130	35	
Toluene	<0.000453	0.0994	0.0936	94	0.101	0.0987	98	5	70-130	35	
Ethylbenzene	<0.000561	0.0994	0.104	105	0.101	0.109	108	5	70-130	35	
m_p-Xylenes	<0.00101	0.199	0.213	107	0.201	0.224	111	5	70-130	35	
o-Xylene	<0.000342	0.0994	0.104	105	0.101	0.109	108	5	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: EK Queens Reclamation

Work Order #: 626141 **Project ID:**

Analyst: SCM **Date Prepared:** 06/10/2019 **Date Analyzed:** 06/11/2019

Lab Batch ID: 3091855 **Sample:** 7679621-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 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
Benzene	<0.000386	0.100	0.0999	100	0.100	0.0853	85	16	70-130	35	
Toluene	<0.000457	0.100	0.104	104	0.100	0.0903	90	14	70-130	35	
Ethylbenzene	<0.000566	0.100	0.107	107	0.100	0.0934	93	14	70-130	35	
m_p-Xylenes	<0.00102	0.200	0.213	107	0.201	0.187	93	13	70-130	35	
o-Xylene	<0.000345	0.100	0.106	106	0.100	0.0931	93	13	70-130	35	

Analyst: CHE **Date Prepared:** 06/03/2019 **Date Analyzed:** 06/05/2019

Lab Batch ID: 3091325 **Sample:** 7679148-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	<0.858	250	232	93	250	232	93	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: EK Queens Reclamation

Work Order #: 626141 **Project ID:**

Analyst: ARM **Date Prepared:** 05/31/2019 **Date Analyzed:** 05/31/2019

Lab Batch ID: 3090914 **Sample:** 7679062-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1150	115	1000	1180	118	3	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1080	108	1000	1120	112	4	70-135	20	

Analyst: ARM **Date Prepared:** 06/02/2019 **Date Analyzed:** 06/02/2019

Lab Batch ID: 3091214 **Sample:** 7679154-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1190	119	1000	1060	106	12	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1190	119	1000	999	100	17	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: EK Queens Reclamation

Work Order # 626141 **Project ID:**

Lab Batch ID: 3091580 **QC- Sample ID:** 626138-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/07/2019 **Date Prepared:** 06/06/2019 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000384	0.0998	0.0939	94	0.100	0.0931	93	1	70-130	35	
Toluene	0.00119	0.0998	0.0910	90	0.100	0.0897	89	1	70-130	35	
Ethylbenzene	0.000575	0.0998	0.0970	97	0.100	0.0954	95	2	70-130	35	
m_p-Xylenes	0.00163	0.200	0.199	99	0.200	0.197	98	1	70-130	35	
o-Xylene	0.00107	0.0998	0.100	99	0.100	0.0990	98	1	70-130	35	

Lab Batch ID: 3091758 **QC- Sample ID:** 626141-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/07/2019 **Date Prepared:** 06/07/2019 **Analyst:** SCM

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	0.0785	79	0.0992	0.0993	100	23	70-130	35	
Toluene	0.000655	0.100	0.0873	87	0.0992	0.0982	98	12	70-130	35	
Ethylbenzene	<0.000565	0.100	0.0920	92	0.0992	0.106	107	14	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.183	92	0.198	0.214	108	16	70-130	35	
o-Xylene	0.000403	0.100	0.0897	89	0.0992	0.104	104	15	70-130	35	

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: EK Queens Reclamation

Work Order # 626141 **Project ID:**

Lab Batch ID: 3091855 **QC- Sample ID:** 627068-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/11/2019 **Date Prepared:** 06/10/2019 **Analyst:** SCM

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	0.000427	0.100	0.0389	38	0.0998	0.0384	38	1	70-130	35	X
Toluene	0.000676	0.100	0.0540	53	0.0998	0.0489	48	10	70-130	35	X
Ethylbenzene	<0.000567	0.100	0.0560	56	0.0998	0.0454	45	21	70-130	35	X
m_p-Xylenes	<0.00102	0.201	0.0944	47	0.200	0.0753	38	23	70-130	35	X
o-Xylene	0.000487	0.100	0.0492	49	0.0998	0.0410	41	18	70-130	35	X

Lab Batch ID: 3091325 **QC- Sample ID:** 626141-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/05/2019 **Date Prepared:** 06/03/2019 **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	<0.853	249	252	101	249	253	102	0	90-110	20	

Lab Batch ID: 3091325 **QC- Sample ID:** 626141-008 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/05/2019 **Date Prepared:** 06/03/2019 **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	253	100	253	253	100	0	90-110	20	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: EK Queens Reclamation

Work Order # 626141 **Project ID:**

Lab Batch ID: 3090914 **QC- Sample ID:** 625612-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/31/2019 **Date Prepared:** 05/31/2019 **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)	8.94	999	1040	103	999	1040	103	0	70-135	20	
Diesel Range Organics (DRO)	<8.12	999	1010	101	999	1020	102	1	70-135	20	

Lab Batch ID: 3091214 **QC- Sample ID:** 625896-110 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/02/2019 **Date Prepared:** 06/02/2019 **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)	8.21	999	1080	107	997	1200	120	11	70-135	20	
Diesel Range Organics (DRO)	<8.12	999	1040	104	997	1200	120	14	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.

CHAIN OF CUSTODY

XENCO LABORATORIES
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Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Job # 420141

Client / Reporting Information

Company Name / Branch: Tasman Geosciences, LLC
Company Address: 2620 W Marland Bld. Hobbs, NM 8820
Email: zconder@tasman-geo.com
Phone No: 806-724-5943
Project Contact: Zach Conder
Samplers's Name: BO

Project Information

Project Name/Number: EK Queen Reclamation
Project Location: Lea County, N
Invoice To: PAALP C/O Amber Groves
Invoice:

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: TPH 8015 M Ext	Chloride SM 4500	BTEX 8021B	RCI	TCLP RCRA8	NORM	Paint Filter	TCLP Benzene			Field Comments
1	HA-1 SS	Surf.	5/28/2019		S	1									X	X	X								
2	HA-1 @ 1'	1'	5/28/2019		S	1									X		X								
3	HA-1 @ 2'	2'	5/28/2019		S	1									X	X	X								
4	HA-2 SS	Surf.	5/28/2019		S	1									X	X	X								
5	HA-2 @ 1'	1'	5/28/2019		S	1									X		X								
6	HA-2 @ 2'	2'	5/28/2019		S	1									X		X								
7	HA-2 @ 3'	3'	5/28/2019		S	1									X	X	X								
8	HA-3 SS	Surf.	5/28/2019		S	1									X	X	X								
9	HA-3 @ 1'	1'	5/28/2019		S	1									X		X								
10	HA-3 @ 2'	2'	5/28/2019		S	1									X		X								
11	HA-3 @ 3'	3'	5/28/2019		S	1									X	X	X								
12																									

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [X] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

Please email results to: zconder@tasman-geo.com
bgriffin@tasman-geo.com algroves@paalp.com
bdennis@tasman-geo.com

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		5/30/19 2:15	Brittany Cox	Brittany Cox	5/30 2:30	
2						5/21/19 1354
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
						On 1.3

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses 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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Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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CHAIN OF CUSTODY

Page 2 Of 2

Xenco Job # 426191

Client / Reporting Information

Company Name / Branch: Tasman Geosciences, LLC

Company Address: 2620 W Marland Bld. Hobbs, NM 8820

Email: zconder@tasman-geo.com

Phone No: 806-724-5943

Project Contact: Zach Conder

Samplers's Name: BD

Project Information

Project Name/Number: EK Queen Reclamation

Project Location: Lea County, N

Invoice To: PAALP C/O Amber Groves

Invoice:

Analytical Information

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved 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	HA-4 SS	Surf.	5/28/2019		S	1									X	X	X								
2	HA-4 @ 1'	1'	5/28/2019		S	1									X		X								
3	HA-4 @ 2'	2'	5/28/2019		S	1									X		X								
4	HA-4 @ 3'	3'	5/28/2019		S	1									X	X	X								
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [x] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

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

bgriffin@tasman-geo.com algroves@paalp.com

bdennis@tasman-geo.com

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		5/30/19 2:15	1 Brittany Cox	2 Brittany Cox	5/30 2:30	2
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. 1.3 / Thermo. Corr. Factor 1.000

5/31/19 1554

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tasman Geosciences, LLC

Date/ Time Received: 05/31/2019 01:54:00 PM

Work Order #: 626141

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: 05/31/2019
Brianna Teel

Checklist reviewed by: Date: 05/31/2019
John Builes

Analytical Report 627900

for

Tasman Geosciences, LLC

Project Manager: Zach Conder

EK Queen

03-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)

Table of Contents

03-JUL-19

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

Reference: XENCO Report No(s): **627900**
EK Queen
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) 627900. 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. 627900 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

John Builes
Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

Sample Cross Reference 627900

Tasman Geosciences, LLC, Hobbs, NM

EK Queen

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
HA-2 @ 4'	S	06-13-19 09:00	4 ft	627900-001
HA-2 @ 5'	S	06-13-19 09:10	5 ft	627900-002
HA-2 @ 6'	S	06-13-19 09:20	6 ft	627900-003
HA-2 @ 7'	S	06-13-19 09:30	7 ft	627900-004
HA-2 @ 8'	S	06-13-19 09:40	8 ft	627900-005
HA-2 @ 9'	S	06-13-19 09:50	9 ft	627900-006
HA-2 @ 10'	S	06-13-19 10:00	10 ft	627900-007
HA-4 @ 4'	S	06-13-19 10:10	4 ft	627900-008
HA-4 @ 5'	S	06-13-19 10:20	5 ft	627900-009

CASE NARRATIVE

Client Name: Tasman Geosciences, LLC
Project Name: EK Queen

Project ID:
Work Order Number(s): *627900*

Report Date: *03-JUL-19*
Date Received: *06/17/2019*

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-3092761 TPH by SW8015 Mod
Surrogate 1-Chlorooctane recovered above QC limits. Samples affected are: 7680234-1-BKS,7680234-1-BLK,627900-009.

Batch: LBA-3093492 BTEX by SW 8260C
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results
627900

Tasman Geosciences, LLC, Hobbs, NM
EK Queen

Sample Id: **HA-2 @ 4'** Matrix: Soil Sample Depth: 4 ft

Lab Sample Id: 627900-001 Date Collected: 06.13.19 09.00 Date Received: 06.17.19 07.25

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: CHE % Moist: Tech: CHE

Seq Number: 3092967 Date Prep: 06.19.19 09.10

Prep seq: 7680203

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.865	5.04	0.865	mg/kg	06.19.19 14:53	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3092761 Date Prep: 06.18.19 07.00

Prep seq: 7680234

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**15.9**	15.0	7.99	mg/kg	06.18.19 18:35		1
Diesel Range Organics (DRO)	C10C28DRO	**95.9**	15.0	8.12	mg/kg	06.18.19 18:35		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**28.6**	15.0	8.12	mg/kg	06.18.19 18:35		1
Total TPH	PHC635	**140**		7.99	mg/kg	06.18.19 18:35		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	126	70 - 135	%		
o-Terphenyl	94	70 - 135	%		

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Tasman Geosciences, LLC, Hobbs, NM

EK Queen

Sample Id: **HA-2 @ 4'** Matrix: Soil Sample Depth: 4 ft

Lab Sample Id: 627900-001 Date Collected: 06.13.19 09.00 Date Received: 06.17.19 07.25

Analytical Method: BTEX by SW 8260C Prep Method: 5030B

Analyst: HOP % Moist: Tech: HOP

Seq Number: 3093492 Date Prep: 06.25.19 18.15

Subcontractor: SUB: T104704215-19-29 Prep seq: 7680723

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000193	0.00100	0.000193	mg/kg	06.26.19 00:52	U	1
Toluene	108-88-3	<0.000130	0.00100	0.000130	mg/kg	06.26.19 00:52	U	1
Ethylbenzene	100-41-4	<0.0000959	0.00100	0.0000959	mg/kg	06.26.19 00:52	U	1
m,p-Xylenes	179601-23-1	<0.000363	0.00201	0.000363	mg/kg	06.26.19 00:52	U	1
o-Xylene	95-47-6	<0.000230	0.00100	0.000230	mg/kg	06.26.19 00:52	U	1
Total Xylenes	1330-20-7	<0.000230		0.000230	mg/kg	06.26.19 00:52	U	
Total BTEX		<0.0000959		0.0000959	mg/kg	06.26.19 00:52	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	104	73 - 132	%		
1,2-Dichloroethane-D4	103	73 - 124	%		
Toluene-D8	98	69 - 124	%		
4-Bromofluorobenzene	97	58 - 152	%		

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Tasman Geosciences, LLC, Hobbs, NM

EK Queen

Sample Id: **HA-2 @ 5'** Matrix: Soil Sample Depth: 5 ft

Lab Sample Id: 627900-002 Date Collected: 06.13.19 09.10 Date Received: 06.17.19 07.25

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3092761 Date Prep: 06.18.19 07.00

Prep seq: 7680234

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**133**	15.0	7.99	mg/kg	06.18.19 19:00		1
Diesel Range Organics (DRO)	C10C28DRO	**1890**	15.0	8.12	mg/kg	06.18.19 19:00		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**102**	15.0	8.12	mg/kg	06.18.19 19:00		1
Total TPH	PHC635	**2130**		7.99	mg/kg	06.18.19 19:00		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	128	70 - 135	%		
o-Terphenyl	105	70 - 135	%		

Analytical Method: BTEX by SW 8260C Prep Method: 5030B

Analyst: HOP % Moist: Tech: HOP

Seq Number: 3093492 Date Prep: 06.25.19 18.15

Subcontractor: SUB: T104704215-19-29 Prep seq: 7680723

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000192	0.00100	0.000192	mg/kg	06.26.19 04:12	U	1
Toluene	108-88-3	<0.000129	0.00100	0.000129	mg/kg	06.26.19 04:12	U	1
Ethylbenzene	100-41-4	<0.0000955	0.00100	0.0000955	mg/kg	06.26.19 04:12	U	1
m,p-Xylenes	179601-23-1	**0.00133**	0.00200	0.000362	mg/kg	06.26.19 04:12	J	1
o-Xylene	95-47-6	**0.00130**	0.00100	0.000229	mg/kg	06.26.19 04:12		1
Total Xylenes	1330-20-7	**0.00263**		0.000229	mg/kg	06.26.19 04:12		
Total BTEX		**0.00263**		0.0000955	mg/kg	06.26.19 04:12		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	90	73 - 132	%		
1,2-Dichloroethane-D4	108	73 - 124	%		
Toluene-D8	95	69 - 124	%		
4-Bromofluorobenzene	94	58 - 152	%		

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Sample Id: **HA-2 @ 6'** Matrix: Soil Sample Depth: 6 ft

Lab Sample Id: 627900-003 Date Collected: 06.13.19 09.20 Date Received: 06.17.19 07.25

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3092761 Date Prep: 06.18.19 07.00

Prep seq: 7680234

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**300**	15.0	8.00	mg/kg	06.18.19 19:25		1
Diesel Range Organics (DRO)	C10C28DRO	**3360**	15.0	8.13	mg/kg	06.18.19 19:25		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**190**	15.0	8.13	mg/kg	06.18.19 19:25		1
Total TPH	PHC635	**3850**		8.00	mg/kg	06.18.19 19:25		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	120	70 - 135	%		
o-Terphenyl	85	70 - 135	%		

Analytical Method: BTEX by SW 8260C Prep Method: 5030B

Analyst: HOP % Moist: Tech: HOP

Seq Number: 3093492 Date Prep: 06.25.19 18.15

Subcontractor: SUB: T104704215-19-29 Prep seq: 7680723

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000192	0.000998	0.000192	mg/kg	06.26.19 03:32	U	1
Toluene	108-88-3	<0.000129	0.000998	0.000129	mg/kg	06.26.19 03:32	U	1
Ethylbenzene	100-41-4	**0.000529**	0.000998	0.0000953	mg/kg	06.26.19 03:32	J	1
m,p-Xylenes	179601-23-1	<0.000361	0.00200	0.000361	mg/kg	06.26.19 03:32	U	1
o-Xylene	95-47-6	<0.000229	0.000998	0.000229	mg/kg	06.26.19 03:32	U	1
Total Xylenes	1330-20-7	<0.000229		0.000229	mg/kg	06.26.19 03:32	U	
Total BTEX		**0.000529**		0.0000953	mg/kg	06.26.19 03:32	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	95	73 - 132	%		
1,2-Dichloroethane-D4	106	73 - 124	%		
Toluene-D8	91	69 - 124	%		
4-Bromofluorobenzene	109	58 - 152	%		

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Sample Id: **HA-2 @ 7'** Matrix: Soil Sample Depth: 7 ft

Lab Sample Id: 627900-004 Date Collected: 06.13.19 09.30 Date Received: 06.17.19 07.25

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3092761 Date Prep: 06.18.19 07.00

Prep seq: 7680234

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**223**	15.0	7.99	mg/kg	06.18.19 19:50		1
Diesel Range Organics (DRO)	C10C28DRO	**3150**	15.0	8.11	mg/kg	06.18.19 19:50		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**204**	15.0	8.11	mg/kg	06.18.19 19:50		1
Total TPH	PHC635	**3580**		7.99	mg/kg	06.18.19 19:50		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	120	70 - 135	%		
o-Terphenyl	90	70 - 135	%		

Analytical Method: BTEX by SW 8260C Prep Method: 5030B

Analyst: HOP % Moist: Tech: HOP

Seq Number: 3093492 Date Prep: 06.25.19 18.15

Subcontractor: SUB: T104704215-19-29 Prep seq: 7680723

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000193	0.00100	0.000193	mg/kg	06.26.19 02:52	U	1
Toluene	108-88-3	<0.000130	0.00100	0.000130	mg/kg	06.26.19 02:52	U	1
Ethylbenzene	100-41-4	**0.00508**	0.00100	0.0000957	mg/kg	06.26.19 02:52		1
m,p-Xylenes	179601-23-1	**0.00334**	0.00200	0.000362	mg/kg	06.26.19 02:52		1
o-Xylene	95-47-6	**0.00352**	0.00100	0.000230	mg/kg	06.26.19 02:52		1
Total Xylenes	1330-20-7	**0.00686**		0.000230	mg/kg	06.26.19 02:52		
Total BTEX		**0.0119**		0.0000957	mg/kg	06.26.19 02:52		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	97	73 - 132	%		
1,2-Dichloroethane-D4	98	73 - 124	%		
Toluene-D8	92	69 - 124	%		
4-Bromofluorobenzene	120	58 - 152	%		

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Sample Id: **HA-2 @ 8'** Matrix: Soil Sample Depth: 8 ft

Lab Sample Id: 627900-005 Date Collected: 06.13.19 09.40 Date Received: 06.17.19 07.25

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3092761 Date Prep: 06.18.19 07.00

Prep seq: 7680234

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**10.2**	15.0	7.99	mg/kg	06.18.19 20:15	J	1
Diesel Range Organics (DRO)	C10C28DRO	**435**	15.0	8.11	mg/kg	06.18.19 20:15		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**78.2**	15.0	8.11	mg/kg	06.18.19 20:15		1
Total TPH	PHC635	**523**		7.99	mg/kg	06.18.19 20:15		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	131	70 - 135	%		
o-Terphenyl	78	70 - 135	%		

Analytical Method: BTEX by SW 8260C Prep Method: 5030B

Analyst: HOP % Moist: Tech: HOP

Seq Number: 3093492 Date Prep: 06.25.19 18.15

Subcontractor: SUB: T104704215-19-29 Prep seq: 7680723

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000192	0.00100	0.000192	mg/kg	06.26.19 02:32	U	1
Toluene	108-88-3	<0.000129	0.00100	0.000129	mg/kg	06.26.19 02:32	U	1
Ethylbenzene	100-41-4	<0.0000955	0.00100	0.0000955	mg/kg	06.26.19 02:32	U	1
m,p-Xylenes	179601-23-1	<0.000362	0.00200	0.000362	mg/kg	06.26.19 02:32	U	1
o-Xylene	95-47-6	<0.000229	0.00100	0.000229	mg/kg	06.26.19 02:32	U	1
Total Xylenes	1330-20-7	<0.000229		0.000229	mg/kg	06.26.19 02:32	U	
Total BTEX		<0.0000955		0.0000955	mg/kg	06.26.19 02:32	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	101	73 - 132	%		
1,2-Dichloroethane-D4	108	73 - 124	%		
Toluene-D8	99	69 - 124	%		
4-Bromofluorobenzene	83	58 - 152	%		

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Sample Id: **HA-2 @ 9'** Matrix: Soil Sample Depth: 9 ft

Lab Sample Id: 627900-006 Date Collected: 06.13.19 09.50 Date Received: 06.17.19 07.25

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3092761 Date Prep: 06.18.19 07.00

Prep seq: 7680234

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	06.18.19 20:39	U	1
Diesel Range Organics (DRO)	C10C28DRO	**34.8**	14.9	8.10	mg/kg	06.18.19 20:39		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**25.3**	14.9	8.10	mg/kg	06.18.19 20:39		1
Total TPH	PHC635	**60.1**		7.97	mg/kg	06.18.19 20:39		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	118	70 - 135	%		
o-Terphenyl	72	70 - 135	%		

Analytical Method: BTEX by SW 8260C Prep Method: 5030B

Analyst: HOP % Moist: Tech: HOP

Seq Number: 3093492 Date Prep: 06.25.19 18.15

Subcontractor: SUB: T104704215-19-29 Prep seq: 7680723

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000192	0.00100	0.000192	mg/kg	06.26.19 02:12	U	1
Toluene	108-88-3	<0.000129	0.00100	0.000129	mg/kg	06.26.19 02:12	U	1
Ethylbenzene	100-41-4	<0.0000955	0.00100	0.0000955	mg/kg	06.26.19 02:12	U	1
m,p-Xylenes	179601-23-1	<0.000362	0.00200	0.000362	mg/kg	06.26.19 02:12	U	1
o-Xylene	95-47-6	<0.000229	0.00100	0.000229	mg/kg	06.26.19 02:12	U	1
Total Xylenes	1330-20-7	<0.000229		0.000229	mg/kg	06.26.19 02:12	U	
Total BTEX		<0.0000955		0.0000955	mg/kg	06.26.19 02:12	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	103	73 - 132	%		
1,2-Dichloroethane-D4	109	73 - 124	%		
Toluene-D8	97	69 - 124	%		
4-Bromofluorobenzene	92	58 - 152	%		

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Tasman Geosciences, LLC, Hobbs, NM

EK Queen

Sample Id: **HA-2 @ 10'** Matrix: Soil Sample Depth: 10 ft

Lab Sample Id: 627900-007 Date Collected: 06.13.19 10.00 Date Received: 06.17.19 07.25

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: CHE % Moist: Tech: CHE

Seq Number: 3092967 Date Prep: 06.19.19 09.10

Prep seq: 7680203

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**4.13**	5.03	0.864	mg/kg	06.19.19 15:01	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3092761 Date Prep: 06.18.19 07.00

Prep seq: 7680234

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**10.6**	15.0	7.98	mg/kg	06.18.19 21:04	J	1
Diesel Range Organics (DRO)	C10C28DRO	**91.0**	15.0	8.10	mg/kg	06.18.19 21:04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**19.7**	15.0	8.10	mg/kg	06.18.19 21:04		1
Total TPH	PHC635	**121**		7.98	mg/kg	06.18.19 21:04		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	131	70 - 135	%		
o-Terphenyl	77	70 - 135	%		

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Tasman Geosciences, LLC, Hobbs, NM

EK Queen

Sample Id:	**HA-2 @ 10'**	Matrix:	Soil	Sample Depth:	10 ft
Lab Sample Id:	627900-007	Date Collected:	06.13.19 10.00	Date Received:	06.17.19 07.25
Analytical Method:	BTEX by SW 8260C			Prep Method:	5030B
Analyst:	HOP	% Moist:		Tech:	HOP
Seq Number:	3093492	Date Prep:	06.25.19 18.15		
Subcontractor:	SUB: T104704215-19-29	Prep seq:	7680723		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000193	0.00100	0.000193	mg/kg	06.26.19 01:12	U	1
Toluene	108-88-3	<0.000130	0.00100	0.000130	mg/kg	06.26.19 01:12	U	1
Ethylbenzene	100-41-4	<0.0000959	0.00100	0.0000959	mg/kg	06.26.19 01:12	U	1
m,p-Xylenes	179601-23-1	<0.000363	0.00201	0.000363	mg/kg	06.26.19 01:12	U	1
o-Xylene	95-47-6	<0.000230	0.00100	0.000230	mg/kg	06.26.19 01:12	U	1
Total Xylenes	1330-20-7	<0.000230		0.000230	mg/kg	06.26.19 01:12	U	
Total BTEX		<0.0000959		0.0000959	mg/kg	06.26.19 01:12	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	103	73 - 132	%		
1,2-Dichloroethane-D4	105	73 - 124	%		
Toluene-D8	98	69 - 124	%		
4-Bromofluorobenzene	91	58 - 152	%		

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Sample Id: **HA-4 @ 4'** Matrix: Soil Sample Depth: 4 ft

Lab Sample Id: 627900-008 Date Collected: 06.13.19 10.10 Date Received: 06.17.19 07.25

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: CHE % Moist: Tech: CHE

Seq Number: 3092967 Date Prep: 06.19.19 09.10

Prep seq: 7680203

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.855	4.98	0.855	mg/kg	06.19.19 15:08	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3092761 Date Prep: 06.18.19 07.00

Prep seq: 7680234

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	06.18.19 21:29	U	1
Diesel Range Organics (DRO)	C10C28DRO	**15.8**	15.0	8.10	mg/kg	06.18.19 21:29		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**13.4**	15.0	8.10	mg/kg	06.18.19 21:29	J	1
Total TPH	PHC635	**29.2**		7.98	mg/kg	06.18.19 21:29		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	126	70 - 135	%		
o-Terphenyl	78	70 - 135	%		

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Tasman Geosciences, LLC, Hobbs, NM

EK Queen

Sample Id: **HA-4 @ 4'** Matrix: Soil Sample Depth: 4 ft

Lab Sample Id: 627900-008 Date Collected: 06.13.19 10.10 Date Received: 06.17.19 07.25

Analytical Method: BTEX by SW 8260C Prep Method: 5030B

Analyst: HOP % Moist: Tech: HOP

Seq Number: 3093492 Date Prep: 06.25.19 18.15

Subcontractor: SUB: T104704215-19-29 Prep seq: 7680723

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000192	0.000998	0.000192	mg/kg	06.26.19 00:32	U	1
Toluene	108-88-3	<0.000129	0.000998	0.000129	mg/kg	06.26.19 00:32	U	1
Ethylbenzene	100-41-4	<0.0000953	0.000998	0.0000953	mg/kg	06.26.19 00:32	U	1
m,p-Xylenes	179601-23-1	<0.000361	0.00200	0.000361	mg/kg	06.26.19 00:32	U	1
o-Xylene	95-47-6	<0.000229	0.000998	0.000229	mg/kg	06.26.19 00:32	U	1
Total Xylenes	1330-20-7	<0.000229		0.000229	mg/kg	06.26.19 00:32	U	
Total BTEX		<0.0000953		0.0000953	mg/kg	06.26.19 00:32	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	98	73 - 132	%		
1,2-Dichloroethane-D4	105	73 - 124	%		
Toluene-D8	94	69 - 124	%		
4-Bromofluorobenzene	88	58 - 152	%		

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EK Queen

Sample Id: **HA-4 @ 5'** Matrix: Soil Sample Depth: 5 ft

Lab Sample Id: 627900-009 Date Collected: 06.13.19 10.20 Date Received: 06.17.19 07.25

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: CHE % Moist: Tech: CHE

Seq Number: 3092967 Date Prep: 06.19.19 09.10

Prep seq: 7680203

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.860	5.01	0.860	mg/kg	06.19.19 15:15	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3092761 Date Prep: 06.18.19 07.00

Prep seq: 7680234

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	06.18.19 21:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.12	15.0	8.12	mg/kg	06.18.19 21:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.12	15.0	8.12	mg/kg	06.18.19 21:53	U	1
Total TPH	PHC635	<7.99		7.99	mg/kg	06.18.19 21:53	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	139	70 - 135	%		**
o-Terphenyl	91	70 - 135	%		

Certificate of Analytical Results
627900

Tasman Geosciences, LLC, Hobbs, NM

EK Queen

Sample Id: **HA-4 @ 5'** Matrix: Soil Sample Depth: 5 ft

Lab Sample Id: 627900-009 Date Collected: 06.13.19 10.20 Date Received: 06.17.19 07.25

Analytical Method: BTEX by SW 8260C Prep Method: 5030B

Analyst: HOP % Moist: Tech: HOP

Seq Number: 3093492 Date Prep: 06.25.19 18.15

Subcontractor: SUB: T104704215-19-29 Prep seq: 7680723

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000194	0.00101	0.000194	mg/kg	06.26.19 00:12	U	1
Toluene	108-88-3	<0.000130	0.00101	0.000130	mg/kg	06.26.19 00:12	U	1
Ethylbenzene	100-41-4	<0.0000961	0.00101	0.0000961	mg/kg	06.26.19 00:12	U	1
m,p-Xylenes	179601-23-1	<0.000364	0.00201	0.000364	mg/kg	06.26.19 00:12	U	1
o-Xylene	95-47-6	<0.000231	0.00101	0.000231	mg/kg	06.26.19 00:12	U	1
Total Xylenes	1330-20-7	<0.000231		0.000231	mg/kg	06.26.19 00:12	U	
Total BTEX		<0.0000961		0.0000961	mg/kg	06.26.19 00:12	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	100	73 - 132	%		
1,2-Dichloroethane-D4	109	73 - 124	%		
Toluene-D8	99	69 - 124	%		
4-Bromofluorobenzene	85	58 - 152	%		

Certificate of Analytical Results
627900

Tasman Geosciences, LLC, Hobbs, NM

EK Queen

Sample Id: **7680203-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7680203-1-BLK Date Collected: Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: CHE % Moist: Tech: CHE

Seq Number: 3092967 Date Prep: 06.19.19 09.10

Prep seq: 7680203

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	06.19.19 09:18	U	1

Sample Id: **7680234-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7680234-1-BLK Date Collected: Date Received:

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3092761 Date Prep: 06.18.19 07.00

Prep seq: 7680234

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	06.18.19 11:07	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	06.18.19 11:07	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<8.13	15.0	8.13	mg/kg	06.18.19 11:07	U	1
Total TPH	PHC635	<8.00		8.00	mg/kg	06.18.19 11:07	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	145	70 - 135	%		**
o-Terphenyl	117	70 - 135	%		

Certificate of Analytical Results
627900

Tasman Geosciences, LLC, Hobbs, NM

EK Queen

Sample Id: **7680723-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7680723-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by SW 8260C Prep Method: 5035A

Analyst: HOP % Moist: Tech: HOP

Seq Number: 3093492 Date Prep: 06.25.19 18.15

Subcontractor: SUB: T104704215-19-29 Prep seq: 7680723

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000192	0.00100	0.000192	mg/kg	06.25.19 23:52	U	1
Toluene	108-88-3	<0.000129	0.00100	0.000129	mg/kg	06.25.19 23:52	U	1
Ethylbenzene	100-41-4	<0.0000955	0.00100	0.0000955	mg/kg	06.25.19 23:52	U	1
m,p-Xylenes	179601-23-1	<0.000362	0.00200	0.000362	mg/kg	06.25.19 23:52	U	1
o-Xylene	95-47-6	<0.000229	0.00100	0.000229	mg/kg	06.25.19 23:52	U	1
Total Xylenes	1330-20-7	<0.000229		0.000229	mg/kg	06.25.19 23:52	U	
Total BTEX		<0.0000955		0.0000955	mg/kg	06.25.19 23:52	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	97	74 - 126	%		
1,2-Dichloroethane-D4	106	80 - 120	%		
Toluene-D8	99	73 - 132	%		
4-Bromofluorobenzene	87	58 - 152	%		

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: EK Queen

Work Orders : 627900, **Project ID:**

Lab Batch #: 3093492 **Sample:** 7680723-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/25/19 21:52

BTEX by SW 8260C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0474	0.0500	95	74-126	
1,2-Dichloroethane-D4	0.0512	0.0500	102	80-120	
Toluene-D8	0.0492	0.0500	98	73-132	
4-Bromofluorobenzene	0.0523	0.0500	105	58-152	

Lab Batch #: 3093492 **Sample:** 7680723-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/25/19 22:13

BTEX by SW 8260C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0472	0.0500	94	74-126	
1,2-Dichloroethane-D4	0.0505	0.0500	101	80-120	
Toluene-D8	0.0481	0.0500	96	73-132	
4-Bromofluorobenzene	0.0531	0.0500	106	58-152	

Lab Batch #: 3093492 **Sample:** 627900-009 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/25/19 22:32

BTEX by SW 8260C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0500	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0533	0.0500	107	80-120	
Toluene-D8	0.0486	0.0500	97	73-132	
4-Bromofluorobenzene	0.0535	0.0500	107	58-152	

Lab Batch #: 3093492 **Sample:** 627900-009 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/25/19 22:52

BTEX by SW 8260C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0486	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0512	0.0500	102	80-120	
Toluene-D8	0.0476	0.0500	95	73-132	
4-Bromofluorobenzene	0.0511	0.0500	102	58-152	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: EK Queen

Work Orders : 627900, **Project ID:**

Lab Batch #: 3093492 **Sample:** 7680723-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/25/19 23:52

BTEX by SW 8260C Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0484	0.0500	97	74-126	
1,2-Dichloroethane-D4	0.0532	0.0500	106	80-120	
Toluene-D8	0.0495	0.0500	99	73-132	
4-Bromofluorobenzene	0.0435	0.0500	87	58-152	

Lab Batch #: 3092761 **Sample:** 7680234-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/18/19 11:07

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	145	100	145	70-135	**
o-Terphenyl	58.3	50.0	117	70-135	

Lab Batch #: 3092761 **Sample:** 7680234-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/18/19 11:31

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	140	100	140	70-135	**
o-Terphenyl	61.6	50.0	123	70-135	

Lab Batch #: 3092761 **Sample:** 7680234-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/18/19 11:56

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	52.0	50.0	104	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: EK Queen

Work Orders : 627900, **Project ID:**

Lab Batch #: 3092761 **Sample:** 627894-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/18/19 13:10

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

Lab Batch #: 3092761 **Sample:** 627894-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/18/19 13:35

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	99.8	127	70-135	
o-Terphenyl	62.5	49.9	125	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: EK Queen

Work Order #: 627900 **Project ID:**

Analyst: HOP **Date Prepared:** 06/25/2019 **Date Analyzed:** 06/25/2019

Lab Batch ID: 3093492 **Sample:** 7680723-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260C 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
Benzene	<0.000192	0.0500	0.0451	90	0.0500	0.0499	100	10	62-132	25	
Toluene	<0.000129	0.0500	0.0497	99	0.0500	0.0530	106	6	66-124	25	
Ethylbenzene	<0.0000955	0.0500	0.0494	99	0.0500	0.0530	106	7	71-134	25	
m,p-Xylenes	<0.000362	0.100	0.0992	99	0.100	0.106	106	7	69-128	25	
o-Xylene	<0.000229	0.0500	0.0475	95	0.0500	0.0514	103	8	72-131	25	

Analyst: CHE **Date Prepared:** 06/19/2019 **Date Analyzed:** 06/19/2019

Lab Batch ID: 3092967 **Sample:** 7680203-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
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: EK Queen

Work Order #: 627900 **Project ID:**

Analyst: ARM **Date Prepared:** 06/18/2019 **Date Analyzed:** 06/18/2019

Lab Batch ID: 3092761 **Sample:** 7680234-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1190	119	1000	1110	111	7	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1170	117	1000	1090	109	7	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: EK Queen

Work Order # : 627900 **Project ID:**

Lab Batch ID: 3093492 **QC- Sample ID:** 627900-009 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/25/2019 **Date Prepared:** 06/25/2019 **Analyst:** HOP

Reporting Units: mg/kg

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	<0.000191	0.0495	0.0430	87	0.0503	0.0427	85	1	62-132	25	
Toluene	<0.000128	0.0495	0.0458	93	0.0503	0.0461	92	1	66-124	25	
Ethylbenzene	<0.0000946	0.0495	0.0444	90	0.0503	0.0453	90	2	71-134	25	
m,p-Xylenes	<0.000358	0.0990	0.0872	88	0.101	0.0905	90	4	69-128	25	
o-Xylene	<0.000227	0.0495	0.0418	84	0.0503	0.0430	85	3	72-131	25	

Lab Batch ID: 3092967 **QC- Sample ID:** 627896-018 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/19/2019 **Date Prepared:** 06/19/2019 **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	181	251	422	96	251	422	96	0	90-110	20	

Lab Batch ID: 3092967 **QC- Sample ID:** 627901-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/19/2019 **Date Prepared:** 06/19/2019 **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	30.7	251	292	104	251	293	105	0	90-110	20	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: EK Queen

Work Order # : 627900 **Project ID:**

Lab Batch ID: 3092761 **QC- Sample ID:** 627894-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/18/2019 **Date Prepared:** 06/18/2019 **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)	11.0	1000	1130	112	998	1150	114	2	70-135	20	
Diesel Range Organics (DRO)	18.3	1000	1190	117	998	1140	112	4	70-135	20	

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.

Chain of Custody

Work Order No: 687900

XENCO LABORATORIES

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) www.xenco.com Page _____ of _____

Project Manager:	ZACH CONDER	Bill to: (if different)	
Company Name:	TASMAN GEOSCIENCES	Company Name:	PLAINS AAPL
Address:	2620 W. MARLAND BLD	Address:	Sp AMBER GROVES
City, State ZIP:	HOBBS, NM 88240	City, State ZIP:	
Phone:	806-724-5943	Email:	ZCONDER@TASMAN-GEO.COM

Work Order Comments

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

Project Name:	EK QUEEN	Turn Around	
Project Number:		Routine ☐	
P.O. Number:		Rush:	
Sampler's Name:	BECKY GRIFFIN	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Temperature (°C):	0.2/0.0	Thermometer ID	R8	
Received Intact:	(Yes) No			
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No (N/A)	Total Containers:	9	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	RCI	CHLORIDE 4500	TCLP BENZENE	TCLP RCRA 8	1D2M	PAINT FILTER	TPH	BTEX
HA-2@4'	S	6-13-19	9:00	4 FT	1		X					X	X
HA-2@5'			9:10	5 FT	1							X	X
HA-2@6'			9:20	6 FT	1							X	X
HA-2@7'			9:30	7 FT	1							X	X
HA-2@8'			9:40	8 FT	1							X	X
HA-2@9'			9:50	9 FT	1							X	X
HA-2@10'			10:00	10 FT	1		X					X	X
HA-4@4'			10:10	4 FT	1		X					X	X
HA-4@5'			10:20	5 FT	1		X					X	X

Work Order Notes

[redacted]
ALGROVES@PAALP.COM
bgriffin@TASMAN-GEO.COM
bdennis@TASMAN-GEO.COM
ZCONDER@TASMAN-GEO.COM
TAT starts the day received by the lab, if received by 4:30pm

Sample Comments

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 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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 Becky Griffin	Stephanie Rojas	6/14 12:59	2 Stephanie Rojas		6/14 1:36
3		6/17 0735	4		
5			6		

Revised Date 051418 Rev. 2018.1

Inter-Office Shipment

IOS Number : 42134

Date/Time: 06.24.2019 14:48
Lab# From: **Midland**
Lab# To: **Houston**
Created by: Jessica Kramer
Delivery Priority:
Air Bill No.: 775553778262
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
627900-001	S	HA-2 @ 4'	06.13.2019 09:00	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.27.2019 09:00	JHB	BZ BZME EBZ XYLENE	
627900-002	S	HA-2 @ 5'	06.13.2019 09:10	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.27.2019 09:10	JHB	BZ BZME EBZ XYLENE	
627900-003	S	HA-2 @ 6'	06.13.2019 09:20	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.27.2019 09:20	JHB	BZ BZME EBZ XYLENE	
627900-004	S	HA-2 @ 7'	06.13.2019 09:30	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.27.2019 09:30	JHB	BZ BZME EBZ XYLENE	
627900-005	S	HA-2 @ 8'	06.13.2019 09:40	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.27.2019 09:40	JHB	BZ BZME EBZ XYLENE	
627900-006	S	HA-2 @ 9'	06.13.2019 09:50	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.27.2019 09:50	JHB	BZ BZME EBZ XYLENE	
627900-007	S	HA-2 @ 10'	06.13.2019 10:00	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.27.2019 10:00	JHB	BZ BZME EBZ XYLENE	
627900-008	S	HA-4 @ 4'	06.13.2019 10:10	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.27.2019 10:10	JHB	BZ BZME EBZ XYLENE	
627900-009	S	HA-4 @ 5'	06.13.2019 10:20	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.27.2019 10:20	JHB	BZ BZME EBZ XYLENE	

Inter Office Shipment or Sample Comments:

SAMPLES BREAK HOLD 06/27

Relinquished By: Jessica Kramer
Jessica Kramer

Date Relinquished: 06.24.2019

Received By: Ashly Kowalski

Date Received: 06.25.2019 09:40

Cooler Temperature: 0.6

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 42134

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:** 06.24.2019 02.48 PM

Received By: Ashly Kowalski **Date Received:** 06.25.2019 09.40 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	.6	
#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:
SAMPLES BREAK HOLD 06/27

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____ Date: 06.25.2019
Ashly Kowalski

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tasman Geosciences, LLC

Date/ Time Received: 06/17/2019 07:25:00 AM

Work Order #: 627900

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambien

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	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)?	**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: 06/17/2019
Brianna Teel

Checklist reviewed by: Date: 06/18/2019
John Builes

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

September 12, 2019

ZACH CONDER

TASMAN GEOSCIENCES

6899 PECOS ST. UNIT C

DENVER, CO 80221

RE: EK QUEEN RECLAMATION

Enclosed are the results of analyses for samples received by the laboratory on 08/27/19 13:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES 6899 PECOS ST. UNIT C DENVER CO, 80221	Project: EK QUEEN RECLAMATION Project Number: NONE GIVEN Project Manager: ZACH CONDER Fax To:	Reported: 12-Sep-19 17:10

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WC	H902952-01	Soil	26-Aug-19 13:00	27-Aug-19 13:40

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES 6899 PECOS ST. UNIT C DENVER CO, 80221	Project: EK QUEEN RECLAMATION Project Number: NONE GIVEN Project Manager: ZACH CONDER Fax To:	Reported: 12-Sep-19 17:10

WC

H902952-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Chloride	**32.0**		16.0	mg/kg	4	9082924	AC	29-Aug-19	4500-Cl-B	
Ignitability	>140		50.0	°F	1	9081101	AC	29-Aug-19	ASTM D 93-80	
Paint Filter Test	FAILED			N/A	1	9082902	AC	29-Aug-19	9095	A-01
pH*	**8.48**		0.100	pH Units	1	9082814	AC	28-Aug-19	9045	
Reactive Cyanide	<0.100		0.100	mg/kg	1	9090309	AC	03-Sep-19	9010	
Reactive Sulfide	**0.420**		0.0100	mg/kg	1	9090309	AC	03-Sep-19	9030	
Radionuclides										**SUB-RS**
Radium-226	**0.51 ± 0.02**			pCi/gram	1	9080520	CK	11-Sep-19	GammaRay HPGE	
Radium-228	**0.12 ± 0.01**			pCi/gram	1	9080520	CK	11-Sep-19	GammaRay HPGE	
Total Radium	**0.63 ± 0.02**			pCi/gram	1	9080520	CK	11-Sep-19	GammaRay HPGE	
TCLP Volatile Organic Compounds by GCMS										
Benzene*	<0.0147	0.0147	0.0500	mg/L	100	9083005	CK	30-Aug-19	1311/8260B	
Surrogate: Dibromofluoromethane			*102 %*	*92.9-119*		*9083005*	CK	*30-Aug-19*	*1311/8260B*	
Surrogate: Toluene-d8			*99.8 %*	*86-108*		*9083005*	CK	*30-Aug-19*	*1311/8260B*	
Surrogate: 4-Bromofluorobenzene			*93.6 %*	*81.7-121*		*9083005*	CK	*30-Aug-19*	*1311/8260B*	
Petroleum Hydrocarbons by GC FID										**S-06**
GRO C6-C10*	**60.6**		50.0	mg/kg	5	9082812	CK	31-Aug-19	8015B	
DRO >C10-C28*	**1460**		50.0	mg/kg	5	9082812	CK	31-Aug-19	8015B	
EXT DRO >C28-C36	**422**		50.0	mg/kg	5	9082812	CK	31-Aug-19	8015B	
Surrogate: 1-Chlorooctane			*114 %*	*41-142*		*9082812*	CK	*31-Aug-19*	*8015B*	
Surrogate: 1-Chlorooctadecane			*170 %*	*37.6-147*		*9082812*	CK	*31-Aug-19*	*8015B*	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES 6899 PECOS ST. UNIT C DENVER CO, 80221	Project: EK QUEEN RECLAMATION Project Number: NONE GIVEN Project Manager: ZACH CONDER Fax To:	Reported: 12-Sep-19 17:10

WC

H902952-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Green Analytical Laboratories										
TCLP Metals by ICP (1311)										
Arsenic	<0.500		0.500	mg/L	5	B909053	AES	10-Sep-19	EPA200.7/1311	V1
Barium	**1.35**		0.250	mg/L	5	B909053	AES	10-Sep-19	EPA200.7/1311	
Cadmium	<0.250		0.250	mg/L	5	B909053	AES	10-Sep-19	EPA200.7/1311	
Chromium	<0.250		0.250	mg/L	5	B909053	AES	10-Sep-19	EPA200.7/1311	
Lead	<0.500		0.500	mg/L	5	B909053	AES	10-Sep-19	EPA200.7/1311	
Selenium	<0.500		0.500	mg/L	5	B909053	AES	10-Sep-19	EPA200.7/1311	
Silver	<0.250		0.250	mg/L	5	B909053	AES	10-Sep-19	EPA200.7/1311	
TCLP Mercury by CVAA										
Mercury	<0.0010		0.0010	mg/L	5	B909042	LLG	11-Sep-19	EPA245.1	

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

TASMAN GEOSCIENCES 6899 PECOS ST. UNIT C DENVER CO, 80221	Project: EK QUEEN RECLAMATION Project Number: NONE GIVEN Project Manager: ZACH CONDER Fax To:	Reported: 12-Sep-19 17:10

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9081101 - General Prep - Wet Chem										
LCS (9081101-BS1)				Prepared & Analyzed: 11-Aug-19						
Ignitability	78.0		°F	80.0		97.5	97.5-105			
Duplicate (9081101-DUP1)		**Source: H902743-01**		Prepared & Analyzed: 11-Aug-19						
Ignitability	>140	50.0	°F		ND				20	
Batch 9082814 - 1:1 DI										
LCS (9082814-BS1)				Prepared & Analyzed: 28-Aug-19						
pH	7.01		pH Units	7.00		100	90-110			
Duplicate (9082814-DUP1)		**Source: H902932-03**		Prepared & Analyzed: 28-Aug-19						
pH	8.44	0.100	pH Units		7.51			11.7	20	
Batch 9082924 - 1:4 DI Water										
Blank (9082924-BLK1)				Prepared & Analyzed: 29-Aug-19						
Chloride	ND	16.0	mg/kg							
LCS (9082924-BS1)				Prepared & Analyzed: 29-Aug-19						
Chloride	416	16.0	mg/kg	400		104	80-120			
LCS Dup (9082924-BSD1)				Prepared & Analyzed: 29-Aug-19						
Chloride	400	16.0	mg/kg	400		100	80-120	3.92	20	
Batch 9090309 - General Prep - Wet Chem										
Blank (9090309-BLK1)				Prepared & Analyzed: 03-Sep-19						
Reactive Cyanide	ND	0.100	mg/kg							
Reactive Sulfide	ND	0.0100	mg/kg							

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

TASMAN GEOSCIENCES 6899 PECOS ST. UNIT C DENVER CO, 80221	Project: EK QUEEN RECLAMATION Project Number: NONE GIVEN Project Manager: ZACH CONDER Fax To:	Reported: 12-Sep-19 17:10

Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9090309 - General Prep - Wet Chem										
Duplicate (9090309-DUP1)		**Source: H902952-01**		Prepared & Analyzed: 03-Sep-19						
Reactive Cyanide	ND	0.100	mg/kg		ND				20	
Reactive Sulfide	0.360	0.0100	mg/kg		0.420			15.4	20	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

TASMAN GEOSCIENCES 6899 PECOS ST. UNIT C DENVER CO, 80221	Project: EK QUEEN RECLAMATION Project Number: NONE GIVEN Project Manager: ZACH CONDER Fax To:	Reported: 12-Sep-19 17:10

TCLP Volatile Organic Compounds by GCMS - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9083005 - Volatiles										
Blank (9083005-BLK1)				Prepared & Analyzed: 30-Aug-19						
Benzene	ND	0.000500	mg/L							
Surrogate: Dibromofluoromethane	*0.0253*		mg/L	*0.0250*		*101*	*92.9-119*			
Surrogate: Toluene-d8	*0.0250*		mg/L	*0.0250*		*99.9*	*86-108*			
Surrogate: 4-Bromofluorobenzene	*0.0239*		mg/L	*0.0250*		*95.8*	*81.7-121*			
LCS (9083005-BS1)				Prepared & Analyzed: 30-Aug-19						
Benzene	0.0195	0.000500	mg/L	0.0200		97.4	80.5-129			
Surrogate: Dibromofluoromethane	*0.0254*		mg/L	*0.0250*		*101*	*92.9-119*			
Surrogate: Toluene-d8	*0.0253*		mg/L	*0.0250*		*101*	*86-108*			
Surrogate: 4-Bromofluorobenzene	*0.0245*		mg/L	*0.0250*		*98.1*	*81.7-121*			
LCS Dup (9083005-BSD1)				Prepared & Analyzed: 30-Aug-19						
Benzene	0.0194	0.000500	mg/L	0.0200		97.2	80.5-129	0.308	6.66	
Surrogate: Dibromofluoromethane	*0.0257*		mg/L	*0.0250*		*103*	*92.9-119*			
Surrogate: Toluene-d8	*0.0251*		mg/L	*0.0250*		*100*	*86-108*			
Surrogate: 4-Bromofluorobenzene	*0.0244*		mg/L	*0.0250*		*97.6*	*81.7-121*			

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES 6899 PECOS ST. UNIT C DENVER CO, 80221	Project: EK QUEEN RECLAMATION Project Number: NONE GIVEN Project Manager: ZACH CONDER Fax To:	Reported: 12-Sep-19 17:10

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9082812 - General Prep - Organics										
Blank (9082812-BLK1)				Prepared: 28-Aug-19 Analyzed: 30-Aug-19						
GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	*62.2*		mg/kg	*50.0*		*124*	*41-142*			
Surrogate: 1-Chlorooctadecane	*66.8*		mg/kg	*50.0*		*134*	*37.6-147*			
LCS (9082812-BS1)				Prepared: 28-Aug-19 Analyzed: 30-Aug-19						
GRO C6-C10	216	10.0	mg/kg	200		108	76.5-133			
DRO >C10-C28	218	10.0	mg/kg	200		109	72.9-138			
Total TPH C6-C28	435	10.0	mg/kg	400		109	78-132			
Surrogate: 1-Chlorooctane	*65.9*		mg/kg	*50.0*		*132*	*41-142*			
Surrogate: 1-Chlorooctadecane	*66.2*		mg/kg	*50.0*		*132*	*37.6-147*			
LCS Dup (9082812-BSD1)				Prepared: 28-Aug-19 Analyzed: 30-Aug-19						
GRO C6-C10	214	10.0	mg/kg	200		107	76.5-133	1.12	20.6	
DRO >C10-C28	213	10.0	mg/kg	200		107	72.9-138	2.28	20.6	
Total TPH C6-C28	427	10.0	mg/kg	400		107	78-132	1.70	18	
Surrogate: 1-Chlorooctane	*66.7*		mg/kg	*50.0*		*133*	*41-142*			
Surrogate: 1-Chlorooctadecane	*68.0*		mg/kg	*50.0*		*136*	*37.6-147*			

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES 6899 PECOS ST. UNIT C DENVER CO, 80221	Project: EK QUEEN RECLAMATION Project Number: NONE GIVEN Project Manager: ZACH CONDER Fax To:	Reported: 12-Sep-19 17:10

TCLP Metals by ICP (1311) - Quality Control

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B909053 - EPA 1311										
Blank (B909053-BLK1)				Prepared: 09-Sep-19 Analyzed: 10-Sep-19						
Arsenic	ND	0.500	mg/L							
Selenium	ND	0.500	mg/L							
Chromium	ND	0.250	mg/L							
Silver	ND	0.250	mg/L							
Barium	ND	0.250	mg/L							
Cadmium	ND	0.250	mg/L							
Lead	ND	0.500	mg/L							
LCS (B909053-BS1)				Prepared: 09-Sep-19 Analyzed: 10-Sep-19						
Silver	0.486	0.250	mg/L	0.500		97.3	85-115			
Lead	10.1	0.500	mg/L	10.0		101	85-115			
Cadmium	9.87	0.250	mg/L	10.0		98.7	85-115			
Arsenic	21.2	0.500	mg/L	20.0		106	85-115			
Selenium	40.7	0.500	mg/L	40.0		102	85-115			
Barium	9.75	0.250	mg/L	10.0		97.5	85-115			
Chromium	9.96	0.250	mg/L	10.0		99.6	85-115			
LCS Dup (B909053-BSD1)				Prepared: 09-Sep-19 Analyzed: 10-Sep-19						
Silver	0.510	0.250	mg/L	0.500		102	85-115	4.76	20	
Cadmium	10.3	0.250	mg/L	10.0		103	85-115	4.53	20	
Selenium	43.9	0.500	mg/L	40.0		110	85-115	7.50	20	
Arsenic	22.9	0.500	mg/L	20.0		115	85-115	7.83	20	
Chromium	10.4	0.250	mg/L	10.0		104	85-115	3.84	20	
Lead	10.4	0.500	mg/L	10.0		104	85-115	2.94	20	
Barium	10.1	0.250	mg/L	10.0		101	85-115	3.83	20	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES 6899 PECOS ST. UNIT C DENVER CO, 80221	Project: EK QUEEN RECLAMATION Project Number: NONE GIVEN Project Manager: ZACH CONDER Fax To:	Reported: 12-Sep-19 17:10

TCLP Mercury by CVAA - Quality Control

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B909042 - EPA 245.1/7470										
Blank (B909042-BLK1)				Prepared: 09-Sep-19 Analyzed: 11-Sep-19						
Mercury	ND	0.0002	mg/L							
LCS (B909042-BS1)				Prepared: 09-Sep-19 Analyzed: 11-Sep-19						
Mercury	0.0052	0.0002	mg/L	0.00500		104	85-115			
LCS Dup (B909042-BSD1)				Prepared: 09-Sep-19 Analyzed: 11-Sep-19						
Mercury	0.0051	0.0002	mg/L	0.00500		102	85-115	2.08	20	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

Z-01d	FAILED
Z-01c	0.63 ± 0.02
Z-01b	0.51 ± 0.02
Z-01a	0.12 ± 0.01
Z-01	>140
V1	Continuing calibration verification recovery was above laboratory acceptance limits. Target analyte was not detected in the sample.
SUB-RS	Analysis subcontracted to Radiation Safety Engineering, Inc.
S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
A-01	Sample is dry soil with no visible liquid.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name: Tasman Geosciences	**BILL TO**
Project Manager: Zach Conder	**P.O. #:** AFE
Address: 2620 W. Marland Ave	**Company:** Plains Pipeline, LP
City: Hobbs **State:** NM **Zip:** 88240	**Attn:** Amber Groves
Phone #: 806-724-5943 **Fax #:**	**Address:** 1911 Connie Rd
Project #: **Project Owner:**	**City:** Carlsbad
Project Name: EK Queen Reclamation	**State:** NM **Zip:** 88220
Project Location: Lea County, NM	**Phone #:** 575-200-5517
Sampler Name: B. Dennis	**Fax #:**

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chlorides 4500	TPH 8015 M Ext	TCLP Benzene	RCI	TCLP RCRA 8	NORM	Paint Filter				
H902952-1	WC	C	3			✓					✓		8/26/19	13:00	✓	✓	✓	✓	✓	✓	✓				

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	**Date:** 8/27/19	**Received By:**	Phone Result: ☐ Yes ☑ No Add'l Phone #:
	Time: 13:40		Fax Result: ☐ Yes ☑ No Add'l Fax #:
Relinquished By:	**Date:**	**Received By:**	REMARKS:
	Time:		email results: algroves@paalp.com zconder@tasman-geo.com bdennis@tasman-geo.com

Delivered By: (Circle One) -3.4° #97
Sampler - UPS - Bus - Other: Corrected -3.0°

Sample Condition	CHECKED BY: (Initials)
Cool: ☑ Yes ☐ No	TO
Intact: ☐ Yes ☐ No	

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

September 27, 2019

ZACH CONDER

TASMAN GEOSCIENCES

6899 PECOS ST. UNIT C

DENVER, CO 80221

RE: EK QUEEN

Enclosed are the results of analyses for samples received by the laboratory on 09/24/19 10:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES
ZACH CONDER
6899 PECOS ST. UNIT C
DENVER CO, 80221
Fax To:

Received:	09/24/2019	Sampling Date:	09/17/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	EK QUEEN	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS AAP - LEA CO NM		

Sample ID: 1 FL @ 4' (H903277-01)

BTEX 8021B mg/kg **Analyzed By: CK**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302	
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683	
Total BTEX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.6 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	09/25/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane *94.6 %* *41-142*

Surrogate: 1-Chlorooctadecane *94.9 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES
ZACH CONDER
6899 PECOS ST. UNIT C
DENVER CO, 80221
Fax To:

Received:	09/24/2019	Sampling Date:	09/17/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	EK QUEEN	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS AAP - LEA CO NM		

Sample ID: 1 SW @ 2' (H903277-02)

BTEX 8021B mg/kg **Analyzed By: CK**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302	
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683	
Total BTEX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.3 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/25/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane *96.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *97.6 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES
ZACH CONDER
6899 PECOS ST. UNIT C
DENVER CO, 80221
Fax To:

Received:	09/24/2019	Sampling Date:	09/17/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	EK QUEEN	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS AAP - LEA CO NM		

Sample ID: 2 FL 1 @ 1' (H903277-03)

BTEX 8021B mg/kg **Analyzed By: CK**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302	
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683	
Total BTEX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.6 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/25/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane *99.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *103 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES
ZACH CONDER
6899 PECOS ST. UNIT C
DENVER CO, 80221
Fax To:

Received:	09/24/2019	Sampling Date:	09/17/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	EK QUEEN	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS AAP - LEA CO NM		

Sample ID: 2 FL 2 @ 1' (H903277-04)

BTEX 8021B mg/kg **Analyzed By: CK**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302	
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683	
Total BTEX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.0 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/25/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane *102 %* *41-142*

Surrogate: 1-Chlorooctadecane *105 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES
ZACH CONDER
6899 PECOS ST. UNIT C
DENVER CO, 80221
Fax To:

Received:	09/24/2019	Sampling Date:	09/17/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	EK QUEEN	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS AAP - LEA CO NM		

Sample ID: 2 SW 1 @ 6'' (H903277-05)

BTEX 8021B mg/kg **Analyzed By: CK**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302	
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683	
Total BTEX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.5 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/25/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane *97.1 %* *41-142*

Surrogate: 1-Chlorooctadecane *97.2 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES
ZACH CONDER
6899 PECOS ST. UNIT C
DENVER CO, 80221
Fax To:

Received:	09/24/2019	Sampling Date:	09/17/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	EK QUEEN	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS AAP - LEA CO NM		

Sample ID: 2 SW 2 @ 6" (H903277-06)

BTEX 8021B mg/kg **Analyzed By: CK**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302	
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683	
Total BTEX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.1 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/25/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	204	102	200	1.35	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	192	96.2	200	1.88	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane *92.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *94.9 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES
ZACH CONDER
6899 PECOS ST. UNIT C
DENVER CO, 80221
Fax To:

Received:	09/24/2019	Sampling Date:	09/17/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	EK QUEEN	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS AAP - LEA CO NM		

Sample ID: 3 SW 1 @ 6' (H903277-07)

BTEX 8021B mg/kg **Analyzed By: CK**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/25/2019	ND	2.14	107	2.00	0.302	
Toluene*	<0.050	0.050	09/25/2019	ND	1.90	94.9	2.00	1.27	
Ethylbenzene*	<0.050	0.050	09/25/2019	ND	1.91	95.6	2.00	0.902	
Total Xylenes*	<0.150	0.150	09/25/2019	ND	5.80	96.7	6.00	0.683	
Total BTEX	<0.300	0.300	09/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.4 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/25/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	187	93.6	200	6.81	
DRO >C10-C28*	**22.4**	10.0	09/25/2019	ND	180	89.9	200	4.26	
EXT DRO >C28-C36	**35.9**	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane *93.2 %* *41-142*

Surrogate: 1-Chlorooctadecane *90.8 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES
ZACH CONDER
6899 PECOS ST. UNIT C
DENVER CO, 80221
Fax To:

Received:	09/24/2019	Sampling Date:	09/17/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	EK QUEEN	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS AAP - LEA CO NM		

Sample ID: 3 SW 2 @ 6' (H903277-08)

BTEX 8021B mg/kg **Analyzed By: BF**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/26/2019	ND	1.70	85.0	2.00	0.372	
Toluene*	<0.050	0.050	09/26/2019	ND	1.71	85.5	2.00	1.89	
Ethylbenzene*	<0.050	0.050	09/26/2019	ND	1.68	84.1	2.00	1.52	
Total Xylenes*	<0.150	0.150	09/26/2019	ND	4.97	82.9	6.00	1.85	
Total BTEX	<0.300	0.300	09/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *82.3 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/25/2019	ND	432	108	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	187	93.6	200	6.81	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	180	89.9	200	4.26	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane *94.6 %* *41-142*

Surrogate: 1-Chlorooctadecane *95.9 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES
ZACH CONDER
6899 PECOS ST. UNIT C
DENVER CO, 80221
Fax To:

Received:	09/24/2019	Sampling Date:	09/17/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	EK QUEEN	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS AAP - LEA CO NM		

Sample ID: 3 SW 3 @ 6' (H903277-09)

BTEX 8021B mg/kg **Analyzed By: BF**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/26/2019	ND	1.70	85.0	2.00	0.372	
Toluene*	<0.050	0.050	09/26/2019	ND	1.71	85.5	2.00	1.89	
Ethylbenzene*	<0.050	0.050	09/26/2019	ND	1.68	84.1	2.00	1.52	
Total Xylenes*	<0.150	0.150	09/26/2019	ND	4.97	82.9	6.00	1.85	
Total BTEX	<0.300	0.300	09/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *82.4 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	09/25/2019	ND	432	108	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	187	93.6	200	6.81	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	180	89.9	200	4.26	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane *97.3 %* *41-142*

Surrogate: 1-Chlorooctadecane *97.9 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES
ZACH CONDER
6899 PECOS ST. UNIT C
DENVER CO, 80221
Fax To:

Received:	09/24/2019	Sampling Date:	09/20/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	EK QUEEN	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS AAP - LEA CO NM		

Sample ID: 3 SW 4 @ 6' (H903277-10)

BTEX 8021B mg/kg **Analyzed By: BF**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/26/2019	ND	1.70	85.0	2.00	0.372	
Toluene*	<0.050	0.050	09/26/2019	ND	1.71	85.5	2.00	1.89	
Ethylbenzene*	<0.050	0.050	09/26/2019	ND	1.68	84.1	2.00	1.52	
Total Xylenes*	<0.150	0.150	09/26/2019	ND	4.97	82.9	6.00	1.85	
Total BTEX	<0.300	0.300	09/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *83.1 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/25/2019	ND	432	108	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	187	93.6	200	6.81	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	180	89.9	200	4.26	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane *89.8 %* *41-142*

Surrogate: 1-Chlorooctadecane *91.4 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES
ZACH CONDER
6899 PECOS ST. UNIT C
DENVER CO, 80221
Fax To:

Received:	09/24/2019	Sampling Date:	09/23/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	EK QUEEN	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS AAP - LEA CO NM		

Sample ID: 3 SW 5 @ 6' (H903277-11)

BTEX 8021B mg/kg Analyzed By: BF

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/26/2019	ND	1.70	85.0	2.00	0.372	
Toluene*	<0.050	0.050	09/26/2019	ND	1.71	85.5	2.00	1.89	
Ethylbenzene*	<0.050	0.050	09/26/2019	ND	1.68	84.1	2.00	1.52	
Total Xylenes*	<0.150	0.150	09/26/2019	ND	4.97	82.9	6.00	1.85	
Total BTEX	<0.300	0.300	09/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *82.3 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/25/2019	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	187	93.6	200	6.81	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	180	89.9	200	4.26	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane *97.4 %* *41-142*

Surrogate: 1-Chlorooctadecane *98.3 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES
ZACH CONDER
6899 PECOS ST. UNIT C
DENVER CO, 80221
Fax To:

Received:	09/24/2019	Sampling Date:	09/20/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	EK QUEEN	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS AAP - LEA CO NM		

Sample ID: 3 FL 3 @ 12' (H903277-12)

BTEX 8021B mg/kg Analyzed By: BF

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/26/2019	ND	1.70	85.0	2.00	0.372	
Toluene*	<0.050	0.050	09/26/2019	ND	1.71	85.5	2.00	1.89	
Ethylbenzene*	<0.050	0.050	09/26/2019	ND	1.68	84.1	2.00	1.52	
Total Xylenes*	<0.150	0.150	09/26/2019	ND	4.97	82.9	6.00	1.85	
Total BTEX	<0.300	0.300	09/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *82.9 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/25/2019	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	187	93.6	200	6.81	
DRO >C10-C28*	**33.1**	10.0	09/25/2019	ND	180	89.9	200	4.26	
EXT DRO >C28-C36	**59.7**	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane *92.2 %* *41-142*

Surrogate: 1-Chlorooctadecane *89.8 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES
ZACH CONDER
6899 PECOS ST. UNIT C
DENVER CO, 80221
Fax To:

Received:	09/24/2019	Sampling Date:	09/20/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	EK QUEEN	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS AAP - LEA CO NM		

Sample ID: 3 FL 1 @ 12' (H903277-13)

BTEX 8021B mg/kg Analyzed By: BF

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/26/2019	ND	1.70	85.0	2.00	0.372	
Toluene*	<0.050	0.050	09/26/2019	ND	1.71	85.5	2.00	1.89	
Ethylbenzene*	<0.050	0.050	09/26/2019	ND	1.68	84.1	2.00	1.52	
Total Xylenes*	<0.150	0.150	09/26/2019	ND	4.97	82.9	6.00	1.85	
Total BTEX	<0.300	0.300	09/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *85.6 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	09/25/2019	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	187	93.6	200	6.81	
DRO >C10-C28*	**59.9**	10.0	09/25/2019	ND	180	89.9	200	4.26	
EXT DRO >C28-C36	**114**	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane *95.4 %* *41-142*

Surrogate: 1-Chlorooctadecane *94.4 %* *37.6-147*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES
ZACH CONDER
6899 PECOS ST. UNIT C
DENVER CO, 80221
Fax To:

Received:	09/24/2019	Sampling Date:	09/20/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	EK QUEEN	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS AAP - LEA CO NM		

Sample ID: 3 FL 2 @ 12' (H903277-14)

BTEX 8021B mg/kg Analyzed By: BF

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/26/2019	ND	1.70	85.0	2.00	0.372	
Toluene*	<0.050	0.050	09/26/2019	ND	1.71	85.5	2.00	1.89	
Ethylbenzene*	<0.050	0.050	09/26/2019	ND	1.68	84.1	2.00	1.52	
Total Xylenes*	<0.150	0.150	09/26/2019	ND	4.97	82.9	6.00	1.85	
Total BTEX	<0.300	0.300	09/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *84.2 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	09/25/2019	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	187	93.6	200	6.81	
DRO >C10-C28*	**230**	10.0	09/25/2019	ND	180	89.9	200	4.26	
EXT DRO >C28-C36	**161**	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane *82.7 %* *41-142*

Surrogate: 1-Chlorooctadecane *88.4 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES
ZACH CONDER
6899 PECOS ST. UNIT C
DENVER CO, 80221
Fax To:

Received:	09/24/2019	Sampling Date:	09/23/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	EK QUEEN	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS AAP - LEA CO NM		

Sample ID: 3 FL 5 @ 12' (H903277-15)

BTEX 8021B mg/kg **Analyzed By: BF**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/26/2019	ND	1.70	85.0	2.00	0.372	
Toluene*	<0.050	0.050	09/26/2019	ND	1.71	85.5	2.00	1.89	
Ethylbenzene*	<0.050	0.050	09/26/2019	ND	1.68	84.1	2.00	1.52	
Total Xylenes*	<0.150	0.150	09/26/2019	ND	4.97	82.9	6.00	1.85	
Total BTEX	<0.300	0.300	09/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *83.1 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/25/2019	ND	432	108	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	187	93.6	200	6.81	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	180	89.9	200	4.26	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane *84.0 %* *41-142*

Surrogate: 1-Chlorooctadecane *83.0 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TASMAN GEOSCIENCES
ZACH CONDER
6899 PECOS ST. UNIT C
DENVER CO, 80221
Fax To:

Received:	09/24/2019	Sampling Date:	09/23/2019
Reported:	09/27/2019	Sampling Type:	Soil
Project Name:	EK QUEEN	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	PLAINS AAP - LEA CO NM		

Sample ID: 3 FL 4 @ 12' (H903277-16)

BTEX 8021B mg/kg **Analyzed By: BF**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/26/2019	ND	1.70	85.0	2.00	0.372	
Toluene*	<0.050	0.050	09/26/2019	ND	1.71	85.5	2.00	1.89	
Ethylbenzene*	<0.050	0.050	09/26/2019	ND	1.68	84.1	2.00	1.52	
Total Xylenes*	<0.150	0.150	09/26/2019	ND	4.97	82.9	6.00	1.85	
Total BTEX	<0.300	0.300	09/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *85.0 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/25/2019	ND	432	108	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/25/2019	ND	187	93.6	200	6.81	
DRO >C10-C28*	<10.0	10.0	09/25/2019	ND	180	89.9	200	4.26	
EXT DRO >C28-C36	<10.0	10.0	09/25/2019	ND					

Surrogate: 1-Chlorooctane *81.8 %* *41-142*

Surrogate: 1-Chlorooctadecane *80.4 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

p. 1 of 2

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: Tasman	**BILL TO**		
Project Manager: Zack Condor	P.O. #:		
Address:	Company: Plains		
City: State: Zip:	Attn: Amber Groves		
Phone #: Fax #:	Address:		
Project #: Project Owner:	City:		
Project Name:	State: Zip:		
Project Location: EK Queen	Phone #:		
Sampler Name: Kyle Schmidt	Fax #:		

FOR LAB USE ONLY				MATRIX							PRESERV.			SAMPLING		ANALYSIS REQUEST										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	GRO	TPH	BTEX									
H903277																										
1	1FL@4'	C	1			X					X		9-17-19	11:00	X	X	X									
2	1SW@2'	C	1			X					X			11:05	X	X	X									
3	2FL1@1'	C	1			X					X			11:10	X	X	X									
4	2FL2@1'	C	1			X					X			11:15	X	X	X									
5	2SW1@6"	C	1			X					X			11:20	X	X	X									
6	2SW2@6"	C	1			X					X			11:25	X	X	X									
7	3SW1@6'	C	1			X					X			11:30	X	X	X									
8	3SW2@6'	C	1			X					X			11:35	X	X	X									
9	3SW3@6'	C	1			X					X			11:40	X	X	X									
10	3SW4@6'	C	1			X					X		9-20-19	9:45	X	X	X									

Relinquished By:	Date: 9/24	Received By: Jodi Henson	Phone Result: ☐ Yes ☐ No	Add'l Phone #:
	Time: 10:15		Fax Result: ☐ Yes ☐ No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: zcondor@tasmanageo.com bcooper@tasman-geo.com glgroves@gmail.com	
	Time:			
Delivered By: (Circle One) Sampler - UPS - Bus - Other: Tasman Employee	3.7°C / 4.1°C	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials)	

P. 2 of 2

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name:	Tasman	**BILL TO**	
Project Manager:	Zach Conder	P.O. #:	
Address:		Company:	Plains
City:	State: Zip:	Attn:	Amber Groves
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:		State: Zip:	
Project Location:	EK Queen	Phone #:	
Sampler Name:	Kyle Schmidt	Fax #:	

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chlorides	TPH 8015 M Ext.	BTEX
H903217																	
11	35W5@ 6'	C	1			X					X		9-23	1:30	X	X	X
12	3FL3@ 12'	C	1			X					X		9-20	9:40	X	X	X
13	3FL1@ 12'	C	1			X					X		9-20	9:30	X	X	X
14	3FL2@ 12'	C	1			X					X		9-20	9:35	X	X	X
15	3FL5@ 12'	C	1			X					X		9-23	1:40	X	X	X
16	3FL4@ 12'	C	1			X					X		9-23	1:00	X	X	X

Relinquished By:	Date: 9/24	Received By:	Jodi Henson
	Time: 10:15		
Relinquished By:	Date:	Received By:	
	Time:		

Delivered By: (Circle One) 3.7C / 4.1C
Sampler - UPS - Bus - Other: Tasman Employee

Sample Condition: Cool ☐ Yes ☐ No; Intact ☑ Yes ☐ No
CHECKED BY: (Initials)

Phone Result: ☐ Yes ☑ No Add'l Phone #:
Fax Result: ☐ Yes ☑ No Add'l Fax #:
REMARKS:

email results: algroves@paalp.com
zconder@tasman-geo.com
bcooper@tasman-geo.com
bdennis@tasman-geo.com

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

Plains Pipeline, LP
Former EK Queen Station Historical

Initial Release

Initial Release

Plains Pipeline, LP
Former EK Queen Station Historical

Excavated Area

Excavated Area

Plains Pipeline, LP
Former EK Queen Station Historical

Back Filled Excavation

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	NDHR1918228923
District RP	1RP-5593
Facility ID	fDHR1918228769
Application ID	pDHR1918228414

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 32.726736 Longitude -103.631709
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Former EK Queen Station Historical	Site Type Former Station
Date Release Discovered 6/20/2019	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
O	23	18S	33E	Lea

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☒ Crude Oil	Volume Released (bbls) Unknown	Volume Recovered (bbls) Unknown
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
Historical impact discovered during site reclamation activities.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NDHR1918228923
District RP	1RP-5593
Facility ID	fDHR1918228769
Application ID	pDHR1918228414

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Amber Groves Title: Remediation Coordinator
Signature: Amber Groves Date: 6/27/2019
email: algroves@paalp.com Telephone: 575-200-5517

OCD Only

Received by: Dylan Rose-Coss Date: 07/01/2019

Reseeding
The lessee shall seed all disturbed areas. If after one growing season the vegetation has not taken hold, seeding may need to be repeated until revegetation is successful, as determined by the State Land Office.

Seeding Techniques
Seeds shall be drilled to a proper depth to insure good coverage and germination. The seed mixture shall be evenly and uniformly planted over the disturbed area. If drilling is not possible, seeds shall be broadcast and the area raked or dragged to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled.

Seed Mixture
The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. The suggested seed mixture is listed below.

If one species is not available, increase all others proportionately. No less than 4 species, including one (1) forb. No less than 9 pounds per PLS acres shall be applied.

Seed Type	**Pounds of pure live seed (PLS) per Acre**	
	Broadcast Rate	**Drill Rate**
Black or Blue Grama	3 lbs	1.5 lbs
Sideoats Grama	2 lbs	1.0 lbs
Sand Dropseed	1 lbs	0.5lbs
Sand Bluestem	1 lbs	.5 lbs
FORBS		
*Globemallow	1 lbs	.5 lbs
*Buckwheat	1 lbs	.5 lbs
Total pounds pure live seed per acres:	9 lbs	

**The selected forb(s) may be replaced with another desired forb.*

The seeding will be repeated until a satisfactory stand is established as determined by the reporting District Resource Manager.

When to Seed
The preferred time for warm season species is 3-6 weeks after the last killing frost in the spring, although they may be seeded any time during the growing season except the last 45 days prior to the average killing frost date. It is desirable to delay seeding until July after the monsoon storm weather pattern has developed.