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April 13, 2015

Dr.
-Mr. Tomas Oberding
Environmental Bureau
Oil Conservation Division
Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: 12-inch Crossover Release Site

Remediation Summary and Closure Request

NMOCD Reference #1RP-1538

Dr.

Dear Mr. Oberding:

CK Associates (CK) prepared this report on behalf of Regency Energy Partners (Regency) for the 12-inch Crossover Release Site in Lea County, New Mexico. Site assessment and remediation activities have been completed at the site in cooperation with the New Mexico Oil Conservation Division (OCD). The information presented in this report was obtained by Regency from NOVA Safety & Environmental and has been summarized by CK Associates. Based on this information, Regency respectfully requests site closure for the 12-inch Crossover Release Site.

#### 1.0 Background

The 12-inch Crossover site is located on Sid Richardson Road (32.178183°, -103.155617°) in Section 34, Township 24S, and Range 37E (**Figure 1**). On August 14, 2007, a release of crude oil and natural gas from a 12-inch steel pipeline was discovered. Based on information reported on the C-141 Release Notification Form, the cause of the release was attributed to failure of a segment of the 12-inch pipeline, which released approximately 125 barrels (bbls) of crude oil and an estimated 203 thousand cubic feet (mcf) of natural gas.

According to the C-141 form (**Appendix A**), approximately 90 bbls of "free standing" crude oil was recovered using a vacuum truck following release discovery. Based on measurements collected during initial response activities, the release covered approximately 2,100 square feet (sq. ft.) at the point of release and approximately 8,200 sq. ft. of a former production pit site located adjacent to the release point. The total surface area impacted totaled approximately ¼ of an acre.

#### 2.0 Remediation Activities

The following section describes remediation activities that occurred at the site.

#### 2.1 Remediation Action Levels

Using the OCD guidelines for site ranking, the following criteria have been applied: 1) the depth to groundwater is between 50 and 99 feet below ground surface, 2) the distance to the nearest water well is greater than 1,000 feet, 3) and the distance to the nearest surface water body is greater than 200 feet. This information was obtained from online records of the New Mexico Office of the State Engineer and aerial photographs.

Based on these criteria, the soil remediation levels for chemicals of concern (COCs) are as follows: benzene (10 mg/kg), Total benzene, toluene, ethylbenzene, xylene (BTEX) (50 mg/kg), and total petroleum hydrocarbon (TPH) (1,000 mg/kg). The OCD requested that for this site delineation of chlorides be conducted to 250 mg/kg.

### 2.2 <u>Excavation Activities</u>

Excavation was conducted between August 2012 and January 2013. The final excavation was irregular and extended away from the main area of impact where delineation was conducted. The size of the excavation was approximately 210 feet in length and ranged from approximately 80 to 150 feet in width and from approximately 4 to 23 feet in depth. The excavation is depicted on **Figure 2**. Photographic documentation of the excavation is shown in **Appendix B**.

Several areas of the excavation were denoted using particular names during excavation and assessment activities. Those areas (listed below) were excavated with the intent to remove or delineate affected soil. Based on the data provided, the approximate range of length, width, and depth of the areas is presented below:

Excavation Area	Length (ft)	Width (ft)	Depth (ft)
Entire Excavation	210	150	4-25
Main Excavation Area	100	120-150	4-25
Former Production Pit	110	80-100	4
<b>Delineation Trenches</b>			
Main Delineation Trench	55	15	9-25
Main Delineation Trench East	35	4	9-23
Main Delineation Trench West	15	4	9-23
North Trench	110	8	14
South Trench	10	8	16
South Trench 2	65	8	16
West Trench	10	8	16
West Trench 2	55	8	14

#### 2.3 Confirmation Sample Results

Confirmation soil samples were taken on side walls and the base of the excavation to enable delineation of affected soil. Soil samples were analyzed for BTEX by EPA method 8021B, TPH by EPA method 8015, and chlorides by method E 300.1. Soil samples were sent to Permian Basin Environmental Labs, LP in Midland, Texas for analysis. As shown on **Table 1**, 38 soil samples were collected from the side walls and floors of the excavation from depths ranging from 9 feet to 25 feet below ground surface (bgs). Additionally, eight soil samples were collected from the former production pit from depths between 3 and 4 feet bgs. A total of 16 composite samples were collected from stockpiled soil. Analytical laboratory data is included in **Appendix C**.

In most areas sufficient soil was excavated such that no soil sample contained benzene, BTEX, TPH, or chlorides at concentrations that exceeded the soil remediation levels. However, in two locations affected soil was left in place (following discussions and agreement with the OCD). Sample locations are shown on **Figure 2**. One soil sample (Pit Floor @ 4') was reported to have a TPH concentration of 1,630 mg/kg, which was above the soil remediation level of 1,000 mg/kg. Also, one soil sample (West S/W-4@14') exceeded the chloride 250 mg/kg soil remediation level with a reported concentration of 976 mg/kg. It appears that this material may have been left in place due to the presence of a nearby transite pipe, coupled with clean results from delineation trenches further to the west.

#### 2.4 <u>Liner Installation</u>

Regency and the OCD agreed that it would be appropriate to use a 20-mil polyethylene liner to limit further infiltration of water through the affected area. The OCD required that affected soil be excavated to a depth of 15 feet. Although the excavation was advanced to a depth of 23 feet in some places, the excavation was backfilled to a total depth of 15 feet bgs on the north end sloping to a depth of 17 feet bgs on the south end. Following this backfill, the base of the excavation was covered with a liner.

The OCD also approved of the use of a sidewall liner, draped along the western-most sidewall of the excavation where chloride impacted soil was left in place (near sample point West S/W-4@14'). The OCD and Regency also agreed that excavated soil containing chlorides with a concentration less than 500 mg/kg could be used as backfill on top of the liner. Photographs showing the liner are presented in **Appendix B**. **Figure 2** depicts the location and direction of each photograph.

The OCD approved Regency's request to limit excavation of the former production pit to a depth of only 4 feet bgs, which was followed by the installation of a polyethylene liner at the base of the excavation. The OCD and Regency also agreed to the installation of a second sidewall liner to be draped along the eastern sidewall of the excavation on the west side of the former production pit area (**Figure 2**).

#### 2.5 Final Backfill Activities

In April 2013, approximately 852 cubic yards of clean soil was transported to the site from the landowner's borrow pit. A six-inch layer of sand was placed on the floor of the excavation. The 20-mil polyethylene liner was then installed on top of the sand with an additional six inches of clean sand placed on top of the liner. The excavation was then backfilled with the onsite stockpiled soil and compacted in lifts. The site was then contoured to match the surrounding topography.

#### 3.0 Conclusions

CK has reviewed the information relating to the 12-inch Crossover Release site and made the following conclusions:

- Soil affected by the release of crude oil has been excavated and a liner has been installed in a manner appropriate to meet criteria agreed upon by the OCD.
- A 20-mil polyethylene liner was installed in the excavation and covered with clean backfill sand and soil that meets the OCD's predetermined criteria.
- Consistent with OCD guidance, the placement of the liner is intended to limit the infiltration of surface water and protect groundwater from future migration of COCs.

Based on the successful completion of these remediation activities, Regency requests closure of the 12-inch Crossover Release site.

#### 4.0 Closing

We appreciate your consideration of this report. If you have any questions or comments, please feel free to contact our office at (281) 397-9016.

Sincerely, CK Associates

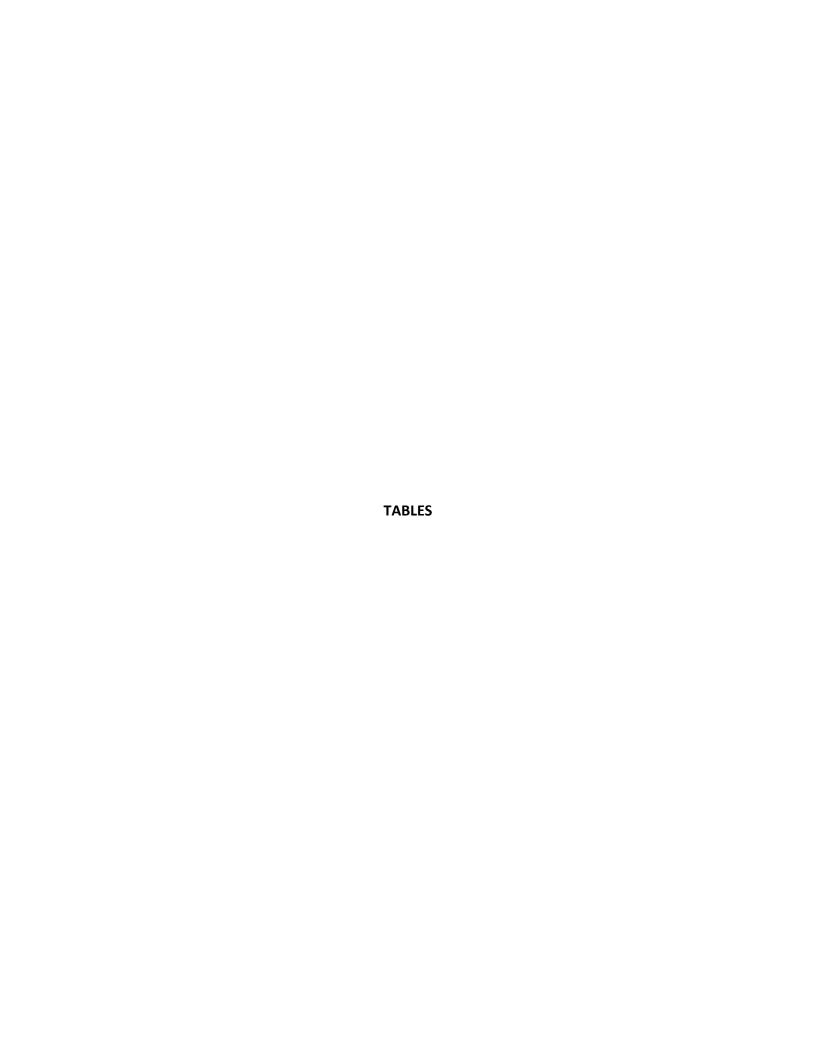
jen j. **ц**ane

Environmental Scientist

Hollis F. Millard, P.G.

Risk Assessment & Remediation Team Leader

CC: Crystal Callaway, Regency Energy Partners, LP



#### TABLE 1

#### CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL

# REGENCY FIELD SERVICES, LLC 12 INCH CROSSOVER HISTORICAL RELEASE SITE LEA COUNTY, NEW MEXICO NMOCD # 1RP-1538

All concentrations are reported in mg/Kg

			METHODS: SW 846-8021b						METHOD: S	SW 8015M		E 300.1
CAMPLE LOCATION	SAMPLE			ETHIN			TOTAL	TPH	TPH	TPH	TOTAL	
SAMPLE LOCATION	DATE	BENZENE	TOLUENE	ETHYL-	m, p - XYLENES	o - XYLENE	TOTAL BTEX	GRO	DRO	ORO	TPH	CHLORIDE
				BENZENE	ATLENES	AYLENE	BIEA	$C_{6}-C_{12}$	$C_{12}$ - $C_{28}$	$C_{28}$ - $C_{35}$	C <sub>6</sub> -C <sub>35</sub>	
North Floor 1 @ 9'	08/07/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<15.8	<15.8	<15.8	<15.8	996
North S/W -2 @ 8'	08/09/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<16.7	<16.7	<16.7	<16.7	102
North Floor-1 @ 14.5'	08/09/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<18.3	<18.3	<18.3	<18.3	116
North S/W-1 @ 13'	08/09/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<17.9	<17.9	<17.9	<17.9	13.9
North Floor -2 @ 9'	08/09/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<18.8	<18.8	<18.8	<18.8	1.81
South Floor-1 @ 12'	08/13/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<16.9	36.1	<16.9	36.1	1,520
South Floor-2 @ 9'	08/13/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<16.1	<16.1	<16.1	<16.1	937
South Floor-1 @ 17.5'	08/13/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<15.5	16.2	<15.5	16.2	235
South S/W-1 @ 16.5'	08/13/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<15.6	133	<15.6	133	276
South Floor-2 @ 13'	08/13/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<15.8	<15.8	<15.8	<15.8	358
South S/W-2 @ 12'	08/13/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<15.8	<15.8	<15.8	<15.8	263
East Floor-1 @ 12'	08/13/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<16.9	<16.9	<16.9	<16.9	1,500
East Floor-1 @ 18.5'	08/13/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<15.6	<15.6	<15.6	<15.6	297
East S/W-1 @ 17.5'	08/13/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<15.8	<15.8	<15.8	<15.8	566
West Floor-1 @ 9'	08/14/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<16.5	<16.5	<16.5	<16.5	1,140
West Floor-1 @ 17'	08/14/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<15.5	<15.5	<15.5	<15.5	301
West S/W-1 @ 16'	08/14/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<15.6	<15.6	<15.6	<15.6	259
East Floor @ 23'	10/10/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<26.0	<26.0	<26.0	<26.0	155
West Floor @ 22'	10/10/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.8	<25.8	<25.8	<25.8	79.6
South Floor @ 25'	10/10/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<26.3	<26.3	<26.3	<26.3	249
SP-1	10/10/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.8	<25.8	<25.8	<25.8	99
East Pit 1 @ 3'	10/25/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.3	<25.3	<25.3	<25.3	5.29
East Pit 2 @ 3'	10/25/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.3	<25.3	<25.3	<25.3	102
South Pit 1 @ 3'	10/25/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.5	<25.5	<25.5	<25.5	157
SouthPit 2 @ 3'	10/25/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.3	<25.3	<25.3	<25.3	31.1

**Bold** - Exceeds OCD regulatory limit

Tabulated data shown were obtained from Nova Safety & Environmental

#### TABLE 1

### CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL

# REGENCY FIELD SERVICES, LLC 12 INCH CROSSOVER HISTORICAL RELEASE SITE LEA COUNTY, NEW MEXICO NMOCD # 1RP-1538

All concentrations are reported in mg/Kg

				METHODS:	SW 846-8021b				METHOD: S	SW 8015M		E 300.1
SAMPLE LOCATION	SAMPLE DATE	BENZENE	TOLUENE	ETHYL- BENZENE	m, p - XYLENES	o - XYLENE	TOTAL BTEX	TPH GRO C <sub>6</sub> -C <sub>12</sub>	TPH DRO C <sub>12</sub> -C <sub>28</sub>	TPH ORO C <sub>28</sub> -C <sub>35</sub>	TOTAL TPH C <sub>6</sub> -C <sub>35</sub>	CHLORIDE
North Pit 1 @ 3'	10/25/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<27.8	<27.8	<27.8	<27.8	2.62
North Pit 2 @ 3'	10/25/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.5	<25.5	<25.5	<25.5	880
Pit SP-1	10/25/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<26.0	822	170	992	87.7
West Trench-1 @ 16'	10/26/12	<0.00100	<0.00200	< 0.00100	<0.00200	< 0.00100	<0.00200	<26.3	<26.3	<26.3	<26.3	209
North Pit 2A @ 3'	11/12/12	-	-	-	-	-	-	-	-	-	-	118
North Wall 1 @ 14'	11/30/12	< 0.00100	<0.00200	< 0.00100	<0.00200	< 0.00100	<0.00200	<26.0	<26.0	<26.0	<26.0	189
North Wall 2 @ 14'	11/30/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<26.3	<26.3	<26.3	<26.3	307
South Wall 1 @ 16'	11/30/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<26.3	<26.3	<26.3	<26.3	62.8
South Wall 2 @ 16'	11/30/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<26.0	<26.0	<26.0	<26.0	400
West Wall 1 @ 16'	11/30/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.8	<25.8	<25.8	<25.8	287
West Wall 2 @ 14'	11/30/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<26.0	<26.0	<26.0	<26.0	132
Pit Floor @ 4'	11/30/12	< 0.00100	<0.00200	< 0.00100	< 0.00200	< 0.00100	<0.00200	<27.2	1,250	383	1,630	197
SP-2	12/03/12	<0.00100	<0.00200	< 0.00100	<0.00200	< 0.00100	<0.00200	<25.5	<25.5	<25.5	<25.5	361
SP-3	12/03/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.8	<25.8	<25.8	<25.8	356
SP-4	12/03/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<26.0	<26.0	<26.0	<26.0	309
SP-5	12/03/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.5	<25.5	<25.5	<25.5	243
SP-6	12/03/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.3	<25.3	<25.3	<25.3	220
SP-7	12/03/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.3	<25.3	<25.3	<25.3	339
SP-8	12/03/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.3	<25.3	<25.3	<25.3	383
SP-9	12/03/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.8	<25.8	<25.8	<25.8	194
SP-10	12/03/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.5	<25.5	<25.5	<25.5	233
SP-11	12/03/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.5	<25.5	<25.5	<25.5	394
SP-12	12/03/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.8	<25.8	<25.8	<25.8	154
Topsoil	12/03/12	<0.00100	<0.00200	<0.00100	<0.00200	< 0.00100	<0.00200	<25.3	<25.3	<25.3	<25.3	66.5
North S-W 1A @ 14'	12/07/12	<0.00100	<0.00200	< 0.00100	<0.00200	< 0.00100	<0.00200	<26.0	<26.0	<26.0	<26.0	230

#### TABLE 1

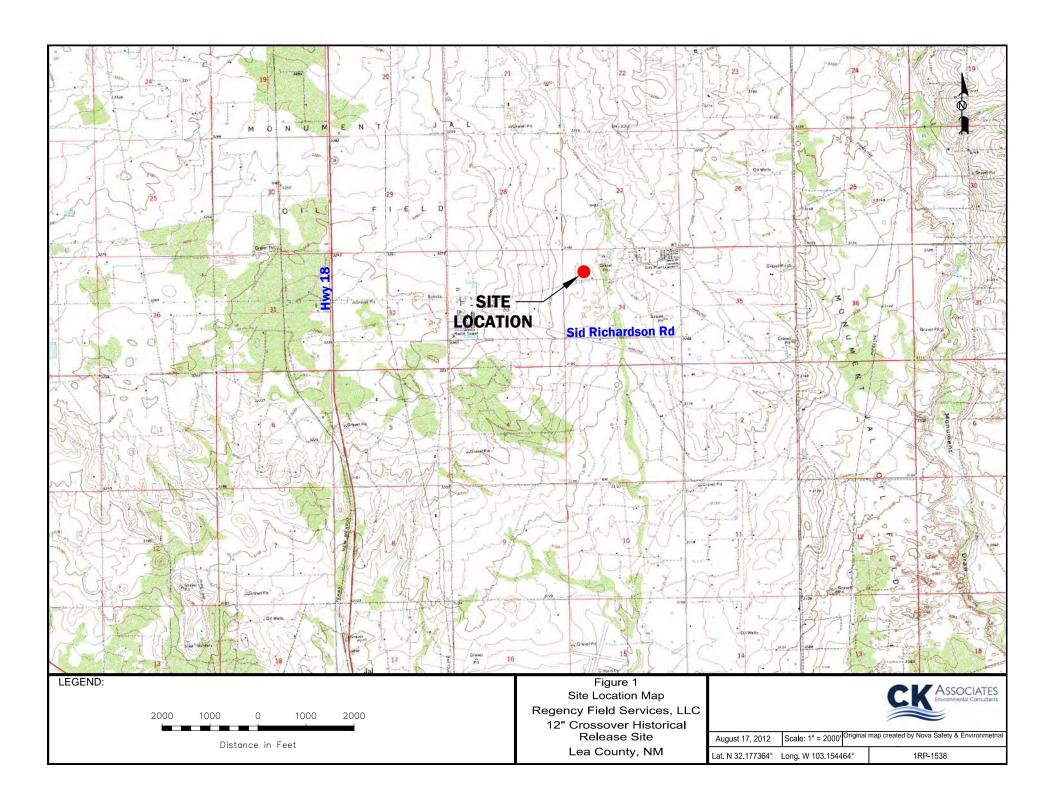
### CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL

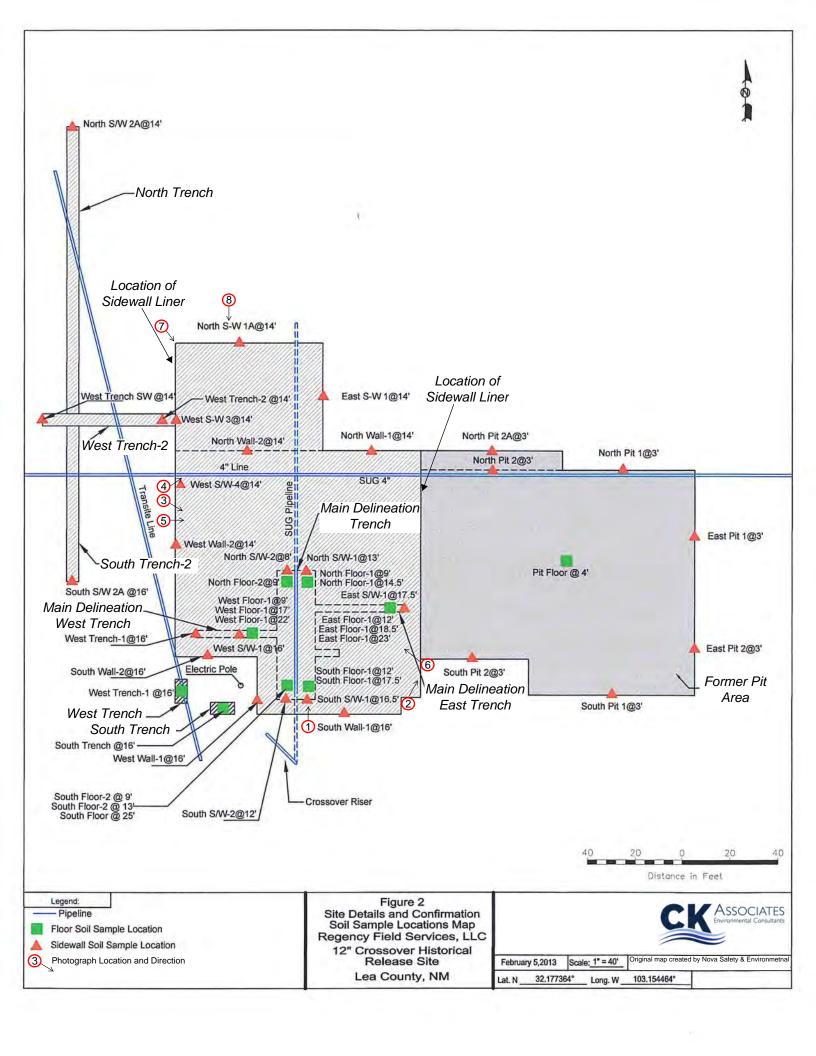
# REGENCY FIELD SERVICES, LLC 12 INCH CROSSOVER HISTORICAL RELEASE SITE LEA COUNTY, NEW MEXICO NMOCD # 1RP-1538

All concentrations are reported in mg/Kg

				METHODS:	SW 846-8021b				METHOD: S	SW 8015M		E 300.1
SAMPLE LOCATION	SAMPLE DATE	BENZENE	TOLUENE	ETHYL- BENZENE	m, p - XYLENES	o - XYLENE	TOTAL BTEX	TPH GRO C <sub>6</sub> -C <sub>12</sub>	TPH DRO C <sub>12</sub> -C <sub>28</sub>	TPH ORO C <sub>28</sub> -C <sub>35</sub>	TOTAL TPH C <sub>6</sub> -C <sub>35</sub>	CHLORIDE
East S-W 1 @ 14'	12/07/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<26.0	<26.0	<26.0	<26.0	197
West S-W 3 @ 14'	12/07/12	<0.00100	<0.00200	<0.00100	<0.00200	<0.00100	<0.00200	<26.3	<26.3	<26.3	<26.3	284
West Trench 2 @ 14'	12/13/12	<0.00100	<0.00200	< 0.00100	<0.00200	< 0.00100	<0.00200	<25.5	<25.5	<25.5	<25.5	324
West Trench SW @ 14'	12/14/12	<0.00100	<0.00200	<0.00100	<0.00200	< 0.00100	<0.00200	<26.0	<26.0	<26.0	<26.0	205
South Trench @ 16'	12/17/12	-	-	-	-	-	-	-	-	-	-	113
West Trench @ 16'	12/17/12	-	-	-	-	-	-	-	-	-	-	124
SP-13	12/20/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.8	<25.8	<25.8	<25.8	498
SP-14	12/20/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.5	<25.5	<25.5	<25.5	474
SP-15	12/20/12	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<26.0	<26.0	<26.0	<26.0	500
SP-16	12/20/12	<0.00100	<0.00200	<0.00100	<0.00200	<0.00100	<0.00200	<26.0	<26.0	<26.0	<26.0	495
South S/W 2A @ 16'	01/21/13	< 0.00100	< 0.00200	< 0.00100	< 0.00200	< 0.00100	< 0.00200	<25.8	<25.8	<25.8	<25.8	144
North S/W 2A @ 14'	01/21/13	<0.00100	<0.00200	<0.00100	<0.00200	<0.00100	<0.00200	<25.8	<25.8	<25.8	<25.8	245
West S/W-4 @ 14'	01/31/13	<0.00100	<0.00200	<0.00100	<0.00200	<0.00100	<0.00200	<26.6	<26.6	<26.6	<26.6	979









**APPENDIX A** 

**C-141 Form** 

District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

\* Attach Additional Sheets If Necessary

### State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe. NM 87505 Form C-141 Revised October 10, 2003 Abmit 2 Copies to appropriate

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

			Rel	ease Notific	atio	n and Co	rrective A	ction		Anna Maria			
						OPERA'	TOR	( ☑ Init	al Report	Final Re			
Name of C	ompany			n Gas Services,		Contact				Tony Savo			
Address		P.(		226 Jal, N.M. 88		Telephone 1	100		1	505-395-21			
Facility Na	me		Les	County Field I	Dept.	Facility Typ	oe		Natu	ral Gas Gatheri			
Surface Ov	vner: Beck	y J. Doom	-	Mineral C	wner	: Fee		Lease	No.				
					ATIO	N OF RE	LEASE						
Unit Letter D	Section 34	Township 24S	Range 37E	Feet from the	Nort	h/South Line	Feet from the	East/West Line	County	Lea			
						1 Longitud	e W103 09.33	7 750	,				
Type of Rele	ease : Crude	Oil, and Natu	ıral Gas		- CAC	Volume of	Release: 125 Bt 203 MCF Nat. Ga	ols Volume	Recovered	90 Bbls Crude			
		Natural Gas P	Pipeline				lour of Occurren	ce Date and		covery 8/14/07			
Was Immed	iate Notice (		Yes [	No Not R	equired	If YES, To	Whom? On-call NMOC	D	ā.				
By Whom?			,			Date and I	Hour: 8/15/07 7:5	8 a.m.					
Was a Water	rcourse Read		Yes 🛭	No No		If YES, V	olume Impacting	the Watercourse.	2728293	037-72			
A 12" Naturisolated the release had	ral Gas gat section of traveled to	thering line of line involve an abandon	operating d with the	e leak. The oper pit.	rator o	riginally estin	ed a leak. Repai mated the releas	r crews arrived a ee at less than 25	the leak si Bols, but fa	te on 8/14/07 an			
remove all o around the o notified abou approximate that is not as reached with	f the free sta ld pit. The last the release ly 12,600 sq sociated with the landow	inding liquids NMOCD was area and pit th, of which a th the pit will ner and NMO	on top of notified a location. Tabout 65% be remedi- CD on ho	the abandoned Ed and a request was a The release area co of that area was of ated in accordance we the affected are	&P pit a made for covered covered with the	and the immed or a field inspe approximately d with product the NMOCD rate the E&P pit will	liate release area. ctor to inspect the 2100 sq. ft. before from the pipeline ecommended guide be handled.	Instructions were per leak area and abare re reaching the pit release. The area delines for leaks ar	given not dist indoned pit, T area. The pit affected arou id spills. An a	turb the area on a The landowner we area measured and the leak area agreement will be			
regulations a public health should their or the enviro	all operators or the environment operations had not a line operations in a	are required to ronment. The ave failed to	o report as acceptant adequately OCD accep	nd/or file certain r ce of a C-141 report investigate and r	elease ort by to emedia	notifications a he NMOCD mate contaminati	nd perform correct arked as "Final Rich ion that pose a thi	ctive actions for re eport" does not re eat to ground water	leases which lieve the oper er, surface wa	may endanger ator of liability ter, human health			
Signature:	1	my 5	Bui	ue			OIL CON	SERVATION	DIVISIO	N Son			
Printed Nam	e: John	A. Savoie				Approved by	District Supervis		MENTAL	ENGINEER-			
Title: Reme	diation Sup	ervisor				Approval Da	te: 8-31 · E		Date and Hour of Discovery Time: 4:45 p.m.  atercourse.  Receive Receive Receive Receive Robbs accum truck was dispatched to citions were given not disturb the area and abandoned pit. The landshing the pit area. The pit area area and spills. An agreemand that pursuant to NMOCD citions for releases which may end does not relieve the operator of ground water, surface water, he is in the pit area water. The pit area water, he is in the pit area water, he is in the pit area water. The pit area water, he is in the pit area water, he is in the pit area water. Attached Attached				
E-mail Addr		voie@sug.com		\$05.305.2116		Conditions of		Des 141	Attached				

Appendix B

**Photographic Documentation** 

**Client:** Regency Field Services, LLC, Formerly Southern Union Gas Services

Project Name: 12 Inch Crossover Historical Release Site Location: Lea County, New Mexico

### Photograph No. 1

# **Direction:** Facing North



Prepared by: NOVA

### **Description:**

Excavation activities in progress.

### Photograph No. 2

### **Direction:**

**Facing Northeast** 

### **Description:**

Excavation activities in progress. Pit Area excavation at right.



**Client:** Regency Field Services, LLC, Formerly Southern Union Gas Services

Project Name: 12 Inch Crossover Historical Release Site Location: Lea County, New Mexico

### Photograph No. 3

### **Direction:**

Facing Southeast

### **Description:**

Excavation activities in progress.



Prepared by: NOVA

### Photograph No. 4

### **Direction:**

**Facing Northeast** 

### **Description:**

Excavation activities in progress.



**Client:** Regency Field Services, LLC, Formerly Southern Union Gas Services

Project Name: 12 Inch Crossover Historical Release Site Location: Lea County, New Mexico

### Photograph No. 5

# **Direction:** Facing East

### **Description:**

Excavation complete, Sand layer placed in excavation prior to Liner installation.



Prepared by: NOVA

### Photograph No. 6

### **Direction:**

**Facing Northwest** 

### **Description:**

Liner installation prior to Sand layer placement.



**Client:** Regency Field Services, LLC, Formerly Southern Union Gas Services

Project Name: 12 Inch Crossover Historical Release Site Location: Lea County, New Mexico

### Photograph No. 7

# **Direction:** Facing East

# **Description:** Liner installed on excavation floor.



Prepared by: NOVA

### Photograph No. 8

# **Direction:** Facing South

### Description: Liner installed on excavation floor. Liner draped on west sidewall.



Appendix C

**Laboratory Data Reports** 

## PERMIAN BASIN ENVIRONMENTAL LAB, LP 10014 SCR 1213 Midland, TX 79706



# Analytical Report

### **Prepared for:**

Camille Bryant
Nova Safety & Environment
2057 Commerce
Midland, TX 79703

Project: TRP-1538

Project Number: Historical 12in. Crossover TRP-1538

Location: Lea Co, NM

Lab Order Number: 2H15001



NELAP/TCEQ # T104704156-12-1

Report Date: 09/04/12

2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
North Floor-1 @9'	2H15001-01	Soil	08/07/12 14:10	08-15-2012 08:55
North S/W-2 @8'	2H15001-02	Soil	08/09/12 08:00	08-15-2012 08:55
North Floor-1 @14.5'	2H15001-03	Soil	08/09/12 08:20	08-15-2012 08:55
North S/W-1 @13'	2H15001-04	Soil	08/09/12 08:25	08-15-2012 08:55
North Floor-2@9'	2H15001-05	Soil	08/09/12 15:23	08-15-2012 08:55
South Floor-1 @ 12'	2H15001-06	Soil	08/13/12 08:00	08-15-2012 08:55
South Floor-2 @ 9'	2H15001-07	Soil	08/13/12 08:20	08-15-2012 08:55
South Floor-1 @ 17.5'	2H15001-08	Soil	08/13/12 09:00	08-15-2012 08:55
South S/W-1 @ 16.5'	2H15001-09	Soil	08/13/12 09:20	08-15-2012 08:55
South Floor-2 @ 13'	2H15001-10	Soil	08/13/12 10:00	08-15-2012 08:55
South S/W-2 @ 12'	2H15001-11	Soil	08/13/12 10:20	08-15-2012 08:55
East Floor-1 @ 12'	2H15001-12	Soil	08/13/12 13:20	08-15-2012 08:55
East Floor-1 @ 18.5'	2H15001-13	Soil	08/13/12 14:00	08-15-2012 08:55
East S/W-1 @ 17.5'	2H15001-14	Soil	08/13/12 14:20	08-15-2012 08:55
West Floor-1 @ 9'	2H15001-15	Soil	08/14/12 08:10	08-15-2012 08:55
West Floor-1 @ 17'	2H15001-16	Soil	08/14/12 08:40	08-15-2012 08:55
West S/W-1 @ 16'	2H15001-17	Soil	08/14/12 12:15	08-15-2012 08:55

Samples received were analyzed for BTEX, TPH and Chlorides.

For the TPH analysis the surrogate O-Terphenyl was recovered above the QC limit in most samples. For those samples that had surrogate failures for the surrogate 1-Chloroctane, a re-extraction and re-analysis was performed to confirm the surrogate failures. Because these samples were clean, the surrogate failures have no effect on the quality of the data. Please see the flagging criteria listed in the Notes section.

2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant

# Organics by GC Permian Basin Environmental Lab

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
North Floor-1 @9' (2H15001-01) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	75-12	'5	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		98.7 %	75-12	25	"	"	"	"	
C6-C12	ND	15.8	mg/kg dry	"	EH21703	08/15/12	08/15/12	EPA 8015M	
>C12-C28	ND	15.8	"	"	"	"	"	"	
>C28-C35	ND	15.8	"	"	"	"	"	"	
Total Hydrocarbons	ND	15.8	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		129 %	70-13	20	"	"	"	"	
Surrogate: o-Terphenyl		142 %	70-13	20	"	"	"	n .	S-GC
North S/W-2 @8' (2H15001-02) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	75-12	25	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		104 %	75-12	25	"	"	"	"	
C6-C12	ND	16.7	mg/kg dry	"	EH21703	08/15/12	08/15/12	EPA 8015M	
>C12-C28	ND	16.7	"	"	"	"	"	"	
>C28-C35	ND	16.7	"	"	"	"	"	"	
Total Hydrocarbons	ND	16.7	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		127 %	70-13	0	"	"	"	"	
Surrogate: o-Terphenyl		143 %	70-13	20	"	"	"	"	S-GC
North Floor-1 @14.5' (2H15001-03) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	75-12	25	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		99.0 %	75-12	25	"	"	"	"	
C6-C12	ND	18.3	mg/kg dry	"	EH21703	08/15/12	08/15/12	EPA 8015M	

Permian Basin Environmental Lab

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant

# Organics by GC Permian Basin Environmental Lab

Anglyta	D a14	Reporting	I Init-	<b>.</b>	n .				
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
North Floor-1 @14.5' (2H15001-03) Soil									
>C12-C28	ND	18.3	mg/kg dry	1	EH21703	08/15/12	08/15/12	EPA 8015M	
>C28-C35	ND	18.3	"	"	"	"	"	"	
Total Hydrocarbons	ND	18.3	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		134 %	70-1	30	"	"	"	"	S-DUI
Surrogate: o-Terphenyl		141 %	70-1	30	"	"	"	"	S-DUI
North S/W-1 @13' (2H15001-04) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	75-1	25	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		98.8 %	75-1	25	"	"	"	"	
C6-C12	ND	17.9	mg/kg dry	"	EH21703	08/15/12	08/15/12	EPA 8015M	
>C12-C28	ND	17.9	"	"	"	"	"	"	
>C28-C35	ND	17.9	"	"	"	"	"	"	
Total Hydrocarbons	ND	17.9	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		145 %	70-1	30	"	"	"	"	S-DUI
Surrogate: o-Terphenyl		153 %	70-1	30	"	"	"	"	S-DUI
North Floor-2@9' (2H15001-05) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	75-1	25	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		97.3 %	75-1	25	"	"	"	"	
C6-C12	ND	18.8	mg/kg dry	"	EH21703	08/15/12	08/15/12	EPA 8015M	
>C12-C28	ND	18.8	"	"	"	"	"	"	
>C28-C35	ND	18.8	"	"	"	"	"	"	
Total Hydrocarbons	ND	18.8	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		119 %	70-1	'30	"	"	"	"	
Surrogate: o-Terphenyl		137 %							

2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant

# Organics by GC Permian Basin Environmental Lab

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
South Floor-1 @ 12' (2H15001-06) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	75-12	5	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		101 %	75-12	5	"	"	"	"	
C6-C12	ND	16.9	mg/kg dry	"	EH21703	08/15/12	08/15/12	EPA 8015M	
>C12-C28	36.1	16.9	"	"	"	"	"	"	
>C28-C35	ND	16.9	"	"	"	"	"	"	
<b>Total Hydrocarbons</b>	36.1	16.9	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		126 %	70-13	0	"	"	"	"	
Surrogate: o-Terphenyl		133 %	70-13	0	"	"	"	"	S-GC
South Floor-2 @ 9' (2H15001-07) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		99.8 %	75-12	5	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	75-12	5	"	"	"	"	
C6-C12	ND	16.1	mg/kg dry	"	EH21703	08/15/12	08/15/12	EPA 8015M	
>C12-C28	ND	16.1	"	"	"	"	"	"	
>C28-C35	ND	16.1	"	"	"	"	"	"	
Total Hydrocarbons	ND	16.1	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		122 %	70-13	0	"	"	"	"	
Surrogate: o-Terphenyl		128 %	70-13	0	"	"	"	"	
South Floor-1 @ 17.5' (2H15001-08) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		98.3 %	75-12	5	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	75-12		"	"	"	"	
C6-C12	ND		mg/kg dry	"	EH21703	08/15/12	08/15/12	EPA 8015M	

Permian Basin Environmental Lab

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant

# Organics by GC Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
South Floor-1 @ 17.5' (2H15001-08) Soil									
>C12-C28	16.2	15.5	mg/kg dry	1	EH21703	08/15/12	08/15/12	EPA 8015M	
>C28-C35	ND	15.5	"	"	"	"	"	"	
Total Hydrocarbons	16.2	15.5	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		115 %	70-1	30	"	"	"	"	
Surrogate: o-Terphenyl		120 %	70-1	30	"	"	"	"	
South S/W-1 @ 16.5' (2H15001-09) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		97.7 %	75-1	25	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	75-1	25	"	"	"	"	
C6-C12	ND	15.6	mg/kg dry	"	EH21703	08/15/12	08/15/12	EPA 8015M	
>C12-C28	133	15.6	"	"	"	"	"	"	
>C28-C35	ND	15.6	"	"	"	"	"	"	
Total Hydrocarbons	133	15.6	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		126 %	70-1	30	"	"	"	"	
Surrogate: o-Terphenyl		131 %	70-1	30	"	"	"	"	S-DUP, S-GO
South Floor-2 @ 13' (2H15001-10) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		99.0 %	75-1	25	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	75-1	25	"	"	"	"	
C6-C12	ND	15.8	mg/kg dry	"	EH21703	08/15/12	08/15/12	EPA 8015M	
>C12-C28	ND	15.8	"	"	"	"	"	"	
>C28-C35	ND	15.8	"	"	"	"	"	"	
Total Hydrocarbons	ND	15.8	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		125 %	70-1	30	"	"	"	"	
Surrogate: o-Terphenyl		131 %	70-1	30	"	"	"	"	S-GO

2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant

# Organics by GC Permian Basin Environmental Lab

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
South S/W-2 @ 12' (2H15001-11) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		99.8 %	75-12	25	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	75-12	25	"	"	"	"	
C6-C12	ND	15.8	mg/kg dry	"	EH21703	08/15/12	08/16/12	EPA 8015M	
>C12-C28	ND	15.8	"	"	"	"	"	"	
>C28-C35	ND	15.8	"	"	"	"	"	"	
Total Hydrocarbons	ND	15.8	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		118 %	70-13	0	"	"	"	"	
Surrogate: o-Terphenyl		123 %	70-13	0	"	"	"	"	
East Floor-1 @ 12' (2H15001-12) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		99.3 %	75-12	25	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	75-12	25	"	"	"	"	
C6-C12	ND	16.9	mg/kg dry	"	EH21703	08/15/12	08/16/12	EPA 8015M	
>C12-C28	ND	16.9	"	"	"	"	"	"	
>C28-C35	ND	16.9	"	"	"	"	"	"	
Total Hydrocarbons	ND	16.9	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		128 %	70-13	0	"	"	"	"	
Surrogate: o-Terphenyl		133 %	70-13	20	"	"	"	"	S-GC
East Floor-1 @ 18.5' (2H15001-13) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	75-12	25	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		97.2 %	75-12	25	"	"	"	"	
C6-C12	ND	15.6	mg/kg dry	"	EH21704	08/16/12	08/17/12	EPA 8015M	

Permian Basin Environmental Lab

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant

# Organics by GC Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Dil	Dot-L	Dran J	A me 1 J	Mod1	NI
East Floor-1 @ 18.5' (2H15001-13) Soil	Result	Limit	Omts	Dilution	Batch	Prepared	Analyzed	Method	Notes
>C12-C28	NID	15.6	ma/ka dru	1	EH21704	08/16/12	08/17/12	EPA 8015M	
	ND ND		mg/kg dry	1 "	ЕП21/04	08/10/12	06/17/12	EFA 6015WI	
>C28-C35 Total Hydrocarbons	<b>ND</b> ND	15.6 15.6	,,		"	"	,,	"	
	ND		70.1	10	"	"	"	"	
Surrogate: 1-Chlorooctane		128 %	70-1			"	"		
Surrogate: o-Terphenyl		136 %	70-1	30	"	"	"	"	S-DUP, S-G0
East S/W-1 @ 17.5' (2H15001-14) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		99.3 %	75-1	25	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	75-1	25	"	"	"	"	
C6-C12	ND	15.8	mg/kg dry	"	EH21704	08/16/12	08/17/12	EPA 8015M	
>C12-C28	ND	15.8	"	"	"	"	"	"	
>C28-C35	ND	15.8	"	"	"	"	"	"	
Total Hydrocarbons	ND	15.8	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		120 %	70-1	30	"	"	"	"	
Surrogate: o-Terphenyl		132 %	70-1	30	"	"	"	"	S-DUP, S-GO
West Floor-1 @ 9' (2H15001-15) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	75-1	25	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		98.8 %	75-1	25	"	"	"	"	
C6-C12	ND	16.5	mg/kg dry	"	EH21704	08/16/12	08/17/12	EPA 8015M	
>C12-C28	ND	16.5	"	"	"	"	"	"	
>C28-C35	ND	16.5	"	"	"	"	"	"	
Total Hydrocarbons	ND	16.5	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		115 %	70-1	30	"	"	"	"	
Surrogate: o-Terphenyl		124 %	70-1	30	"	"	"	"	

2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant

# Organics by GC Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
West Floor-1 @ 17' (2H15001-16) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		97.5 %	75-12	?5	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	75-12	25	"	"	"	"	
C6-C12	ND	15.5	mg/kg dry	"	EH21703	08/15/12	08/16/12	EPA 8015M	
>C12-C28	ND	15.5	"	"	"	"	"	"	
>C28-C35	ND	15.5	"	"	"	"	"	"	
Total Hydrocarbons	ND	15.5	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		124 %	70-13	80	"	"	"	"	
Surrogate: o-Terphenyl		130 %	70-13	80	"	"	"	"	
West S/W-1 @ 16' (2H15001-17) Soil									
Benzene	ND	0.00100	mg/kg dry	1	EH21602	08/15/12	08/15/12	EPA 8021B	
Toluene	ND	0.00200	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00200	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: 1,4-Difluorobenzene		99.2 %	75-12	?5	"	"	"	n .	
Surrogate: 4-Bromofluorobenzene		97.5 %	75-12	?5	"	"	"	"	
C6-C12	ND	15.6	mg/kg dry	"	EH21704	08/16/12	08/17/12	EPA 8015M	
>C12-C28	ND	15.6	"	"	"	"	"	"	
>C28-C35	ND	15.6	"	"	"	"	"	"	
Total Hydrocarbons	ND	15.6	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		94.7 %	70-13	80	"	"	"	"	
Surrogate: o-Terphenyl		103 %	70-13	80	"	"	"	"	

2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant

# General Chemistry Parameters by EPA / Standard Methods Permian Basin Environmental Lab

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
North Floor-1 @9' (2H15001-01) Soil	_					_	_		
Chloride	996	10.5	mg/kg dry wt. dry	10	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	5.0	0.1	%	1	EH21601	08/15/12	08/16/12	% calculation	
North S/W-2 @8' (2H15001-02) Soil									
Chloride	102	1.11	mg/kg dry wt. dry	1	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	10.0	0.1	%	"	EH21601	08/15/12	08/16/12	% calculation	
North Floor-1 @14.5' (2H15001-03) Soil									
Chloride	116	1.22	mg/kg dry wt. dry	1	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	18.0	0.1	%	"	EH21601	08/15/12	08/16/12	% calculation	
North S/W-1 @13' (2H15001-04) Soil									
Chloride	13.9	5.95	mg/kg dry wt. dry	5	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	16.0	0.1	%	1	EH21601	08/15/12	08/16/12	% calculation	
North Floor-2@9' (2H15001-05) Soil									
Chloride	1.81	1.25	mg/kg dry wt. dry	1	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	20.0	0.1	%	"	EH21601	08/15/12	08/16/12	% calculation	
South Floor-1 @ 12' (2H15001-06) Soil									
Chloride	1520	2.81	mg/kg dry wt. dry	2.5	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	11.0	0.1	%	1	EH21601	08/15/12	08/16/12	% calculation	
South Floor-2 @ 9' (2H15001-07) Soil									
Chloride	937	1.08	mg/kg dry wt. dry	1	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	7.0	0.1	%	"	EH21601	08/15/12	08/16/12	% calculation	
South Floor-1 @ 17.5' (2H15001-08) Soil									
Chloride	235	1.03	mg/kg dry wt. dry	1	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	3.0	0.1	%	"	EH21601	08/15/12	08/16/12	% calculation	

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Midland TX, 79703 Project Manager: Camille Bryant

# General Chemistry Parameters by EPA / Standard Methods Permian Basin Environmental Lab

	-	Reporting	** **						
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
South S/W-1 @ 16.5' (2H15001-09) Soil									
Chloride	276	1.04	mg/kg dry wt. dry	1	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	4.0	0.1	%	"	EH21601	08/15/12	08/16/12	% calculation	
South Floor-2 @ 13' (2H15001-10) Soil									
Chloride	358	1.05	mg/kg dry wt. dry	1	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	5.0	0.1	%	"	EH21601	08/15/12	08/16/12	% calculation	
South S/W-2 @ 12' (2H15001-11) Soil									
Chloride	263	1.05	mg/kg dry wt. dry	1	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	5.0	0.1	wt. dry %	"	EH21601	08/15/12	08/16/12	% calculation	
East Floor-1 @ 12' (2H15001-12) Soil									
Chloride	1500	5.62	mg/kg dry wt. dry	5	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	11.0	0.1	%	1	EH21601	08/16/12	08/16/12	% calculation	
East Floor-1 @ 18.5' (2H15001-13) Soil									
Chloride	297	1.04	mg/kg dry wt. dry	1	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	4.0	0.1	%	"	EH21601	08/16/12	08/16/12	% calculation	
East S/W-1 @ 17.5' (2H15001-14) Soil									
Chloride	566	1.05	mg/kg dry wt. dry	1	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	5.0	0.1	%	"	EH21601	08/16/12	08/16/12	% calculation	
West Floor-1 @ 9' (2H15001-15) Soil									
Chloride	1140	5.49	mg/kg dry wt. dry	5	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	9.0	0.1	%	1	EH21601	08/16/12	08/16/12	% calculation	
West Floor-1 @ 17' (2H15001-16) Soil									
Chloride	301	1.03	mg/kg dry wt. dry	1	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	3.0	0.1	%	"	EH21601	08/16/12	08/16/12	% calculation	

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Midland TX, 79703 Project Manager: Camille Bryant

# General Chemistry Parameters by EPA / Standard Methods Permian Basin Environmental Lab

Analyte West S/W-1 @ 16' (2H15001-17) Soil	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	259	1.04	mg/kg dry wt. dry	1	EH21702	08/15/12	08/17/12	EPA 300.0	
% Moisture	4.0	0.1	%	"	EH21601	08/16/12	08/16/12	% calculation	

2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EH21602 - General Preparati	on (CC)									
Blank (EH21602-BLK1)	on (GC)			Prepared &	Angleras J.	09/15/12				
Benzene	ND	0.00100	mg/kg wet	Prepared &	Anaiyzea:	08/13/12				
Toluene	ND	0.00100	ilig/kg wet							
Ethylbenzene	ND ND	0.00200	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00200	"							
Surrogate: 1,4-Difluorobenzene	58.0	0.00100	ug/kg	60.0		96.7	75-125			
Surrogate: 4-Bromofluorobenzene	63.0		ug/kg "	60.0		105	75-125 75-125			
Surrogate. 4-Bromojtaorobenzene	03.0			00.0		103	75-125			
LCS (EH21602-BS1)				Prepared &	Analyzed:	08/15/12				
Benzene	0.0916	0.00100	mg/kg wet	0.100		91.6	80-120			
Toluene	0.108	0.00200	"	0.100		108	80-120			
Ethylbenzene	0.0946	0.00100	"	0.100		94.6	80-120			
Xylene (p/m)	0.188	0.00200	"	0.200		94.0	80-120			
Xylene (o)	0.0949	0.00100	"	0.100		94.9	80-120			
Surrogate: 1,4-Difluorobenzene	57.7		ug/kg	60.0		96.2	75-125			
Surrogate: 4-Bromofluorobenzene	64.0		"	60.0		107	75-125			
LCS Dup (EH21602-BSD1)				Prepared &	Analyzed:	08/15/12				
Benzene	0.0870	0.00100	mg/kg wet	0.100		87.0	80-120	5.15	20	
Toluene	0.102	0.00200	"	0.100		102	80-120	5.71	20	
Ethylbenzene	0.0888	0.00100	"	0.100		88.8	80-120	6.32	20	
Xylene (p/m)	0.175	0.00200	"	0.200		87.5	80-120	7.16	20	
Xylene (o)	0.0900	0.00100	"	0.100		90.0	80-120	5.30	20	
Surrogate: 1,4-Difluorobenzene	57.7		ug/kg	60.0		96.2	75-125			
Surrogate: 4-Bromofluorobenzene	63.4		"	60.0		106	75-125			
Matrix Spike (EH21602-MS1)	Sou	rce: 2H15001	-10	Prepared &	: Analyzed:	08/15/12				
Benzene	0.0671	0.00100	mg/kg dry	0.105	ND	63.9	80-120			QM-05
Toluene	0.0818	0.00200	"	0.105	ND	77.9	80-120			QM-05
Ethylbenzene	0.0719	0.00100	"	0.105	ND	68.5	80-120			QM-05
Xylene (p/m)	0.142	0.00200	"	0.211	ND	67.3	80-120			QM-05
Xylene (o)	0.0739	0.00100	"	0.105	ND	70.4	80-120			QM-05
Surrogate: 1,4-Difluorobenzene	58.9		ug/kg	60.0		98.2	75-125			
Surrogate: 4-Bromofluorobenzene	67.5		"	60.0		112	75-125			

2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant

	- ·	Reporting	** *·	Spike	Source	0/75=	%REC	P. P. F	RPD	37.
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EH21602 - General Preparation (G	<b>C</b> )									
Matrix Spike Dup (EH21602-MSD1)	Sou	rce: 2H15001	1-10	Prepared &	Analyzed:	08/15/12				
Benzene	0.0720	0.00100	mg/kg dry	0.105	ND	68.6	80-120	7.09	20	QM-0
Toluene	0.0956	0.00200	"	0.105	ND	91.0	80-120	15.5	20	
Ethylbenzene	0.0846	0.00100	"	0.105	ND	80.6	80-120	16.2	20	
Xylene (p/m)	0.157	0.00200	"	0.211	ND	74.4	80-120	10.0	20	QM-0
Xylene (o)	0.0836	0.00100	"	0.105	ND	79.6	80-120	12.3	20	QM-0
Surrogate: 1,4-Difluorobenzene	58.6		ug/kg	60.0		97.7	75-125			
Surrogate: 4-Bromofluorobenzene	65.2		"	60.0		109	75-125			
Batch EH21703 - 8015M										
Blank (EH21703-BLK1)				Prepared &	Analyzed:	08/15/12				
C6-C12	ND	15.0	mg/kg wet							
>C12-C28	ND	15.0	"							
>C28-C35	ND	15.0	"							
Total Hydrocarbons	ND	15.0	"							
Surrogate: 1-Chlorooctane	130		"	100		130	70-130			
Surrogate: o-Terphenyl	68.6		"	50.0		137	70-130			S-G
LCS (EH21703-BS1)				Prepared &	Analyzed:	08/15/12				
C6-C12	909	15.0	mg/kg wet	1000		90.9	75-125			
>C12-C28	958	15.0	"	1000		95.8	75-125			
>C28-C35	ND	15.0	"				75-125			
Total Hydrocarbons	ND	15.0	"				75-125			
Surrogate: 1-Chlorooctane	127		"	100		127	70-130			
Surrogate: o-Terphenyl	63.9		"	50.0		128	70-130			
LCS Dup (EH21703-BSD1)				Prepared &	Analyzed:	08/15/12				
C6-C12	854	15.0	mg/kg wet	1000		85.4	75-125	6.24	20	
>C12-C28	990	15.0	"	1000		99.0	75-125	3.29	20	
>C28-C35	ND	15.0	"				75-125		20	
Total Hydrocarbons	ND	15.0	"				75-125		20	
Surrogate: 1-Chlorooctane	127		"	100		127	70-130			
Surrogate: o-Terphenyl	64.0		"	50.0		128	70-130			

2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH21703 - 8015M	10001	Ziiiit		20.01	1105411	,,,,,,	2			1.000
Matrix Spike (EH21703-MS1)	Sour	ce: 2H15001	_10	Prepared &	Analyzed:	08/15/12				
C6-C12	1020	15.8	mg/kg dry	1050	ND	97.1	75-125			
>C12-C28	1080	15.8	"	1050	ND	103	75-125			
Total Hydrocarbons	ND	15.8	"		ND		75-125			
Surrogate: 1-Chlorooctane	183		"	105		174	70-130			S-0-
Surrogate: o-Terphenyl	71.0		"	52.6		135	70-130			S-0-
Matrix Spike Dup (EH21703-MSD1)	Source: 2H15001-10 Pre			Prepared: (	08/15/12 A	nalyzed: 08	8/16/12			
C6-C12	1050	15.8	mg/kg dry	1050	ND	100	75-125	2.94	20	
>C12-C28	1110	15.8	"	1050	ND	106	75-125	2.87	20	
Total Hydrocarbons	ND	15.8	"		ND		75-125		20	
Surrogate: 1-Chlorooctane	192		"	105		183	70-130			S-0-
Surrogate: o-Terphenyl	72.5		"	52.6		138	70-130			S-0
Batch EH21704 - TX 1005										
Blank (EH21704-BLK1)				Prepared &	Analyzed:	08/16/12				
C6-C12	ND	15.0	mg/kg wet							
>C12-C28	ND	15.0	"							
>C28-C35	ND	15.0	"							
Total Hydrocarbons	ND	15.0	"							
Surrogate: 1-Chlorooctane	154		"	120		128	70-130			
Surrogate: o-Terphenyl	81.6		"	60.0		136	70-130			S-GO
LCS (EH21704-BS1)				Prepared &	Analyzed:	08/16/12				
C6-C12	1040	15.0	mg/kg wet	1000		104	75-125			
>C12-C28	1100	15.0	"	1000		110	75-125			
>C28-C35	ND	15.0	"				75-125			
Total Hydrocarbons	ND	15.0	"				75-125			
Surrogate: 1-Chlorooctane	190		"	120		158	70-130			S-GO
Surrogate: o-Terphenyl	76.6		"	60.0		128	70-130			

2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant

	D 1	Reporting	TT 10	Spike	Source	0/DEC	%REC	DDD	RPD	N
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EH21704 - TX 1005										
LCS Dup (EH21704-BSD1)				Prepared &	& Analyzed:	08/16/12				
C6-C12	1080	15.0	mg/kg wet	1000		108	75-125	3.77	20	
>C12-C28	1120	15.0	"	1000		112	75-125	1.80	20	
>C28-C35	ND	15.0	"				75-125		20	
Total Hydrocarbons	ND	15.0	"				75-125		20	
Surrogate: 1-Chlorooctane	189		"	120		158	70-130			S-GC
Surrogate: o-Terphenyl	75.8		"	60.0		126	70-130			
Matrix Spike (EH21704-MS1)	Sou	Prepared:	08/16/12 A	nalyzed: 08	3/17/12					
C6-C12	936	15.6	mg/kg dry	1040	ND	90.0	75-125			
>C12-C28	943	15.6	"	1040	ND	90.7	75-125			
>C28-C35	ND	15.6	"		ND		75-125			
Total Hydrocarbons	ND	15.6	"		ND		75-125			
Surrogate: 1-Chlorooctane	129		"	104		124	70-130			
Surrogate: o-Terphenyl	63.9		"	52.1		123	70-130			
Matrix Spike Dup (EH21704-MSD1)	Sou	Source: 2H15001-17			Prepared: 08/16/12 Analyzed: 08/17/12					
C6-C12	801	15.6	mg/kg dry	1040	ND	77.0	75-125	15.6	20	
>C12-C28	811	15.6	"	1040	ND	78.0	75-125	15.1	20	
>C28-C35	ND	15.6	"		ND		75-125		20	
Total Hydrocarbons	ND	15.6	"		ND		75-125		20	
Surrogate: 1-Chlorooctane	130		"	104		125	70-130			
Surrogate: o-Terphenyl	55.6		"	52.1		107	70-130			

2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant

# General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source	·	%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EH21601 - *** DEFAULT PREP ***										
Blank (EH21601-BLK1)				Prepared: (	08/15/12	Analyzed: 0	8/16/12			
% Moisture	ND	0.1	%							
Duplicate (EH21601-DUP1)	Sour	ce: 2H15001	-01	Prepared: (	08/15/12	Analyzed: 0	8/16/12			
% Moisture	5.0	0.1	%		5.0			0.00	20	
Batch EH21702 - *** DEFAULT PREP ***										
Blank (EH21702-BLK1)				Prepared: (	08/15/12	Analyzed: 0	8/17/12			
Chloride	ND	1.00	mg/kg dry wt. wet							
LCS (EH21702-BS1)				Prepared: (	08/15/12	Analyzed: 0	8/17/12			
Chloride	9.71		mg/kg Wet	10.0		97.1	80-120			
LCS Dup (EH21702-BSD1)				Prepared: (	08/15/12	Analyzed: 0	8/17/12			
Chloride	9.48		mg/kg Wet	10.0		94.8	80-120	2.40	20	
<b>Duplicate (EH21702-DUP1)</b>	Sour	ce: 2H15001	-01	Prepared: (	08/15/12	Analyzed: 0	8/17/12			
Chloride	967	10.5	mg/kg dry wt. dry		996			2.95	20	
Matrix Spike (EH21702-MS1)	Sour	ce: 2H15001	-01	Prepared: (	08/15/12	Analyzed: 0	8/17/12			
Chloride	2220	10.5	mg/kg dry wt. dry	1320	996	92.7	80-120			
Matrix Spike (EH21702-MS2)	Sour	ce: 2H15001	-11	Prepared: (	08/15/12	Analyzed: 0	8/17/12			
Chloride	543	1.05	mg/kg dry wt. dry	263	263	106	80-120			

2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant

### **Notes and Definitions**

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

S-DUP Duplicate analysis confirmed surrogate failure due to matrix effects.

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were

within acceptance limits showing that the laboratory is in control and the data is acceptable.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

	Buen	Darron			
Report Approved By:			Date:	9/4/2012	

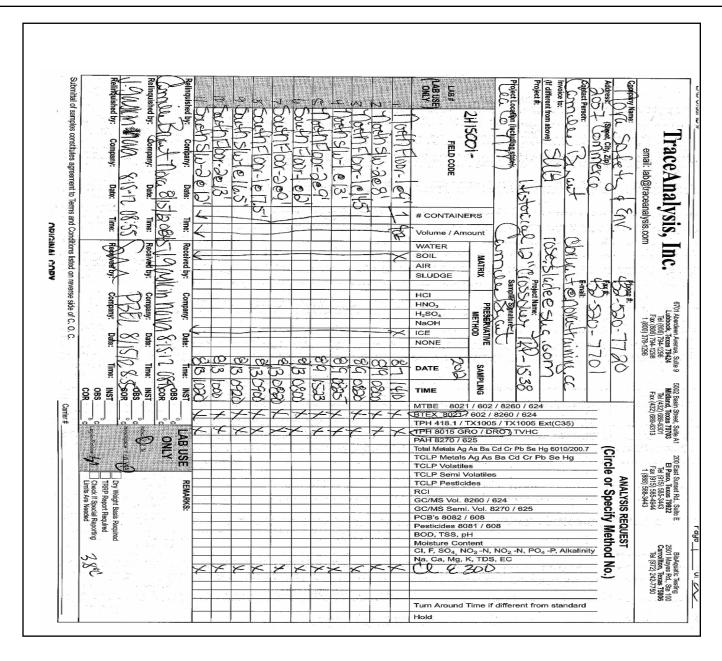
Brent Barron, Laboratory Director/Technical Director

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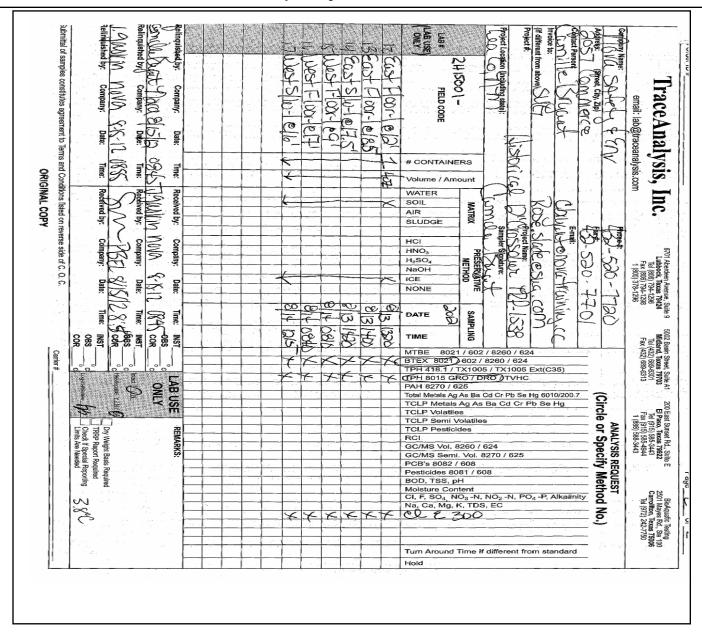
2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant



2057 Commerce Project Number: Historical 12in. Crossover TRP-1538

Midland TX, 79703 Project Manager: Camille Bryant



# PERMIAN BASIN ENVIRONMENTAL LAB, LP 10014 SCR 1213 Midland, TX 79706



# Analytical Report

# **Prepared for:**

Camille Bryant

Nova Safety & Environment

2057 Commerce

Midland, TX 79703

Project: SUG Historical 12 in. Crossover 1RP-1538

Project Number: [none]
Location: Lea County, NM

Lab Order Number: 2J10004



NELAP/TCEQ # T104704156-12-1

Report Date: 10/11/12

Nova Safety & Environment

Project: SUG Historical 12 in. Crossover 1RP-1538

Fax: (432) 520-7701

2057 Commerce

Project Number: [none]

Midland TX, 79703

Project Manager: Camille Bryant

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
East Floor @ 23'	2J10004-01	Soil	10/10/12 09:50	10-10-2012 17:09
West Floor @ 22'	2J10004-02	Soil	10/10/12 10:50	10-10-2012 17:09
South Floor @ 25'	2J10004-03	Soil	10/10/12 14:50	10-10-2012 17:09
SP-1	2J10004-04	Soil	10/10/12 15:10	10-10-2012 17:09

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

# East Floor @ 23' 2J10004-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes		
Permian Basin Environmental Lab											
Organics by GC											
Benzene	ND	0.00100	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B			
Toluene	ND	0.00200	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B			
Ethylbenzene	ND	0.00100	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B			
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B			
Xylene (o)	ND	0.00100	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B			
Surrogate: 1,4-Difluorobenzene		110 %	75-1	25	EJ21105	10/10/12	10/10/12	EPA 8021B			
Surrogate: 4-Bromofluorobenzene		88.0 %	75-1	25	EJ21105	10/10/12	10/10/12	EPA 8021B			
C6-C12	ND	26.0	mg/kg dry	1	EJ21104	10/10/12	10/10/12	8015M			
>C12-C28	ND	26.0	mg/kg dry	1	EJ21104	10/10/12	10/10/12	8015M			
>C28-C35	ND	26.0	mg/kg dry	1	EJ21104	10/10/12	10/10/12	8015M			
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	10/10/12	10/10/12	8015M			
<b>General Chemistry Parameters by EPA</b>	Standard Method	ls									
Chloride	155	1.04n	g/kg dry wt. dr	1	EJ21102	10/10/12	10/11/12	EPA 300.0			
% Moisture	4.0	0.1	%	1	EJ21101	10/10/12	10/11/12	% calculation			

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

# West Floor @ 22' 2J10004-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes		
		ermian Basir									
Organics by GC											
Benzene	ND	0.00100	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B			
Toluene	ND	0.00200	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B			
Ethylbenzene	ND	0.00100	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B			
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B			
Xylene (o)	ND	0.00100	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B			
Surrogate: 1,4-Difluorobenzene		113 %	75-1.	25	EJ21105	10/10/12	10/10/12	EPA 8021B			
Surrogate: 4-Bromofluorobenzene		90.0 %	75-1.	25	EJ21105	10/10/12	10/10/12	EPA 8021B			
C6-C12	ND	25.8	mg/kg dry	1	EJ21104	10/10/12	10/10/12	8015M			
>C12-C28	ND	25.8	mg/kg dry	1	EJ21104	10/10/12	10/10/12	8015M			
>C28-C35	ND	25.8	mg/kg dry	1	EJ21104	10/10/12	10/10/12	8015M			
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	10/10/12	10/10/12	8015M			
General Chemistry Parameters by EPA / Sta	andard Method	ds									
Chloride	79.6	1.0318	g/kg dry wt. dr	1	EJ21102	10/10/12	10/11/12	EPA 300.0			
% Moisture	3.0	0.1	%	1	EJ21101	10/10/12	10/11/12	% calculation			

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

# South Floor @ 25' 2J10004-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	P	ermian Basii	n Environn	nental Lal	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		108 %	75-1	25	EJ21105	10/10/12	10/10/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		88.8 %	75-1	25	EJ21105	10/10/12	10/10/12	EPA 8021B	
C6-C12	ND	26.3	mg/kg dry	1	EJ21104	10/10/12	10/10/12	8015M	
>C12-C28	ND	26.3	mg/kg dry	1	EJ21104	10/10/12	10/10/12	8015M	
>C28-C35	ND	26.3	mg/kg dry	1	EJ21104	10/10/12	10/10/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	10/10/12	10/10/12	8015M	
<b>General Chemistry Parameters by EPA / Sta</b>	ndard Metho	ods							
Chloride	249	1.05°	g/kg dry wt. dr	1	EJ21102	10/10/12	10/11/12	EPA 300.0	
% Moisture	5.0	0.1	%	1	EJ21101	10/10/12	10/11/12	% calculation	

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

3.0

SP-1 2J10004-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	ermian Basi	n Environn	nental Lal	b				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EJ21105	10/10/12	10/10/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		114 %	75-1	25	EJ21105	10/10/12	10/10/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		85.0 %	75-1	25	EJ21105	10/10/12	10/10/12	EPA 8021B	
C6-C12	ND	25.8	mg/kg dry	1	EJ21104	10/10/12	10/10/12	8015M	
>C12-C28	ND	25.8	mg/kg dry	1	EJ21104	10/10/12	10/10/12	8015M	
>C28-C35	ND	25.8	mg/kg dry	1	EJ21104	10/10/12	10/10/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	10/10/12	10/10/12	8015M	
General Chemistry Parameters by EF	A / Standard Method	ls							
Chloride	99.0	1.03n	g/kg dry wt. dı	1	EJ21102	10/10/12	10/11/12	EPA 300.0	

0.1

EJ21101

10/10/12

10/11/12 % calculation

% Moisture

Nova Safety & Environment

Project: SUG Historical 12 in. Crossover 1RP-1538

Project Number: [none]

2057 Commerce Midland TX, 79703

Project Manager: Camille Bryant

Fax: (432) 520-7701

# Organics by GC - Quality Control Permian Basin Environmental Lab

Analyta	Result	Reporting Limit	Linita	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Analyte	Kesuit	Limit	Units	Level	Kesuit	%KEC	Limits	KPD	Limit	inotes
Batch EJ21104 - 8015M										
Blank (EJ21104-BLK1)				Prepared &	k Analyzed	10/10/12				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	54.8		"	50.0		110	70-130			
Surrogate: o-Terphenyl	29.0		"	25.0		116	70-130			
LCS (EJ21104-BS1)				Prepared &	k Analyzed:	: 10/10/12				
C6-C12	574	25.0	mg/kg wet	500		115	75-125			
>C12-C28	552	25.0	"	500		110	75-125			
>C28-C35	ND	25.0	"	0.00			75-125			
Surrogate: 1-Chlorooctane	70.7		"	100		70.7	70-130			
Surrogate: o-Terphenyl	31.9		"	50.0		63.9	70-130			S-GC
LCS Dup (EJ21104-BSD1)				Prepared &	k Analyzed:	: 10/10/12				
C6-C12	612	25.0	mg/kg wet	500		122	75-125	6.37	20	
>C12-C28	583	25.0	"	500		117	75-125	5.54	20	
>C28-C35	ND	25.0	"	0.00			75-125		20	
Surrogate: 1-Chlorooctane	74.1		"	100		74.1	70-130			
Surrogate: o-Terphenyl	33.1		"	50.0		66.2	70-130			S-GC
Matrix Spike (EJ21104-MS1)	Sou	rce: 2J10001	-01	Prepared:	10/10/12 A	nalyzed: 10	)/11/12			
C6-C12	585	26.9	mg/kg dry	538	ND	109	75-125			
>C12-C28	571	26.9	"	538	ND	106	75-125			
>C28-C35	ND	26.9	"	0.00	ND		75-125			
Surrogate: 1-Chlorooctane	67.9		"	53.8		126	70-130			
Surrogate: o-Terphenyl	30.0		"	26.9		111	70-130			
Matrix Spike Dup (EJ21104-MSD1)	Sou	rce: 2J10001	-01	Prepared:	10/10/12 A	nalyzed: 10	)/11/12			
C6-C12	580	26.9	mg/kg dry	538	ND	108	75-125	0.851	20	
>C12-C28	583	26.9	"	538	ND	108	75-125	2.00	20	
>C28-C35	ND	26.9	"	0.00	ND		75-125		20	
Surrogate: 1-Chlorooctane	69.1		"	53.8		129	70-130			
Surrogate: o-Terphenyl	30.6		"	26.9		114	70-130			

Nova Safety & Environment

Project: SUG Historical 12 in. Crossover 1RP-1538

Source

Spike

%REC

2057 Commerce Midland TX, 79703 Project Number: [none]

Reporting

Project Manager: Camille Bryant

Fax: (432) 520-7701

RPD

# Organics by GC - Quality Control Permian Basin Environmental Lab

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EJ21105 - General Preparation (G	SC)									
Blank (EJ21105-BLK1)				Prepared &	Analyzed:	10/10/12				
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	65.5		ug/kg	60.0		109	75-125			
Surrogate: 4-Bromofluorobenzene	55.1		"	60.0		91.8	75-125			
LCS (EJ21105-BS1)				Prepared &	Analyzed:	10/10/12				
Benzene	0.0862	0.00100	mg/kg wet	0.100		86.2	80-120			
Toluene	0.105	0.00200	"	0.100		105	80-120			
Ethylbenzene	0.0995	0.00100	"	0.100		99.5	80-120			
Xylene (p/m)	0.199	0.00200	"	0.200		99.7	80-120			
Xylene (o)	0.0940	0.00100	"	0.100		94.0	80-120			
Surrogate: 1,4-Difluorobenzene	65.4		ug/kg	60.0		109	75-125			
Surrogate: 4-Bromofluorobenzene	57.2		"	60.0		95.3	75-125			

LCS Dup (EJ21105-BSD1)		Prepared & Analyzed: 10/10/12									
Benzene	0.0868	0.00100	mg/kg wet	0.100	86.8	80-120	0.636	20			
Toluene	0.107	0.00200	"	0.100	107	80-120	1.99	20			
Ethylbenzene	0.101	0.00100	"	0.100	101	80-120	1.50	20			
Xylene (p/m)	0.203	0.00200	"	0.200	101	80-120	1.72	20			
Xylene (o)	0.0958	0.00100	"	0.100	95.8	80-120	1.99	20			
Surrogate: 1,4-Difluorobenzene	65.2		ug/kg	60.0	109	75-125					
Surrogate: 4-Bromofluorobenzene	56.5		"	60.0	94.1	75-125					

Matrix Spike (EJ21105-MS1)	Sour	<b>Source: 2J10004-01</b> Prepared & Analyzed: 10/10/12						
Benzene	0.0656	0.00100	mg/kg dry	0.104	ND	63.0	80-120	QM-05
Toluene	0.0815	0.00200	"	0.104	ND	78.2	80-120	QM-05
Ethylbenzene	0.0786	0.00100	"	0.104	ND	75.5	80-120	QM-05
Xylene (p/m)	0.154	0.00200	"	0.208	ND	73.8	80-120	QM-05
Xylene (o)	0.0737	0.00100	"	0.104	ND	70.7	80-120	QM-05
Surrogate: 1,4-Difluorobenzene	64.7		ug/kg	60.0		108	75-125	
Surrogate: 4-Bromofluorobenzene	54.9		"	60.0		91.6	75-125	

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

# Organics by GC - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD		l
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	ı

### **Batch EJ21105 - General Preparation (GC)**

Matrix Spike Dup (EJ21105-MSD1)	Sour	rce: 2J10004-	-01	Prepared &	Analyzed:	10/10/12				
Benzene	0.0562	0.00100	mg/kg dry	0.104	ND	54.0	80-120	15.4	20	QM-05
Toluene	0.0711	0.00200	"	0.104	ND	68.3	80-120	13.6	20	QM-05
Ethylbenzene	0.0687	0.00100	"	0.104	ND	65.9	80-120	13.5	20	QM-05
Xylene (p/m)	0.134	0.00200	"	0.208	ND	64.6	80-120	13.4	20	QM-05
Xylene (o)	0.0656	0.00100	"	0.104	ND	63.0	80-120	11.6	20	QM-05
Surrogate: 1,4-Difluorobenzene	63.3		ug/kg	60.0		106	75-125			
Surrogate: 4-Bromofluorobenzene	54.6		"	60.0		90.9	75-125			

2057 Commerce

Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

# General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EJ21101 - *** DEFAULT PREP ***										
Blank (EJ21101-BLK1)				Prepared:	10/10/12 A	nalyzed: 10	/11/12			
% Moisture	ND	0.1	%							
Duplicate (EJ21101-DUP1)	Sour	ce: 2J09001-0	01	Prepared:	10/10/12 A	nalyzed: 10	/11/12			
% Moisture	ND	0.1	%		0.0				20	
Duplicate (EJ21101-DUP2)	Sour	ce: 2J10005-0	04	Prepared:	10/10/12 A	nalyzed: 10	/11/12			
% Moisture	2.0	0.1	%		2.0			0.00	20	
Batch EJ21102 - *** DEFAULT PREP ***										
Blank (EJ21102-BLK1)				Prepared:	10/10/12 A	nalyzed: 10	/11/12			
Chloride	ND	1.00	mg/kg dry wt. wet							
LCS (EJ21102-BS1)				Prepared:	10/10/12 A	nalyzed: 10	/11/12			
Chloride	9.75		mg/kg Wet	10.0		97.5	80-120			
LCS Dup (EJ21102-BSD1)				Prepared:	10/10/12 A	nalyzed: 10	/11/12			
Chloride	9.88		mg/kg Wet	10.0		98.8	80-120	1.37	20	
Duplicate (EJ21102-DUP1)	Sour	ce: 2J09001-0	01	Prepared:	10/10/12 A	nalyzed: 10	/11/12			
Chloride	15.4	1.00	mg/kg dry wt. dry		16.5			6.58	20	
Matrix Spike (EJ21102-MS1)	Sour	ce: 2J09001-0	01	Prepared:	10/10/12 A	nalyzed: 10	/11/12			
Chloride	57.5	1.00	mg/kg dry wt. dry	50.0	16.5	82.0	80-120			

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

### **Notes and Definitions**

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were

within acceptance limits showing that the laboratory is in control and the data is acceptable.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

	Drew	Durion		
Report Approved By:			Date:	10/11/2012

Brent Barron, Laboratory Director/Technical Director

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If you have received this material in error, please notify us immediately at 432-661-4184.



Project Manager:

Camille Bryant

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP
10014 S. County Road 1213

Midland, Texas 79706

Project Name:

SUG Historical 12" Crossover 1RP-1538

Phone: 432-661-4184

	Company Name NOVA Safety and Environmental	nd Env	ironme	ental								[·	r			•			7	Project #:	#	1	1	1	1											1
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	City/State/Zip: Midland, Texas 79703	exas 7	9703																	עַ	PO #				[ · ·	1	1		1						1	
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# PERMIAN BASIN ENVIRONMENTAL LAB, LP 10014 SCR 1213 Midland, TX 79706



# Analytical Report

# **Prepared for:**

Camille Bryant

Nova Safety & Environment

2057 Commerce

Midland, TX 79703

Project: SUG Historical 12 in. Crossover 1RP-1538

Project Number: 1RP-1538

Location: Lea County New Mexico

Lab Order Number: 2J26006



NELAP/TCEQ # T104704156-12-1

Report Date: 10/31/12

Nova Safety & Environment Project: SUG Historic

Project: SUG Historical 12 in. Crossover 1RP-1538

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
East Pit 1 @ 3'	2J26006-01	Soil	10/25/12 15:00	10-26-2012 09:23
East Pit 2 @ 3'	2J26006-02	Soil	10/25/12 15:05	10-26-2012 09:23
South Pit 1 @ 3'	2J26006-03	Soil	10/25/12 15:50	10-26-2012 09:23
South Pit 2 @ 3'	2J26006-04	Soil	10/25/12 15:55	10-26-2012 09:23
North Pit 1 @ 3'	2J26006-05	Soil	10/25/12 15:20	10-26-2012 09:23
North Pit 2 @ 3'	2J26006-06	Soil	10/25/12 15:25	10-26-2012 09:23
Pit SP-1	2J26006-07	Soil	10/25/12 13:00	10-26-2012 09:23

Fax: (432) 520-7701

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

East Pit 1 @ 3' 2J26006-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environm	ental Lab	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EJ23003	10/29/12	10/29/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EJ23003	10/29/12	10/29/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EJ23003	10/29/12	10/29/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EJ23003	10/29/12	10/29/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EJ23003	10/29/12	10/29/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		112 %	75-1.	25	EJ23003	10/29/12	10/29/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		106 %	75-1.	25	EJ23003	10/29/12	10/29/12	EPA 8021B	
C6-C12	ND	25.3	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
>C12-C28	ND	25.3	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
>C28-C35	ND	25.3	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
Surrogate: 1-Chlorooctane		86.3 %	70-1.	30	EJ23001	10/28/12	10/28/12	8015M	
Surrogate: o-Terphenyl		93.1 %	70-1.	30	EJ23001	10/28/12	10/28/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	10/28/12	10/28/12	8015M	
<b>General Chemistry Parameters by EP</b>	A / Standard Method	ls							
Chloride	5.29	1.01n	g/kg dry wt. dr	1	EJ23002	10/30/12	10/30/12	EPA 300.0	
% Moisture	1.0	0.1	%	1	EJ22901	10/26/12	10/29/12	% calculation	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

# East Pit 2 @ 3' 2J26006-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basii	1 Environm	iental Lab	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		112 %	75-1.	25	EJ22605	10/26/12	10/26/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		104 %	75-1.	25	EJ22605	10/26/12	10/26/12	EPA 8021B	
C6-C12	ND	25.3	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
>C12-C28	ND	25.3	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
>C28-C35	ND	25.3	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
Surrogate: 1-Chlorooctane		89.3 %	70-1.	30	EJ23001	10/28/12	10/28/12	8015M	
Surrogate: o-Terphenyl		95.1 %	70-1.	30	EJ23001	10/28/12	10/28/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	10/28/12	10/28/12	8015M	
General Chemistry Parameters by EI	PA / Standard Method	s						-	
Chloride	102	1.011	g/kg dry wt. dr	1	EJ23002	10/30/12	10/30/12	EPA 300.0	
% Moisture	1.0	0.1	%	1	EJ22901	10/26/12	10/29/12	% calculation	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

# South Pit 1 @ 3' 2J26006-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Marye		rmian Basii				Trepared	rmaryzea	Method	110103
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		113 %	75-1.	25	EJ22605	10/26/12	10/26/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		99.4 %	75-1.	25	EJ22605	10/26/12	10/26/12	EPA 8021B	
C6-C12	ND	25.5	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
>C12-C28	ND	25.5	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
>C28-C35	ND	25.5	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
Surrogate: 1-Chlorooctane		81.7 %	70-1.	30	EJ23001	10/28/12	10/28/12	8015M	
Surrogate: o-Terphenyl		90.7 %	70-1.	30	EJ23001	10/28/12	10/28/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	10/28/12	10/28/12	8015M	
General Chemistry Parameters by EP.	A / Standard Method	s							
Chloride	157	1.02n	g/kg dry wt. dr	1	EJ23002	10/30/12	10/30/12	EPA 300.0	
% Moisture	2.0	0.1	%	1	EJ22901	10/26/12	10/29/12	% calculation	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

# South Pit 2 @ 3' 2J26006-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Marye	Result	Limit	Oilta	Dilution	Baten	Trepared	7 mary zea	Wethod	110103
	P	ermian Basii	n Environm	ental Lal	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EJ23003	10/29/12	10/29/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EJ23003	10/29/12	10/29/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EJ23003	10/29/12	10/29/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EJ23003	10/29/12	10/29/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EJ23003	10/29/12	10/29/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		114 %	75-12	25	EJ23003	10/29/12	10/29/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		101 %	75-12	25	EJ23003	10/29/12	10/29/12	EPA 8021B	
C6-C12	ND	25.3	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
>C12-C28	ND	25.3	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
>C28-C35	ND	25.3	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
Surrogate: 1-Chlorooctane		81.6 %	70-13	30	EJ23001	10/28/12	10/28/12	8015M	
Surrogate: o-Terphenyl		89.2 %	70-13	30	EJ23001	10/28/12	10/28/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	10/28/12	10/28/12	8015M	
<b>General Chemistry Parameters by EPA / S</b>	tandard Metho	ds							
Chloride	31.1	1.01n	g/kg dry wt. dr	1	EJ23002	10/30/12	10/30/12	EPA 300.0	
% Moisture	1.0	0.1	%	1	EJ22901	10/26/12	10/29/12	% calculation	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

# North Pit 1 @ 3' 2J26006-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environn	nental Lal	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		111 %	75-1	25	EJ22605	10/26/12	10/26/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		97.3 %	75-1	25	EJ22605	10/26/12	10/26/12	EPA 8021B	
C6-C12	ND	27.8	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
>C12-C28	ND	27.8	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
>C28-C35	ND	27.8	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
Surrogate: 1-Chlorooctane		78.7 %	70-1	30	EJ23001	10/28/12	10/28/12	8015M	
Surrogate: o-Terphenyl		71.7 %	70-1	30	EJ23001	10/28/12	10/28/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	10/28/12	10/28/12	8015M	
<b>General Chemistry Parameters by EI</b>	PA / Standard Method	s							
Chloride	2.62	1.11n	g/kg dry wt. dr	1	EJ23002	10/30/12	10/30/12	EPA 300.0	
% Moisture	10.0	0.1	%	1	EJ22901	10/26/12	10/29/12	% calculation	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

# North Pit 2 @ 3' 2J26006-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basiı	1 Environm	iental Lab	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EJ23003	10/29/12	10/29/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EJ23003	10/29/12	10/29/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EJ23003	10/29/12	10/29/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EJ23003	10/29/12	10/29/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EJ23003	10/29/12	10/29/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		112 %	75-12	25	EJ23003	10/29/12	10/29/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		104 %	75-12	25	EJ23003	10/29/12	10/29/12	EPA 8021B	
C6-C12	ND	25.5	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
>C12-C28	ND	25.5	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
>C28-C35	ND	25.5	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
Surrogate: 1-Chlorooctane		83.7 %	70-1.	30	EJ23001	10/28/12	10/28/12	8015M	
Surrogate: o-Terphenyl		87.5 %	70-1.	30	EJ23001	10/28/12	10/28/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	10/28/12	10/28/12	8015M	
<b>General Chemistry Parameters by EP</b>	'A / Standard Method	s							
Chloride	880	2.55ng	g/kg dry wt. dr	2.5	EJ23002	10/30/12	10/30/12	EPA 300.0	
% Moisture	2.0	0.1	%	1	EJ22901	10/26/12	10/29/12	% calculation	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

# Pit SP-1 2J26006-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		rmian Basii	1 Environn	nental Lab					
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EJ22605	10/26/12	10/26/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		115 %	75-1.	25	EJ22605	10/26/12	10/26/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		102 %	75-1.	25	EJ22605	10/26/12	10/26/12	EPA 8021B	
C6-C12	ND	26.0	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
>C12-C28	822	26.0	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
>C28-C35	170	26.0	mg/kg dry	1	EJ23001	10/28/12	10/28/12	8015M	
Surrogate: 1-Chlorooctane		79.6 %	70-1.	30	EJ23001	10/28/12	10/28/12	8015M	
Surrogate: o-Terphenyl		89.8 %	70-1.	30	EJ23001	10/28/12	10/28/12	8015M	
Total Hydrocarbon nC6-nC35	992	25.0	mg/kg dry	1	[CALC]	10/28/12	10/28/12	8015M	
<b>General Chemistry Parameters by EP.</b>	A / Standard Methods	s							
Chloride	87.7	1.04n	g/kg dry wt. dr	1	EJ23002	10/30/12	10/30/12	EPA 300.0	
% Moisture	4.0	0.1	%	1	EJ22901	10/26/12	10/29/12	% calculation	

Nova Safety & Environment

Project: SUG Historical 12 in. Crossover 1RP-1538

2057 Commerce Midland TX, 79703 Project Number: 1RP-1538 Project Manager: Camille Bryant Fax: (432) 520-7701

# Organics by GC - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD		l
Ana	lyte Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	l

Blank (EJ22605-BLK1)				Prepared &	Analyzed	10/26/12				
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	67.4		ug/kg	60.0		112	75-125			
Surrogate: 4-Bromofluorobenzene	63.6		"	60.0		106	75-125			
LCS (EJ22605-BS1)				Prepared &	Analyzed	10/26/12				
Benzene	0.0861	0.00100	mg/kg wet	0.100		86.1	80-120			
Toluene	0.116	0.00200	"	0.100		116	80-120			
Ethylbenzene	0.118	0.00100	"	0.100		118	80-120			
Xylene (p/m)	0.238	0.00200	"	0.200		119	80-120			
Xylene (o)	0.115	0.00100	"	0.100		115	80-120			
Surrogate: 1,4-Difluorobenzene	73.2		ug/kg	60.0		122	75-125			
Surrogate: 4-Bromofluorobenzene	70.5		"	60.0		118	75-125			
LCS Dup (EJ22605-BSD1)				Prepared &	Analyzed	10/26/12				
Benzene	0.0814	0.00100	mg/kg wet	0.100		81.4	80-120	5.56	20	
Toluene	0.110	0.00200	"	0.100		110	80-120	5.24	20	
Ethylbenzene	0.113	0.00100	"	0.100		113	80-120	4.63	20	
Xylene (p/m)	0.235	0.00200	"	0.200		118	80-120	1.23	20	
Xylene (o)	0.110	0.00100	"	0.100		110	80-120	4.39	20	
Surrogate: 1,4-Difluorobenzene	70.6		ug/kg	60.0		118	75-125			
Surrogate: 4-Bromofluorobenzene	70.0		"	60.0		117	75-125			
Matrix Spike (EJ22605-MS1)	Sou	rce: 2J26006	-02	Prepared &	Analyzed	10/26/12				
Benzene	0.0451	0.00100	mg/kg dry	0.101	ND	44.6	80-120			QM-0:
Toluene	0.0588	0.00200	"	0.101	ND	58.2	80-120			QM-03
Ethylbenzene	0.0565	0.00100	"	0.101	ND	55.9	80-120			QM-05
Xylene (p/m)	0.107	0.00200	"	0.202	ND	53.0	80-120			QM-03
Xylene (o)	0.0577	0.00100	"	0.101	ND	57.1	80-120			QM-05
Surrogate: 1,4-Difluorobenzene	66.3		ug/kg	60.0		111	75-125			
Surrogate: 4-Bromofluorobenzene	49.3		"	60.0		82.2	75-125			

2057 Commerce Project Number: 1RP-1538
Midland TX, 79703 Project Manager: Camille Bryant

Fax: (432) 520-7701

# Organics by GC - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EJ22605 - General Preparation (GC)										
Matrix Spike Dup (EJ22605-MSD1)	Sou	ırce: 2J26006	-02	Prepared &	& Analyzed:	10/26/12				
Benzene	0.0487	0.00100	mg/kg dry	0.101	ND	48.2	80-120	7.65	20	QM-0
Toluene	0.0654	0.00200	"	0.101	ND	64.8	80-120	10.6	20	QM-0
Ethylbenzene	0.0597	0.00100	"	0.101	ND	59.1	80-120	5.49	20	QM-0
Xylene (p/m)	0.110	0.00200	"	0.202	ND	54.4	80-120	2.52	20	QM-0
Xylene (o)	0.0592	0.00100	"	0.101	ND	58.7	80-120	2.71	20	QM-0
Surrogate: 1,4-Difluorobenzene	66.0		ug/kg	60.0		110	75-125			
Surrogate: 4-Bromofluorobenzene	40.3		"	60.0		67.2	75-125			S-G
Batch EJ23001 - 8015M										
Blank (EJ23001-BLK1)				Prepared &	& Analyzed:	10/28/12				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	79.6		"	100		79.6	70-130			
Surrogate: o-Terphenyl	43.8		"	50.0		87.5	70-130			
LCS (EJ23001-BS1)				Prepared &	& Analyzed:	10/28/12				
C6-C12	841	25.0	mg/kg wet	1000		84.1	75-125			
>C12-C28	794	25.0	"	1000		79.4	75-125			
>C28-C35	ND	25.0	"	0.00			75-125			
Surrogate: 1-Chlorooctane	85.3		"	100		85.3	70-130			
Surrogate: o-Terphenyl	39.1		"	50.0		78.2	70-130			
LCS Dup (EJ23001-BSD1)				Prepared &	& Analyzed:	10/28/12				
C6-C12	849	25.0	mg/kg wet	1000		84.9	75-125	0.907	20	
>C12-C28	818	25.0	"	1000		81.8	75-125	2.95	20	
>C28-C35	ND	25.0	"	0.00			75-125		20	
Surrogate: 1-Chlorooctane	83.4		"	100		83.4	70-130			
Surrogate: o-Terphenyl	38.3		"	50.0		76.6	70-130			

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

# Organics by GC - Quality Control Permian Basin Environmental Lab

[ A I 4 -	D 14	Reporting	T.T'	Spike	Source	0/PEC	%REC	DPD	RPD	NI. (
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EJ23001 - 8015M										
Matrix Spike (EJ23001-MS1)	Sou	rce: 2J26005	-02	Prepared &	Analyzed:	10/28/12				
C6-C12	822	25.8	mg/kg dry	1030	ND	79.7	75-125			
>C12-C28	852	25.8	"	1030	ND	82.6	75-125			
>C28-C35	ND	25.8	"	0.00	ND		75-125			
Surrogate: 1-Chlorooctane	87.6		"	103		85.0	70-130			
Surrogate: o-Terphenyl	41.2		"	51.5		79.9	70-130			
Matrix Spike Dup (EJ23001-MSD1)	Sou	rce: 2J26005	-02	Prepared &	Analyzed:	10/28/12				
C6-C12	929	25.8	mg/kg dry	1030	ND	90.1	75-125	12.3	20	
>C12-C28	834	25.8	"	1030	ND	80.9	75-125	2.14	20	
>C28-C35	ND	25.8	"	0.00	ND		75-125		20	
Surrogate: 1-Chlorooctane	90.8		"	103		88. I	70-130			
Surrogate: o-Terphenyl	43.8		"	51.5		84.9	70-130			
Batch EJ23003 - General Preparation (G										
Blank (EJ23003-BLK1)				Prepared &	z Analyzed:	10/29/12				
	ND	0.00100	mg/kg wet	Prepared &	Analyzed:	10/29/12				
Blank (EJ23003-BLK1)		0.00100 0.00200	mg/kg wet	Prepared &	z Analyzed:	10/29/12				
Blank (EJ23003-BLK1) Benzene	ND			Prepared &	z Analyzed:	10/29/12				
Blank (EJ23003-BLK1) Benzene Toluene	ND ND	0.00200	"	Prepared &	z Analyzed:	10/29/12				
Blank (EJ23003-BLK1) Benzene Toluene Ethylbenzene	ND ND ND	0.00200 0.00100	"	Prepared &	z Analyzed:	10/29/12				
Blank (EJ23003-BLK1) Benzene Toluene Ethylbenzene Xylene (p/m)	ND ND ND ND	0.00200 0.00100 0.00200	"	Prepared &	z Analyzed:	10/29/12	75-125			
Blank (EJ23003-BLK1) Benzene Toluene Ethylbenzene Xylene (p/m) Xylene (o)	ND ND ND ND	0.00200 0.00100 0.00200	" " "		z Analyzed:		75-125 75-125			
Blank (EJ23003-BLK1) Benzene Toluene Ethylbenzene Xylene (p/m) Xylene (o) Surrogate: 1,4-Difluorobenzene	ND ND ND ND ND	0.00200 0.00100 0.00200	" " ug/kg	60.0	a Analyzed:	112 107				
Blank (EJ23003-BLK1)  Benzene Toluene Ethylbenzene Xylene (p/m) Xylene (o) Surrogate: 1,4-Difluorobenzene Surrogate: 4-Bromofluorobenzene	ND ND ND ND ND	0.00200 0.00100 0.00200	" " ug/kg	60.0		112 107				
Blank (EJ23003-BLK1)  Benzene Toluene Ethylbenzene Xylene (p/m) Xylene (o) Surrogate: 1,4-Difluorobenzene Surrogate: 4-Bromofluorobenzene LCS (EJ23003-BS1)	ND ND ND ND ND 67.2 64.1	0.00200 0.00100 0.00200 0.00100	" " " ug/kg "	60.0 60.0 Prepared &		112 107 10/29/12	75-125			
Blank (EJ23003-BLK1)  Benzene Toluene Ethylbenzene Xylene (p/m) Xylene (o) Surrogate: 1,4-Difluorobenzene Surrogate: 4-Bromofluorobenzene LCS (EJ23003-BS1) Benzene	ND ND ND ND ND 67.2 64.1	0.00200 0.00100 0.00200 0.00100	" " " " " " " " " " " " " " " " " " "	60.0 60.0 Prepared & 0.100		112 107 10/29/12 87.7	75-125 80-120			
Blank (EJ23003-BLK1)  Benzene Toluene Ethylbenzene Xylene (p/m) Xylene (o) Surrogate: 1,4-Difluorobenzene Surrogate: 4-Bromofluorobenzene LCS (EJ23003-BS1) Benzene Toluene	ND ND ND ND ND 67.2 64.1	0.00200 0.00100 0.00200 0.00100 0.00100 0.00200	" " " " " " " " " " " " " " " " " " "	60.0 60.0 Prepared & 0.100 0.100		112 107 10/29/12 87.7 118	75-125 80-120 80-120			
Blank (EJ23003-BLK1)  Benzene Toluene Ethylbenzene Xylene (p/m) Xylene (o) Surrogate: 1,4-Difluorobenzene Surrogate: 4-Bromofluorobenzene LCS (EJ23003-BS1) Benzene Toluene Ethylbenzene	ND ND ND ND ND 67.2 64.1	0.00200 0.00100 0.00200 0.00100 0.00200 0.00200 0.00100	ug/kg " mg/kg wet "	60.0 60.0 Prepared & 0.100 0.100 0.100		112 107 10/29/12 87.7 118 119	75-125 80-120 80-120 80-120			
Blank (EJ23003-BLK1)  Benzene  Toluene  Ethylbenzene  Xylene (p/m)  Xylene (o)  Surrogate: 1,4-Difluorobenzene  Surrogate: 4-Bromofluorobenzene  LCS (EJ23003-BS1)  Benzene  Toluene  Ethylbenzene  Xylene (p/m)	ND ND ND ND ND 67.2 64.1	0.00200 0.00100 0.00200 0.00100 0.00200 0.00100 0.00200	" " " " " " " " " " " " " " " " " " "	60.0 60.0 Prepared & 0.100 0.100 0.100 0.200		112 107 10/29/12 87.7 118 119 116	80-120 80-120 80-120 80-120 80-120			

Fax: (432) 520-7701

2057 Commerce Midland TX, 79703 Project Number: 1RP-1538
Project Manager: Camille Bryant

Fax: (432) 520-7701

# Organics by GC - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EJ23003 - General Preparation (GC)										
LCC D (E12202 DCD4)				D 10		10/20/12				

LCS Dup (EJ23003-BSD1)		Prepared & Analyzed: 10/29/12									
Benzene	0.0872	0.00100	mg/kg wet	0.100	87.2	80-120	0.549	20			
Toluene	0.118	0.00200	"	0.100	118	80-120	0.466	20			
Ethylbenzene	0.119	0.00100	"	0.100	119	80-120	0.378	20			
Xylene (p/m)	0.231	0.00200	"	0.200	116	80-120	0.335	20			
Xylene (o)	0.114	0.00100	"	0.100	114	80-120	0.658	20			
Surrogate: 1,4-Difluorobenzene	67.6		ug/kg	60.0	113	75-125					
Surrogate: 4-Bromofluorobenzene	70.3		"	60.0	117	75-125					

2057 Commerce Midland TX, 79703

Fax: (432) 520-7701

Project Number: 1RP-1538 Project Manager: Camille Bryant

# General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EJ22901 - *** DEFAULT PREP ***										
Blank (EJ22901-BLK1)				Prepared:	10/26/12 A	nalyzed: 10	/29/12			
% Moisture	ND	0.1	%							
Duplicate (EJ22901-DUP1)	Sour	rce: 2J26001-	-01	Prepared:	10/26/12 A	nalyzed: 10	/29/12			
% Moisture	3.0	0.1	%		2.0			40.0	20	R3
Batch EJ23002 - *** DEFAULT PREP ***										
Blank (EJ23002-BLK1)				Prepared &	& Analyzed:	10/30/12				
Chloride	ND	1.00	mg/kg dry wt. wet							
LCS (EJ23002-BS1)				Prepared &	& Analyzed:	10/30/12				
Chloride	10.8		mg/kg Wet	10.0		108	80-120			
LCS Dup (EJ23002-BSD1)				Prepared &	& Analyzed:	10/30/12				
Chloride	11.0		mg/kg Wet	10.0		110	80-120	1.49	20	
Duplicate (EJ23002-DUP1)	Sour	rce: 2J26005-	-01	Prepared &	& Analyzed:	10/30/12				
Chloride	51.7	1.03	mg/kg dry wt. dry		51.4			0.620	20	
Matrix Spike (EJ23002-MS1)	Sour	rce: 2J26005-	-01	Prepared &	& Analyzed:	10/30/12				
Chloride	127	1.03	mg/kg dry wt. dry	64.4	51.4	117	80-120			
Matrix Spike (EJ23002-MS2)	Sour	rce: 2J26006-	-07	Prepared &	& Analyzed:	10/30/12				
Chloride	236	1.04	mg/kg dry wt. dry	130	87.7	114	80-120			

Fax: (432) 520-7701 Nova Safety & Environment Project: SUG Historical 12 in. Crossover 1RP-1538

2057 Commerce Project Number: 1RP-1538 Midland TX, 79703 Project Manager: Camille Bryant

### **Notes and Definitions**

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

R3 The RPD exceeded the acceptance limit due to sample matrix effects.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were

within acceptance limits showing that the laboratory is in control and the data is acceptable.

DET Analyte DETECTED

Analyte NOT DETECTED at or above the reporting limit ND

NR Not Reported

Sample results reported on a dry weight basis dry

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Duplicate Dup

	Drew	Durron			
Report Approved By:			Date:	10/31/2012	

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-661-4184.



# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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		Direc							Pit SP-1	North Pit 2 @ 3'	North Pit 1 @ 3'	South Pit 2 @ 3'	South Pit 1 @ 3	East Pit 2 @ 3'	East Pit 1 @ 3'	FIELD CODE	2326006			nathura (	}		dress:	me 	ger:	
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# PERMIAN BASIN ENVIRONMENTAL LAB, LP 10014 SCR 1213 Midland, TX 79706



# Analytical Report

# **Prepared for:**

Camille Bryant

Nova Safety & Environment

2057 Commerce

Midland, TX 79703

Project: SUG Historical 12 in. Crossover 1RP-1538

Project Number: [none]

Location: Lea County New Mexico

Lab Order Number: 2J29007



NELAP/TCEQ # T104704156-12-1

Report Date: 11/02/12

Nova Safety & Environment

Project: SUG Historical 12 in. Crossover 1RP-1538

Project Number: [none]

2057 Commerce Midland TX, 79703

Project Manager: Camille Bryant

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
West Trench-1 @ 16'	2J29007-01	Soil	10/26/12 13:45	10-29-2012 13:31

Fax: (432) 520-7701

Fax: (432) 520-7701 Nova Safety & Environment Project: SUG Historical 12 in. Crossover 1RP-1538

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

# West Trench-1 @ 16' 2J29007-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environm	iental Lal	b				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EJ23103	10/30/12	10/30/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EJ23103	10/30/12	10/30/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EJ23103	10/30/12	10/30/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EJ23103	10/30/12	10/30/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EJ23103	10/30/12	10/30/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		112 %	75-1.	25	EJ23103	10/30/12	10/30/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		103 %	75-1.	25	EJ23103	10/30/12	10/30/12	EPA 8021B	
<b>General Chemistry Parameters by El</b>	PA / Standard Method	s							
Chloride	209	1.05n	g/kg dry wt. dr	1	EK20101	11/01/12	11/01/12	EPA 300.0	
% Moisture	5.0	0.1	%	1	EJ23004	10/29/12	10/30/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80	15M							
C6-C12	ND	26.3	mg/kg dry	1	EK20102	10/31/12	10/31/12	8015M	
>C12-C28	ND	26.3	mg/kg dry	1	EK20102	10/31/12	10/31/12	8015M	
>C28-C35	ND	26.3	mg/kg dry	1	EK20102	10/31/12	10/31/12	8015M	
Surrogate: 1-Chlorooctane		86.6 %	70-1.	30	EK20102	10/31/12	10/31/12	8015M	
Surrogate: o-Terphenyl		96.7 %	70-1.	30	EK20102	10/31/12	10/31/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	10/31/12	10/31/12	8015M	

2057 Commerce Midland TX, 79703 Project Number: [none]

Project Manager: Camille Bryant

Fax: (432) 520-7701

# Organics by GC - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD		ĺ
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	ĺ

Batch EJ23103 - General Preparatio	n (GC)									
Blank (EJ23103-BLK1)		Prepared & Analyzed: 10/30/12								
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	68.8		ug/kg	60.0		115	75-125			
Surrogate: 4-Bromofluorobenzene	58.0		"	60.0		96.6	75-125			
LCS (EJ23103-BS1)	Prepared & Analyzed: 10/30/12									
Benzene	0.0836	0.00100	mg/kg wet	0.100		83.6	80-120			
Toluene	0.112	0.00200	"	0.100		112	80-120			
Ethylbenzene	0.112	0.00100	"	0.100		112	80-120			
Xylene (p/m)	0.234	0.00200	"	0.200		117	80-120			
Xylene (o)	0.111	0.00100	"	0.100		111	80-120			
Surrogate: 1,4-Difluorobenzene	67.6		ug/kg	60.0		113	75-125			
Surrogate: 4-Bromofluorobenzene	70.7		"	60.0		118	75-125			
LCS Dup (EJ23103-BSD1)				Prepared &	Analyzed	: 10/30/12				
Benzene	0.0838	0.00100	mg/kg wet	0.100		83.8	80-120	0.251	20	
Toluene	0.112	0.00200	"	0.100		112	80-120	0.651	20	
Ethylbenzene	0.112	0.00100	"	0.100		112	80-120	0.366	20	
Xylene (p/m)	0.233	0.00200	"	0.200		116	80-120	0.514	20	
Xylene (o)	0.110	0.00100	"	0.100		110	80-120	1.34	20	
Surrogate: 1,4-Difluorobenzene	67.9		ug/kg	60.0		113	75-125			
Surrogate: 4-Bromofluorobenzene	70.0		"	60.0		117	75-125			
Matrix Spike (EJ23103-MS1)	Source: 2J29008-06			Prepared &	Analyzed	: 10/30/12				
Benzene	0.0627	0.00100	mg/kg dry	0.106	ND	59.0	80-120			QM-0
Toluene	0.0840	0.00200	"	0.106	ND	78.9	80-120			QM-0
Ethylbenzene	0.0844	0.00100	"	0.106	ND	79.3	80-120			QM-0
Xylene (p/m)	0.175	0.00200	"	0.213	ND	82.2	80-120			
Xylene (o)	0.0823	0.00100	"	0.106	ND	77.4	80-120			QM-0
Surrogate: 1,4-Difluorobenzene	68.1		ug/kg	60.0		114	75-125			
Surrogate: 4-Bromofluorobenzene	68.0		"	60.0		113	75-125			

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

### Organics by GC - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD		l
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	ı

### **Batch EJ23103 - General Preparation (GC)**

Matrix Spike Dup (EJ23103-MSD1)	Sour	rce: 2J29008	-06	Prepared &	Analyzed:	10/30/12				
Benzene	0.0498	0.00100	mg/kg dry	0.106	ND	46.8	80-120	23.1	20	QM-05
Toluene	0.0640	0.00200	"	0.106	ND	60.2	80-120	27.0	20	QM-05
Ethylbenzene	0.0663	0.00100	"	0.106	ND	62.3	80-120	24.0	20	QM-05
Xylene (p/m)	0.137	0.00200	"	0.213	ND	64.4	80-120	24.3	20	QM-05
Xylene (o)	0.0669	0.00100	"	0.106	ND	62.9	80-120	20.7	20	QM-05
Surrogate: 1,4-Difluorobenzene	70.4		ug/kg	60.0		117	75-125			
Surrogate: 4-Bromofluorobenzene	67.2		"	60.0		112	75-125			

2057 Commerce

Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

` /

### General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
		Ziiiit		20.01	1100011	,,,,,,,	2		2	11000
Batch EJ23004 - *** DEFAULT PREP ***										
Blank (EJ23004-BLK1)				Prepared:	10/29/12 Aı	nalyzed: 10	/30/12			
% Moisture	ND	0.1	%							
Duplicate (EJ23004-DUP1)	Sour	rce: 2J29002	-01	Prepared:	10/29/12 Aı	nalyzed: 10	/30/12			
% Moisture	7.0	0.1	%		7.0			0.00	20	
Batch EK20101 - *** DEFAULT PREP ***										
Blank (EK20101-BLK1)				Prepared &	ኔ Analyzed:	11/01/12				
Chloride	ND	1.00	mg/kg dry wt. wet							
LCS (EK20101-BS1)				Prepared &	k Analyzed:	11/01/12				
Chloride	11.1		mg/kg Wet	10.0		111	80-120			
LCS Dup (EK20101-BSD1)				Prepared &	ኔ Analyzed:	11/01/12				
Chloride	11.2		mg/kg Wet	10.0		112	80-120	1.22	20	
Duplicate (EK20101-DUP1)	Soui	rce: 2J29007	-01	Prepared &	ኔ Analyzed:	11/01/12				
Chloride	209	1.05	mg/kg dry wt. dry		209			0.0805	20	
Matrix Spike (EK20101-MS1)	Sour	rce: 2J29007	-01	Prepared &	k Analyzed:	11/01/12				
Chloride	323	1.05	mg/kg dry wt. dry	105	209	108	80-120			

Nova Safety & Environment Project:

2057 Commerce

Project: SUG Historical 12 in. Crossover 1RP-1538

Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

### Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source	0.48	%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EK20102 - 8015M										
Blank (EK20102-BLK1)				Prepared &	Analyzed:	10/31/12				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	88.6		"	100		88.6	70-130			
Surrogate: o-Terphenyl	48.6		"	50.0		97.2	70-130			
LCS (EK20102-BS1)				Prepared &	Analyzed:	10/31/12				
C6-C12	876	25.0	mg/kg wet	1000		87.6	75-125			
>C12-C28	830	25.0	"	1000		83.0	75-125			
>C28-C35	ND	25.0	"	0.00			75-125			
Surrogate: 1-Chlorooctane	98.2		"	100		98.2	70-130			
Surrogate: o-Terphenyl	47.0		"	50.0		94.0	70-130			
LCS Dup (EK20102-BSD1)				Prepared &	Analyzed:	10/31/12				
C6-C12	815	25.0	mg/kg wet	1000		81.5	75-125	7.20	20	
>C12-C28	818	25.0	"	1000		81.8	75-125	1.42	20	
>C28-C35	ND	25.0	"	0.00			75-125		20	
Surrogate: 1-Chlorooctane	98.5		"	100		98.5	70-130			
Surrogate: o-Terphenyl	45.5		"	50.0		91.1	70-130			
Matrix Spike (EK20102-MS1)	Sour	ce: 2J29007	-01	Prepared &	Analyzed:	10/31/12				
C6-C12	996	26.3	mg/kg dry	1050	ND	94.7	75-125			
>C12-C28	887	26.3	"	1050	ND	84.2	75-125			
>C28-C35	ND	26.3	"	0.00	ND		75-125			
Surrogate: 1-Chlorooctane	115		"	105		110	70-130			
Surrogate: o-Terphenyl	55.3		"	52.6		105	70-130			
Matrix Spike Dup (EK20102-MSD1)	Sour	ce: 2J29007	-01	Prepared &	Analyzed:	10/31/12				
C6-C12	950	26.3	mg/kg dry	1050	ND	90.2	75-125	4.81	20	
>C12-C28	907	26.3	"	1050	ND	86.2	75-125	2.29	20	
>C28-C35	ND	26.3	"	0.00	ND		75-125		20	
Surrogate: 1-Chlorooctane	107		"	105		102	70-130			
Surrogate: o-Terphenyl	50.4		"	52.6		95.7	70-130			

Fax: (432) 520-7701

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

### **Notes and Definitions**

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were

within acceptance limits showing that the laboratory is in control and the data is acceptable.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

	Drew	Darror			
Report Approved By:			Date:	11/2/2012	

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

0 00

Company Address:

Company Name

Project Manager:

City/State/Zip:

Midland, Texas 79703

432.520.7720

Fax No:

432.520.7701

Report Format:

Standard

TRRP

NPDES

Project Loc:

Lea County New Mexico

PO #:

2057 Commerce

Telephone No:

NOVA Safety and Environmental CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST Camille Bryant Permian Basin Environmental Lab, LP 10014 S. County Road 1213 Midland, Texas 79706 Project Name: Project #: Phone: 432-661-4184 SUG Historical 12" Crossover 1RP-1538 Page 9 of 9

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# PERMIAN BASIN ENVIRONMENTAL LAB, LP 10014 SCR 1213 Midland, TX 79706



# Analytical Report

### **Prepared for:**

Camille Bryant

Nova Safety & Environment

2057 Commerce

Midland, TX 79703

Project: SUG Historical 12 in. Crossover 1RP-1538

Project Number: 1RP-1538 Location: Lea County, NM

Lab Order Number: 2K13001



NELAP/TCEQ # T104704156-12-1

Report Date: 11/16/12

Nova Safety & Environment Projec

Project: SUG Historical 12 in. Crossover 1RP-1538

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
North Pit-2A	2K13001-01	Soil	11/12/12 14:50	11-13-2012 10:43

Fax: (432) 520-7701

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

North Pit-2A 2K13001-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	_								

### Permian Basin Environmental Lab

**General Chemistry Parameters by EPA / Standard Methods** 

Chloride	118	1.01ng/kg dry wt. dr	1	EK21602	11/16/12	11/16/12	EPA 300.0
% Moisture	1.0	0.1 %	1	EK21501	11/14/12	11/15/12	% calculation

Nova Safety & Environment

Project: SUG Historical 12 in. Crossover 1RP-1538

Fax: (432) 520-7701

2057 Commerce Midland TX, 79703 Project Number: 1RP-1538 Project Manager: Camille Bryant

### General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EK21501 - *** DEFAULT PREP ***										
Blank (EK21501-BLK1)				Prepared &	Analyzed:	11/15/12				
% Moisture	ND	0.1	%							
Duplicate (EK21501-DUP1)	Sou	rce: 2K12005	-01	Prepared: 1	1/14/12 Aı	nalyzed: 11	/15/12			
% Moisture	ND	0.1	%		0.0				20	
Batch EK21602 - *** DEFAULT PREP ***										
Blank (EK21602-BLK1)				Prepared &	Analyzed:	11/16/12				
Chloride	ND	1.00	mg/kg dry wt. wet							
LCS (EK21602-BS1)				Prepared &	: Analyzed:	11/16/12				
Chloride	9.84		mg/kg Wet	10.0		98.4	80-120			
LCS Dup (EK21602-BSD1)				Prepared &	Analyzed:	11/16/12				
Chloride	10.1		mg/kg Wet	10.0		101	80-120	2.22	20	
Duplicate (EK21602-DUP1)	Sou	rce: 2K14003	-01	Prepared &	Analyzed:	11/16/12				
Chloride	747	1.11	mg/kg dry wt. dry		719			3.82	20	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### **Notes and Definitions**

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

	Burnon		
Report Approved By:		Date:	11/16/2012

Brent Barron, Laboratory Director/Technical Director

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If you have received this material in error, please notify us immediately at 432-686-7235.

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# PERMIAN BASIN ENVIRONMENTAL LAB, LP 10014 SCR 1213 Midland, TX 79706



# Analytical Report

### **Prepared for:**

Camille Bryant

Nova Safety & Environment

2057 Commerce

Midland, TX 79703

Project: SUG Historical 12 in. Crossover 1RP-1538

Project Number: 1RP-1538 Location: Lea, Co. New Mexico

Lab Order Number: 2L03001



NELAP/TCEQ # T104704156-12-1

Report Date: 12/10/12

Nova Safety & Environment

Project: SUG Historical 12 in. Crossover 1RP-1538

2057 Commerce Midland TX, 79703 Project Number: 1RP-1538 Project Manager: Camille Bryant

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
North Wall 1 @ 14 ft	2L03001-01	Soil	11/30/12 09:00	12-03-2012 08:42
North Wall 2 @ 14 ft	2L03001-02	Soil	11/30/12 09:05	12-03-2012 08:42
South Wall 1 @ 16 ft	2L03001-03	Soil	11/30/12 09:10	12-03-2012 08:42
South Wall 2 @ 16 ft	2L03001-04	Soil	11/30/12 09:15	12-03-2012 08:42
West Wall 1 @ 16 ft	2L03001-05	Soil	11/30/12 09:20	12-03-2012 08:42
West Wall 2 @ 14 ft	2L03001-06	Soil	11/30/12 09:25	12-03-2012 08:42
Pit Floor 1 @ 4 ft	2L03001-07	Soil	11/30/12 09:30	12-03-2012 08:42

Fax: (432) 520-7701

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

North Wall 1 @ 14 ft 2L03001-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	ermian Basi	n Environn	nental Lal	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		108 %	75-1	25	EL20305	12/03/12	12/03/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		98.4 %	75-1	25	EL20305	12/03/12	12/03/12	EPA 8021B	
General Chemistry Parameters by El	PA / Standard Method	ls							
Chloride	189	1.04	mg/kg dry	1	EL20306	12/03/12	12/03/12	EPA 300.0	
% Moisture	4.0	0.1	%	1	EL20307	12/03/12	12/03/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80	)15M							
C6-C12	ND	26.0	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
>C12-C28	ND	26.0	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
>C28-C35	ND	26.0	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
Surrogate: 1-Chlorooctane		77.8 %	70-1	30	EL20304	12/03/12	12/03/12	8015M	
Surrogate: o-Terphenyl		82.3 %	70-1	30	EL20304	12/03/12	12/03/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/03/12	12/03/12	8015M	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### North Wall 2 @ 14 ft 2L03001-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Permian Basii	n Environn	nental Lal	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		108 %	75-1	25	EL20305	12/03/12	12/03/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		103 %	75-1	25	EL20305	12/03/12	12/03/12	EPA 8021B	
<b>General Chemistry Parameters by EPA / Stan</b>	dard Meth	ods							
Chloride	307	1.05	mg/kg dry	1	EL20306	12/03/12	12/03/12	EPA 300.0	
% Moisture	5.0	0.1	%	1	EL20307	12/03/12	12/03/12	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EP	A Method	8015M							
C6-C12	ND	26.3	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
>C12-C28	ND	26.3	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
>C28-C35	ND	26.3	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
Surrogate: 1-Chlorooctane		76.1 %	70-1	30	EL20304	12/03/12	12/03/12	8015M	
Surrogate: o-Terphenyl		82.3 %	70-1	30	EL20304	12/03/12	12/03/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/03/12	12/03/12	8015M	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### South Wall 1 @ 16 ft 2L03001-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	I	Permian Basii	n Environn	nental Lal	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		106 %	75-1	25	EL20305	12/03/12	12/03/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		105 %	75-1	25	EL20305	12/03/12	12/03/12	EPA 8021B	
<b>General Chemistry Parameters by EPA / Sta</b>	ndard Metho	ods							
Chloride	62.8	1.05	mg/kg dry	1	EL20306	12/03/12	12/03/12	EPA 300.0	
% Moisture	5.0	0.1	%	1	EL20307	12/03/12	12/03/12	% calculation	
Total Petroleum Hydrocarbons C6-C35 by E	PA Method 8	8015M							
C6-C12	ND	26.3	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
>C12-C28	ND	26.3	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
>C28-C35	ND	26.3	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
Surrogate: 1-Chlorooctane		75.9 %	70-1	30	EL20304	12/03/12	12/03/12	8015M	
Surrogate: o-Terphenyl		82.3 %	70-1	30	EL20304	12/03/12	12/03/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/03/12	12/03/12	8015M	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### South Wall 2 @ 16 ft 2L03001-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	]	Permian Basii	n Environn	nental Lal	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		107 %	75-1	25	EL20305	12/03/12	12/03/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		105 %	75-1	25	EL20305	12/03/12	12/03/12	EPA 8021B	
<b>General Chemistry Parameters by EPA / Stan</b>	dard Meth	ods							
Chloride	400	1.04	mg/kg dry	1	EL20306	12/03/12	12/03/12	EPA 300.0	
% Moisture	4.0	0.1	%	1	EL20307	12/03/12	12/03/12	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EF	A Method	8015M							
C6-C12	ND	26.0	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
>C12-C28	ND	26.0	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
>C28-C35	ND	26.0	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
Surrogate: 1-Chlorooctane		78.3 %	70-1	30	EL20304	12/03/12	12/03/12	8015M	
Surrogate: o-Terphenyl		83.9 %	70-1	30	EL20304	12/03/12	12/03/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/03/12	12/03/12	8015M	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### West Wall 1 @ 16 ft 2L03001-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	]	Permian Basii	ı Environn	nental Lal	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		107 %	75-1	25	EL20305	12/03/12	12/03/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		104 %	75-1	25	EL20305	12/03/12	12/03/12	EPA 8021B	
<b>General Chemistry Parameters by EPA / Star</b>	dard Meth	ods							
Chloride	287	1.03	mg/kg dry	1	EL20306	12/03/12	12/03/12	EPA 300.0	
% Moisture	3.0	0.1	%	1	EL20307	12/03/12	12/03/12	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EI	A Method	8015M							
C6-C12	ND	25.8	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
>C12-C28	ND	25.8	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
>C28-C35	ND	25.8	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
Surrogate: 1-Chlorooctane		83.8 %	70-1	30	EL20304	12/03/12	12/03/12	8015M	
Surrogate: o-Terphenyl		91.4 %	70-1	30	EL20304	12/03/12	12/03/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/03/12	12/03/12	8015M	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### West Wall 2 @ 14 ft 2L03001-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	ermian Basi	n Environn	nental Lal	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		106 %	75-1	25	EL20305	12/03/12	12/03/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		105 %	75-1	25	EL20305	12/03/12	12/03/12	EPA 8021B	
General Chemistry Parameters by El	PA / Standard Method	ls							
Chloride	132	1.04	mg/kg dry	1	EL20306	12/03/12	12/03/12	EPA 300.0	
% Moisture	4.0	0.1	%	1	EL20307	12/03/12	12/03/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80	)15M							
C6-C12	ND	26.0	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
>C12-C28	ND	26.0	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
>C28-C35	ND	26.0	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
Surrogate: 1-Chlorooctane		82.2 %	70-1	30	EL20304	12/03/12	12/03/12	8015M	
Surrogate: o-Terphenyl		90.2 %	70-1	30	EL20304	12/03/12	12/03/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/03/12	12/03/12	8015M	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

# Pit Floor 1 @ 4 ft 2L03001-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
	Pe	ermian Basir	ı Environm	nental Lal	<u> </u>				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20305	12/03/12	12/03/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		110 %	75-12	25	EL20305	12/03/12	12/03/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		90.8 %	75-12	25	EL20305	12/03/12	12/03/12	EPA 8021B	
General Chemistry Parameters by EP	'A / Standard Method	ls							
Chloride	197	1.09	mg/kg dry	1	EL20306	12/03/12	12/03/12	EPA 300.0	
% Moisture	8.0	0.1	%	1	EL20307	12/03/12	12/03/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80	)15M							
C6-C12	ND	27.2	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
>C12-C28	1250	27.2	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
>C28-C35	383	27.2	mg/kg dry	1	EL20304	12/03/12	12/03/12	8015M	
Surrogate: 1-Chlorooctane		80.3 %	70-1.	30	EL20304	12/03/12	12/03/12	8015M	
Surrogate: o-Terphenyl		87.4 %	70-1.	30	EL20304	12/03/12	12/03/12	8015M	
Total Hydrocarbon nC6-nC35	1630	25.0	mg/kg dry	1	[CALC]	12/03/12	12/03/12	8015M	

Nova Safety & Environment

Project: SUG Historical 12 in. Crossover 1RP-1538

2057 Commerce Midland TX, 79703 Project Number: 1RP-1538 Project Manager: Camille Bryant Fax: (432) 520-7701

### Organics by GC - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Blank (EL20305-BLK1)				Prepared & Anal	yzed: 12/03/12				
Benzene	ND	0.00100	mg/kg wet						
Toluene	ND	0.00200	"						
Ethylbenzene	ND	0.00100	"						
Xylene (p/m)	ND	0.00200	"						
Xylene (o)	ND	0.00100	"						
Surrogate: 1,4-Difluorobenzene	64.4		ug/kg	60.0	107	75-125			
Surrogate: 4-Bromofluorobenzene	61.4		"	60.0	102	75-125			
LCS (EL20305-BS1)				Prepared & Anal	yzed: 12/03/12				
Benzene	0.0819	0.00100	mg/kg wet	0.100	81.9	80-120			
Toluene	0.100	0.00200	"	0.100	100	80-120			
Ethylbenzene	0.103	0.00100	"	0.100	103	80-120			
Xylene (p/m)	0.214	0.00200	"	0.200	107	80-120			
Xylene (o)	0.102	0.00100	"	0.100	102	80-120			
Surrogate: 1,4-Difluorobenzene	66.9		ug/kg	60.0	112	75-125			
Surrogate: 4-Bromofluorobenzene	70.2		"	60.0	117	75-125			
LCS Dup (EL20305-BSD1)				Prepared & Anal	yzed: 12/03/12				
Benzene	0.0820	0.00100	mg/kg wet	0.100	82.0	80-120	0.0732	20	
Toluene	0.103	0.00200	"	0.100	103	80-120	2.48	20	
Ethylbenzene	0.105	0.00100	"	0.100	105	80-120	1.98	20	
Xylene (p/m)	0.218	0.00200	"	0.200	109	80-120	2.03	20	
Xylene (o)	0.104	0.00100	"	0.100	104	80-120	1.88	20	
Surrogate: 1,4-Difluorobenzene	67.2		ug/kg	60.0	112	75-125			

60.0

70.3

 ${\it Surrogate: 4-Bromofluor obenzene}$ 

117

75-125

Nova Safety & Environment Project: SUG Historical 12 in. Crossover 1RP-1538

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EL20306 - *** DEFAULT PREP ***										
Blank (EL20306-BLK1)				Prepared:	12/03/12 A	Analyzed: 12	2/04/12			
Chloride	ND	1.00	mg/kg wet							
LCS (EL20306-BS1)				Prepared:	12/03/12 A	Analyzed: 12	2/04/12			
Chloride	11.3		mg/kg Wet	10.0		113	80-120			
LCS Dup (EL20306-BSD1)				Prepared:	12/03/12 A	Analyzed: 12	2/04/12			
Chloride	11.7		mg/kg Wet	10.0		117	80-120	3.41	20	
Duplicate (EL20306-DUP1)	Sou	rce: 2L03001	-01	Prepared:	12/03/12 A	Analyzed: 12	2/04/12			
Chloride	189	1.04	mg/kg dry		189			0.121	20	
Matrix Spike (EL20306-MS1)	Sou	rce: 2L03001	-01	Prepared:	12/03/12 A	Analyzed: 12	2/04/12			
Chloride	223	1.04	mg/kg dry	130	189	26.4	80-120			QM-05
Matrix Spike (EL20306-MS2)	Sou	rce: 2L03002	2-03	Prepared:	12/03/12 A	Analyzed: 12	2/04/12			
Chloride	763	1.01	mg/kg dry	126	135	498	80-120			QM-05
Batch EL20307 - *** DEFAULT PREP ***										
Blank (EL20307-BLK1)				Prepared &	& Analyzed	1: 12/03/12				
% Moisture	ND	0.1	%							
Duplicate (EL20307-DUP1)	Sou	rce: 2L03001	-01	Prepared &	& Analyzed	1: 12/03/12				
% Moisture	5.0	0.1	%		4.0			22.2	20	R2

Fax: (432) 520-7701

Nova Safety & Environment

Midland TX, 79703

Project: SUG Historical 12 in. Crossover 1RP-1538

2057 Commerce Project Number: 1RP-1538

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### Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab

Project Manager: Camille Bryant

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EL20304 - 8015M										
Blank (EL20304-BLK1)				Prepared &	Analyzed:	12/03/12				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	88.7		"	100		88.7	70-130			
Surrogate: o-Terphenyl	48.0		"	50.0		96.1	70-130			
LCS (EL20304-BS1)				Prepared &	Analyzed:	12/03/12				
C6-C12	787	25.0	mg/kg wet	1000		78.7	75-125			
>C12-C28	781	25.0	"	1000		78.1	75-125			
>C28-C35	ND	25.0	"	0.00			75-125			
Surrogate: 1-Chlorooctane	91.2		"	100		91.2	70-130			
Surrogate: o-Terphenyl	40.1		"	50.0		80.2	70-130			
LCS Dup (EL20304-BSD1)				Prepared &	Analyzed:	12/03/12				
C6-C12	845	25.0	mg/kg wet	1000		84.5	75-125	7.09	20	
>C12-C28	778	25.0	"	1000		77.8	75-125	0.364	20	
>C28-C35	ND	25.0	"	0.00			75-125		20	
Surrogate: 1-Chlorooctane	107		"	100		107	70-130			
Surrogate: o-Terphenyl	48.4		"	50.0		96.9	70-130			
Matrix Spike (EL20304-MS1)	Sou	rce: 2L03002	2-03	Prepared &	Analyzed:	12/03/12				
C6-C12	962	25.3	mg/kg dry	1010	ND	95.2	75-125			
>C12-C28	889	25.3	"	1010	ND	88.0	75-125			
>C28-C35	ND	25.3	"	0.00	ND		75-125			
Surrogate: 1-Chlorooctane	83.2		"	101		82.4	70-130			
Surrogate: o-Terphenyl	38.6		"	50.5		76.5	70-130			
Matrix Spike Dup (EL20304-MSD1)	Sou	rce: 2L03002	2-03	Prepared &	Analyzed:	12/03/12				
C6-C12	1010	25.3	mg/kg dry	1010	ND	100	75-125	4.85	20	
>C12-C28	863	25.3	"	1010	ND	85.5	75-125	2.95	20	
>C28-C35	ND	25.3	"	0.00	ND		75-125		20	
Surrogate: 1-Chlorooctane	87.8		"	101		87.0	70-130			
Surrogate: o-Terphenyl	41.2		"	50.5		81.6	70-130			

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### **Notes and Definitions**

R2 The RPD exceeded the acceptance limit.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were

within acceptance limits showing that the laboratory is in control and the data is acceptable.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

	Drew	Durion			
Report Approved By:			Date:	12/10/2012	

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

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# PERMIAN BASIN ENVIRONMENTAL LAB, LP 10014 SCR 1213 Midland, TX 79706



# Analytical Report

### **Prepared for:**

Camille Bryant

Nova Safety & Environment

2057 Commerce

Midland, TX 79703

Project: SUG Historical 12 in. Crossover 1RP-1538

Project Number: 1RP-1538 Location: Lea County, New Mexico

Lab Order Number: 2L04004



NELAP/TCEQ # T104704156-12-1

Report Date: 12/07/12

Nova Safety & Environment Project:

2057 Commerce

Midland TX, 79703

Project: SUG Historical 12 in. Crossover 1RP-1538

Project Number: 1RP-1538

### ANALYTICAL REPORT FOR SAMPLES

Project Manager: Camille Bryant

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SP-12	2L04004-01	Soil	12/03/12 14:00	12-04-2012 13:15
SP-2	2L04004-02	Soil	12/03/12 14:05	12-04-2012 13:15
SP-3	2L04004-03	Soil	12/03/12 14:10	12-04-2012 13:15
SP-4	2L04004-04	Soil	12/03/12 14:15	12-04-2012 13:15
SP-5	2L04004-05	Soil	12/03/12 14:20	12-04-2012 13:15
SP-6	2L04004-06	Soil	12/03/12 14:25	12-04-2012 13:15
SP-7	2L04004-07	Soil	12/03/12 14:30	12-04-2012 13:15
SP-8	2L04004-08	Soil	12/03/12 14:35	12-04-2012 13:15
SP-9	2L04004-09	Soil	12/03/12 14:40	12-04-2012 13:15
SP-10	2L04004-10	Soil	12/03/12 14:45	12-04-2012 13:15
SP-11	2L04004-11	Soil	12/03/12 14:50	12-04-2012 13:15
Top Soil	2L04004-12	Soil	12/03/12 14:55	12-04-2012 13:15

Fax: (432) 520-7701

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

SP-12 2L04004-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environn	nental Lal	o				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		110 %	75-1	25	EL20603	12/05/12	12/05/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		113 %	75-1	25	EL20603	12/05/12	12/05/12	EPA 8021B	
<b>General Chemistry Parameters by El</b>	PA / Standard Method	s							
Chloride	154	1.03	mg/kg dry	1	EL20701	12/06/12	12/07/12	EPA 300.0	
% Moisture	3.0	0.1	%	1	EL20501	12/04/12	12/05/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by TNRCC Method	1 1005							
C6-C12	ND	25.8	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C12-C28	ND	25.8	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C28-C35	ND	25.8	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
Surrogate: 1-Chlorooctane		59.8 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	S-04
Surrogate: o-Terphenyl		93.6 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/06/12	12/06/12	[CALC]	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

SP-2 2L04004-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environn	nental La	b				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		113 %	75-1	25	EL20603	12/05/12	12/05/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		103 %	75-1	25	EL20603	12/05/12	12/05/12	EPA 8021B	
General Chemistry Parameters by El	PA / Standard Method	s							
Chloride	361	2.55	mg/kg dry	2.5	EL20701	12/06/12	12/07/12	EPA 300.0	
% Moisture	2.0	0.1	%	1	EL20501	12/04/12	12/05/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by TNRCC Method	1 1005							
C6-C12	ND	25.5	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C12-C28	ND	25.5	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C28-C35	ND	25.5	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
Surrogate: 1-Chlorooctane		58.7 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	S-04
Surrogate: o-Terphenyl		95.9 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/06/12	12/06/12	[CALC]	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### SP-3 2L04004-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environn	nental Lal	0				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		112 %	75-1	25	EL20603	12/05/12	12/05/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		109 %	75-1	25	EL20603	12/05/12	12/05/12	EPA 8021B	
General Chemistry Parameters by El	PA / Standard Method	S							
Chloride	356	2.58	mg/kg dry	2.5	EL20701	12/06/12	12/07/12	EPA 300.0	
% Moisture	3.0	0.1	%	1	EL20501	12/04/12	12/05/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by TNRCC Method	1 1005							
C6-C12	ND	25.8	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C12-C28	ND	25.8	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C28-C35	ND	25.8	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
Surrogate: 1-Chlorooctane		58.7 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	S-04
Surrogate: o-Terphenyl		76.5 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/06/12	12/06/12	[CALC]	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### SP-4 2L04004-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environn	nental Lal	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		111 %	75-1	25	EL20603	12/05/12	12/05/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-1	25	EL20603	12/05/12	12/05/12	EPA 8021B	
General Chemistry Parameters by El	PA / Standard Method	s							
Chloride	309	2.60	mg/kg dry	2.5	EL20701	12/06/12	12/07/12	EPA 300.0	
% Moisture	4.0	0.1	%	1	EL20501	12/04/12	12/05/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by TNRCC Method	d 1005							
C6-C12	ND	26.0	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C12-C28	ND	26.0	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C28-C35	ND	26.0	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
Surrogate: 1-Chlorooctane		62.5 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	S-04
Surrogate: o-Terphenyl		82.6 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/06/12	12/06/12	[CALC]	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### SP-5 2L04004-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environn	nental Lal	0				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		114 %	75-1	25	EL20603	12/05/12	12/05/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		87.0 %	75-1	25	EL20603	12/05/12	12/05/12	EPA 8021B	
General Chemistry Parameters by El	PA / Standard Method	s							
Chloride	243	1.02	mg/kg dry	1	EL20701	12/06/12	12/07/12	EPA 300.0	
% Moisture	2.0	0.1	%	1	EL20501	12/04/12	12/05/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by TNRCC Metho	d 1005							
C6-C12	ND	25.5	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C12-C28	ND	25.5	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C28-C35	ND	25.5	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
Surrogate: 1-Chlorooctane		60.2 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	S-04
Surrogate: o-Terphenyl		75.7 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/06/12	12/06/12	[CALC]	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### SP-6 2L04004-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environn	nental Lal	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		110 %	75-1	25	EL20603	12/05/12	12/05/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		105 %	75-1	25	EL20603	12/05/12	12/05/12	EPA 8021B	
General Chemistry Parameters by El	PA / Standard Method	s							
Chloride	220	1.01	mg/kg dry	1	EL20701	12/06/12	12/07/12	EPA 300.0	
% Moisture	1.0	0.1	%	1	EL20501	12/04/12	12/05/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by TNRCC Method	1 1005							
C6-C12	ND	25.3	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C12-C28	ND	25.3	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C28-C35	ND	25.3	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
Surrogate: 1-Chlorooctane		125 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	
Surrogate: o-Terphenyl		159 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	S-04
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/06/12	12/06/12	[CALC]	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### SP-7 2L04004-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	P	ermian Basi	n Environn	nental Lal	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		112 %	75-1	25	EL20603	12/05/12	12/05/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		98.4 %	75-1	25	EL20603	12/05/12	12/05/12	EPA 8021B	
<b>General Chemistry Parameters by EPA / Sta</b>	ndard Metho	ds							
Chloride	339	2.53	mg/kg dry	2.5	EL20701	12/06/12	12/07/12	EPA 300.0	
% Moisture	1.0	0.1	%	1	EL20501	12/04/12	12/05/12	% calculation	
Total Petroleum Hydrocarbons C6-C35 by T	NRCC Meth	od 1005							
C6-C12	ND	25.3	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C12-C28	ND	25.3	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C28-C35	ND	25.3	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
Surrogate: 1-Chlorooctane		62.0 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	S-04
Surrogate: o-Terphenyl		80.3 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/06/12	12/06/12	[CALC]	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### SP-8 2L04004-08 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environn	nental Lal	b				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/05/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		110 %	75-1	25	EL20603	12/05/12	12/05/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		109 %	75-1	25	EL20603	12/05/12	12/05/12	EPA 8021B	
General Chemistry Parameters by EI	PA / Standard Method	ls							
Chloride	383	2.53	mg/kg dry	2.5	EL20701	12/06/12	12/07/12	EPA 300.0	
% Moisture	1.0	0.1	%	1	EL20501	12/04/12	12/05/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by TNRCC Metho	d 1005							
C6-C12	ND	25.3	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C12-C28	ND	25.3	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C28-C35	ND	25.3	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
Surrogate: 1-Chlorooctane		56.0 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	S-04
Surrogate: o-Terphenyl		71.0 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/06/12	12/06/12	[CALC]	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### SP-9 2L04004-09 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environn	nental Lal	o				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/06/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/06/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/06/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/06/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/06/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		113 %	75-1	25	EL20603	12/05/12	12/06/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		76.7 %	75-1	25	EL20603	12/05/12	12/06/12	EPA 8021B	
General Chemistry Parameters by El	PA / Standard Method	s							
Chloride	194	1.03	mg/kg dry	1	EL20701	12/06/12	12/07/12	EPA 300.0	
% Moisture	3.0	0.1	%	1	EL20501	12/04/12	12/05/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by TNRCC Method	d 1005							
C6-C12	ND	25.8	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C12-C28	ND	25.8	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C28-C35	ND	25.8	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
Surrogate: 1-Chlorooctane		101 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	
Surrogate: o-Terphenyl		133 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	S-04
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/06/12	12/06/12	[CALC]	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

# SP-10 2L04004-10 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environn	nental Lal	0				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/06/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/06/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/06/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/06/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/06/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		110 %	75-1	25	EL20603	12/05/12	12/06/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		107 %	75-1	25	EL20603	12/05/12	12/06/12	EPA 8021B	
General Chemistry Parameters by El	PA / Standard Method	S							
Chloride	233	1.02	mg/kg dry	1	EL20701	12/06/12	12/07/12	EPA 300.0	
% Moisture	2.0	0.1	%	1	EL20501	12/04/12	12/05/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by TNRCC Method	1 1005							
C6-C12	ND	25.5	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C12-C28	ND	25.5	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C28-C35	ND	25.5	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
Surrogate: 1-Chlorooctane		63.5 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	S-04
Surrogate: o-Terphenyl		81.9 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/06/12	12/06/12	[CALC]	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

# SP-11 2L04004-11 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Permian Basi	n Environn	nental Lal	b				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/06/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/06/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/06/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20603	12/05/12	12/06/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20603	12/05/12	12/06/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		112 %	75-1	25	EL20603	12/05/12	12/06/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		97.8 %	75-1	25	EL20603	12/05/12	12/06/12	EPA 8021B	
<b>General Chemistry Parameters by EPA / Stan</b>	dard Metl	ıods							
Chloride	394	2.55	mg/kg dry	2.5	EL20701	12/06/12	12/07/12	EPA 300.0	
% Moisture	2.0	0.1	%	1	EL20501	12/04/12	12/05/12	% calculation	
<b>Total Petroleum Hydrocarbons C6-C35 by TN</b>	RCC Met	hod 1005							
C6-C12	ND	25.5	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C12-C28	ND	25.5	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C28-C35	ND	25.5	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
Surrogate: 1-Chlorooctane		93.8 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	
Surrogate: o-Terphenyl		126 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/06/12	12/06/12	[CALC]	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

# Top Soil 2L04004-12 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environn	nental Lal	b				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL20702	12/06/12	12/06/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL20702	12/06/12	12/06/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL20702	12/06/12	12/06/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL20702	12/06/12	12/06/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL20702	12/06/12	12/06/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		107 %	75-1	25	EL20702	12/06/12	12/06/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		111 %	75-1	25	EL20702	12/06/12	12/06/12	EPA 8021B	
General Chemistry Parameters by El	PA / Standard Method	ls							
Chloride	66.5	1.01	mg/kg dry	1	EL20701	12/06/12	12/07/12	EPA 300.0	
% Moisture	1.0	0.1	%	1	EL20501	12/04/12	12/05/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by TNRCC Metho	d 1005							
C6-C12	ND	25.3	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C12-C28	ND	25.3	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
>C28-C35	ND	25.3	mg/kg dry	1	EL20605	12/06/12	12/06/12	TX 1005	
Surrogate: 1-Chlorooctane		59.0 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	S-04
Surrogate: o-Terphenyl		77.0 %	70-1	30	EL20605	12/06/12	12/06/12	TX 1005	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/06/12	12/06/12	[CALC]	

Project: SUG Historical 12 in. Crossover 1RP-1538

Source

%REC

Spike

2057 Commerce Midland TX, 79703 Project Number: 1RP-1538 Project Manager: Camille Bryant Fax: (432) 520-7701

RPD

# Organics by GC - Quality Control Permian Basin Environmental Lab

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EL20603 - General Preparatio	on (GC)									
Blank (EL20603-BLK1)				Prepared &	k Analyzed:	12/05/12				
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	66.1		ug/kg	60.0		110	75-125			
Surrogate: 4-Bromofluorobenzene	67.8		"	60.0		113	75-125			
LCS (EL20603-BS1)				Prepared &	k Analyzed:	12/05/12				
Benzene	0.0163	0.00100	mg/kg wet	0.0150		109	80-120			
Toluene	0.0330	0.00200	"	0.0300		110	80-120			
Ethylbenzene	0.0487	0.00100	"	0.0500		97.4	80-120			
Xylene (p/m)	0.115	0.00200	"	0.110		105	80-120			
Xylene (o)	0.0613	0.00100	"	0.0600		102	80-120			
Surrogate: 1,4-Difluorobenzene	64.3		ug/kg	60.0		107	75-125			
Surrogate: 4-Bromofluorobenzene	67.2		"	60.0		112	75-125			
LCS Dup (EL20603-BSD1)				Prepared &	k Analyzed:	12/05/12				
Benzene	0.0156	0.00100	mg/kg wet	0.0150		104	80-120	4.19	20	
Toluene	0.0352	0.00200	"	0.0300		117	80-120	6.25	20	
Ethylbenzene	0.0543	0.00100	"	0.0500		109	80-120	10.9	20	
Xylene (p/m)	0.121	0.00200	"	0.110		110	80-120	5.13	20	
Xylene (o)	0.0656	0.00100	"	0.0600		109	80-120	6.87	20	

Matrix Spike (EL20603-MS1)	Sour	ce: 2L05004	<b>-01</b>	Prepared:	12/05/12 Ar	nalyzed: 12	2/06/12	
Benzene	0.00852	0.00100	mg/kg dry	0.0155	ND	55.1	80-120	MS-1
Toluene	0.0249	0.00200	"	0.0309	0.00457	65.6	80-120	MS-1
Ethylbenzene	0.0487	0.00100	"	0.0515	0.0132	69.0	80-120	MS-1
Xylene (p/m)	0.242	0.00200	"	0.113	0.233	7.52	80-120	MS-1
Xylene (o)	0.0796	0.00100	"	0.0619	0.0675	19.5	80-120	MS-1
Surrogate: 1,4-Difluorobenzene	62.2		ug/kg	60.0		104	75-125	
Surrogate: 4-Bromofluorobenzene	69.1		"	60.0		115	75-125	

ug/kg

60.0

60.0

70.3

72.4

Surrogate: 1,4-Difluorobenzene

Surrogate: 4-Bromofluorobenzene

117

121

75-125

75-125

2057 Commerce Midland TX, 79703 Project Number: 1RP-1538

Fax: (432) 520-7701

Project Manager: Camille Bryant

# **Organics by GC - Quality Control** Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
-	Result	Limit	Omo	Level	Result	/UKLC	Liiiits	Ki D	Liiiit	110103
Batch EL20603 - General Preparation (GC)										
Matrix Spike Dup (EL20603-MSD1)	Sou	rce: 2L05004	l-01	Prepared:	12/05/12 A	nalyzed: 12	/06/12			
Benzene	0.0105	0.00100	mg/kg dry	0.0155	ND	67.6	80-120	20.4	20	MS-
Toluene	0.0271	0.00200	"	0.0309	0.00457	72.8	80-120	10.4	20	MS-
Ethylbenzene	0.0537	0.00100	"	0.0515	0.0132	78.7	80-120	13.1	20	MS-
Xylene (p/m)	0.254	0.00200	"	0.113	0.233	17.9	80-120	81.5	20	MS-
Xylene (o)	0.105	0.00100	"	0.0619	0.0675	59.9	80-120	102	20	MS-
Surrogate: 1,4-Difluorobenzene	60.7		ug/kg	60.0		101	75-125			
Surrogate: 4-Bromofluorobenzene	68.9		"	60.0		115	75-125			
Batch EL20702 - General Preparation (GC)										
Blank (EL20702-BLK1)				Prepared &	& Analyzed:	12/06/12				
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	65.6		ug/kg	60.0		109	75-125			
Surrogate: 4-Bromofluorobenzene	66.1		"	60.0		110	75-125			
LCS (EL20702-BS1)				Prepared &	& Analyzed:	12/06/12				
Benzene	0.0885	0.00100	mg/kg wet	0.100		88.5	80-120			
Toluene	0.116	0.00200	"	0.100		116	80-120			
Ethylbenzene	0.118	0.00100	"	0.100		118	80-120			
Xylene (p/m)	0.245	0.00200	"	0.200		122	80-120			
Xylene (o)	0.112	0.00100	"	0.100		112	80-120			
Surrogate: 1,4-Difluorobenzene	66.0		ug/kg	60.0		110	75-125			
Surrogate: 4-Bromofluorobenzene	72.5		"	60.0		121	75-125			

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

Fax: (432) 520-7701

# Organics by GC - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

# **Batch EL20702 - General Preparation (GC)**

LCS Dup (EL20702-BSD1)				Prepared & Ana	lyzed: 12/06/12			
Benzene	0.0821	0.00100 r	mg/kg wet	0.100	82.1	80-120	7.59	20
Toluene	0.107	0.00200	"	0.100	107	80-120	8.47	20
Ethylbenzene	0.107	0.00100	"	0.100	107	80-120	9.51	20
Xylene (p/m)	0.223	0.00200	"	0.200	111	80-120	9.40	20
Xylene (o)	0.104	0.00100	"	0.100	104	80-120	7.67	20
Surrogate: 1,4-Difluorobenzene	64.8		ug/kg	60.0	108	75-125		
Surrogate: 4-Bromofluorobenzene	69.5		"	60.0	116	75-125		

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

Fax: (432) 520-7701

# General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EL20501 - *** DEFAULT PREP ***										
Blank (EL20501-BLK1)				Prepared:	12/04/12	Analyzed: 1	2/05/12			
% Moisture	ND	0.1	%							
Duplicate (EL20501-DUP1)	Sou	rce: 2L04001-	01	Prepared:	12/04/12	Analyzed: 1	2/05/12			
% Moisture	19.0	0.1	%		18.0			5.41	20	
Duplicate (EL20501-DUP2)	Sou	rce: 2L04004-	11	Prepared:	12/04/12	Analyzed: 1	2/05/12			
% Moisture	1.0	0.1	%		2.0			66.7	20	
Batch EL20701 - *** DEFAULT PREP ***										
Blank (EL20701-BLK1)				Prepared:	12/06/12	Analyzed: 1	2/07/12			
Chloride	ND	1.00	mg/kg wet							
LCS (EL20701-BS1)				Prepared:	12/06/12	Analyzed: 1	2/07/12			
Chloride	9.51		mg/kg Wet	10.0		95.1	80-120			
LCS Dup (EL20701-BSD1)				Prepared:	12/06/12	Analyzed: 1	2/07/12			
Chloride	9.58		mg/kg Wet	10.0		95.8	80-120	0.702	20	
Duplicate (EL20701-DUP1)	Sou	rce: 2L04001-	01	Prepared:	12/06/12	Analyzed: 1	2/07/12			
Chloride	83.2	1.22	mg/kg dry	•	83.2	•		0.0147	20	
Matrix Spike (EL20701-MS1)	Sou	rce: 2L04001-	-01	Prepared:	12/06/12	Analyzed: 1	2/07/12			
Chloride	187	1.22	mg/kg dry	122	83.2	84.8	80-120			
Matrix Spike (EL20701-MS2)	Sou	rce: 2L04004-	04	Prepared:	12/06/12	Analyzed: 1	2/07/12			
Chloride	571	2.60	mg/kg dry	260	309	100	80-120			

Project: SUG Historical 12 in. Crossover 1RP-1538

Fax: (432) 520-7701

2057 Commerce Midland TX, 79703

Project Number: 1RP-1538 Project Manager: Camille Bryant

# Total Petroleum Hydrocarbons C6-C35 by TNRCC Method 1005 - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EL20605 - TX 1005										
Blank (EL20605-BLK1)				Prepared &	Analyzed:	12/06/12				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	71.4		"	100		71.4	70-130			
Surrogate: o-Terphenyl	44.7		"	50.0		89.3	70-130			
LCS (EL20605-BS1)				Prepared &	Analyzed:	12/06/12				
C6-C12	761	25.0	mg/kg wet	1000		76.1	75-125			
>C12-C28	774	25.0	"	1000		77.4	75-125			
>C28-C35	ND	25.0	"	0.00			75-125			
Surrogate: 1-Chlorooctane	84.9		"	100		84.9	70-130			
Surrogate: o-Terphenyl	46.0		"	50.0		91.9	70-130			
LCS Dup (EL20605-BSD1)				Prepared &	Analyzed:	12/06/12				
C6-C12	778	25.0	mg/kg wet	1000		77.8	75-125	2.33	20	
>C12-C28	790	25.0	"	1000		79.0	75-125	2.12	20	
>C28-C35	ND	25.0	"	0.00			75-125		20	
Surrogate: 1-Chlorooctane	78.5		"	100		78.5	70-130			
Surrogate: o-Terphenyl	41.9		"	50.0		83.8	70-130			
Matrix Spike (EL20605-MS1)	Sou	rce: 2L05004	-01	Prepared &	Analyzed:	12/06/12				
C6-C12	705	25.8	mg/kg dry	515	123	113	75-125			
>C12-C28	771	25.8	"	515	219	107	75-125			
>C28-C35	ND	25.8	"	0.00	ND		75-125			
Surrogate: 1-Chlorooctane	73.7		"	103		71.5	70-130			
Surrogate: o-Terphenyl	42.2		"	51.5		81.9	70-130			
Matrix Spike Dup (EL20605-MSD1)	Sou	rce: 2L05004	-01	Prepared &	Analyzed:	12/06/12				
C6-C12	770	25.8	mg/kg dry	515	123	125	75-125	10.5	20	
>C12-C28	762	25.8	"	515	219	105	75-125	1.54	20	
>C28-C35	ND	25.8	"	0.00	ND		75-125		20	
Surrogate: 1-Chlorooctane	69.9		"	103		67.8	70-130			S-
Surrogate: o-Terphenyl	41.2		"	51.5		80.0	70-130			

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

## **Notes and Definitions**

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect. MS-1 Recovery of sample outside of historical limits due to matrix interference. Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above the acceptance limits. Analyte not T. detected, data not impacted. DET Analyte DETECTED ND Analyte NOT DETECTED at or above the reporting limit NR dry Sample results reported on a dry weight basis RPD Relative Percent Difference Laboratory Control Spike LCS MS Matrix Spike Duplicate Dup Sun Burron Report Approved By:

Brent Barron, Laboratory Director/Technical Director

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If you have received this material in error, please notify us immediately at 432-686-7235.

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# PERMIAN BASIN ENVIRONMENTAL LAB, LP 10014 SCR 1213 Midland, TX 79706



# Analytical Report

# **Prepared for:**

Camille Bryant

Nova Safety & Environment

2057 Commerce

Midland, TX 79703

Project: SUG 12 In Crossover
Project Number: [none]
Location: Lea, Co. New Mexico

Lab Order Number: 2L10001



NELAP/TCEQ # T104704156-12-1

Report Date: 12/17/12

Project: SUG 12 In Crossover

2057 Commerce

Project Number: [none]

Midland TX, 79703

Project Manager: Camille Bryant

# ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
North S-W 1A @14 ft	2L10001-01	Soil	12/07/12 13:30	12-10-2012 09:10
East S-W 1 @14 ft	2L10001-02	Soil	12/07/12 14:00	12-10-2012 09:10
West S-W 3 @14 ft	2L10001-03	Soil	12/07/12 14:20	12-10-2012 09:10

Fax: (432) 520-7701

Fax: (432) 520-7701 Nova Safety & Environment Project: SUG 12 In Crossover

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

# North S-W 1A @14 ft 2L10001-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environn	nental La	b				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL21003	12/10/12	12/10/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL21003	12/10/12	12/10/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL21003	12/10/12	12/10/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL21003	12/10/12	12/10/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL21003	12/10/12	12/10/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		108 %	75-1	25	EL21003	12/10/12	12/10/12	EPA 8021B	_
Surrogate: 4-Bromofluorobenzene		88.7 %	75-1	25	EL21003	12/10/12	12/10/12	EPA 8021B	
<b>General Chemistry Parameters by E</b>	PA / Standard Method	s							
Chloride	230	1.04	mg/kg dry	1	EL21005	12/10/12	12/10/12	EPA 300.0	
% Moisture	4.0	0.1	%	1	EL21002	12/10/12	12/10/12	% calculation	
Total Petroleum Hydrocarbons C6-C	C35 by EPA Method 80	15M							
C6-C12	ND	26.0	mg/kg dry	1	EL21004	12/10/12	12/10/12	8015M	
>C12-C28	ND	26.0	mg/kg dry	1	EL21004	12/10/12	12/10/12	8015M	
>C28-C35	ND	26.0	mg/kg dry	1	EL21004	12/10/12	12/10/12	8015M	
Surrogate: 1-Chlorooctane		62.9 %	70-1	30	EL21004	12/10/12	12/10/12	8015M	S-GC
Surrogate: o-Terphenyl		80.5 %	70-1	30	EL21004	12/10/12	12/10/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/10/12	12/10/12	8015M	

Nova Safety & Environment Project: SUG 12 In Crossover Fax: (432) 520-7701

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

East S-W 1 @14 ft 2L10001-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes						
	Pe	rmian Basi	n Environn	nental Lal	b										
Organics by GC	Inzene         ND         0.00100 mg/kg dry         1														
Benzene	ND	0.00100	mg/kg dry	1	EL21003	12/10/12	12/10/12	EPA 8021B							
Toluene	ND	0.00200	mg/kg dry	1	EL21003	12/10/12	12/10/12	EPA 8021B							
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL21003	12/10/12	12/10/12	EPA 8021B							
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL21003	12/10/12	12/10/12	EPA 8021B							
Xylene (o)	ND	0.00100	mg/kg dry	1	EL21003	12/10/12	12/10/12	EPA 8021B							
Surrogate: 1,4-Difluorobenzene		108 %	75-1	25	EL21003	12/10/12	12/10/12	EPA 8021B							
Surrogate: 4-Bromofluorobenzene		110 %	75-1	25	EL21003	12/10/12	12/10/12	EPA 8021B							
<b>General Chemistry Parameters by E</b>	PA / Standard Method	ls													
Chloride	197	1.04	mg/kg dry	1	EL21005	12/10/12	12/10/12	EPA 300.0							
% Moisture	4.0	0.1	%	1	EL21002	12/10/12	12/10/12	% calculation							
Total Petroleum Hydrocarbons C6-C	235 by EPA Method 80	15M													
C6-C12	ND	26.0	mg/kg dry	1	EL21004	12/10/12	12/10/12	8015M							
>C12-C28	ND	26.0	mg/kg dry	1	EL21004	12/10/12	12/10/12	8015M							
>C28-C35	ND	26.0	mg/kg dry	1	EL21004	12/10/12	12/10/12	8015M							
Surrogate: 1-Chlorooctane		63.1 %	70-1	30	EL21004	12/10/12	12/10/12	8015M	S-GC						
Surrogate: o-Terphenyl		78.6 %	70-1	30	EL21004	12/10/12	12/10/12	8015M							
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/10/12	12/10/12	8015M							

Nova Safety & Environment Project: SUG 12 In Crossover Fax: (432) 520-7701

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

# West S-W 3 @14 ft 2L10001-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environn	nental Lal	b				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL21003	12/10/12	12/10/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL21003	12/10/12	12/10/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL21003	12/10/12	12/10/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL21003	12/10/12	12/10/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL21003	12/10/12	12/10/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		107 %	75-1	25	EL21003	12/10/12	12/10/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		107 %	75-1	25	EL21003	12/10/12	12/10/12	EPA 8021B	
General Chemistry Parameters by E	PA / Standard Method	ls							
Chloride	284	1.05	mg/kg dry	1	EL21005	12/10/12	12/10/12	EPA 300.0	
% Moisture	5.0	0.1	%	1	EL21002	12/10/12	12/10/12	% calculation	
Total Petroleum Hydrocarbons C6-C	C35 by EPA Method 80	015M							
C6-C12	ND	26.3	mg/kg dry	1	EL21004	12/10/12	12/10/12	8015M	
>C12-C28	ND	26.3	mg/kg dry	1	EL21004	12/10/12	12/10/12	8015M	
>C28-C35	ND	26.3	mg/kg dry	1	EL21004	12/10/12	12/10/12	8015M	
Surrogate: 1-Chlorooctane		64.0 %	70-1	30	EL21004	12/10/12	12/10/12	8015M	S-GC
Surrogate: o-Terphenyl		79.5 %	70-1	30	EL21004	12/10/12	12/10/12	8015M	

Fax: (432) 520-7701 Nova Safety & Environment Project: SUG 12 In Crossover

2057 Commerce Midland TX, 79703

Project Number: [none]

Project Manager: Camille Bryant

# **Organics by GC - Quality Control** Permian Basin Environmental Lab

			Reporting		Spike	Source		%REC		RPD	
1	Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Blank (EL21003-BLK1)				Prepared &	& Analyzed:	12/10/12				
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	66.4		ug/kg	60.0		111	75-125			
Surrogate: 4-Bromofluorobenzene	63.9		"	60.0		106	75-125			
LCS (EL21003-BS1)				Prepared &	& Analyzed:	12/10/12				
Benzene	0.0942	0.00100	mg/kg wet	0.100		94.2	80-120			
Toluene	0.119	0.00200	"	0.100		119	80-120			
Ethylbenzene	0.119	0.00100	"	0.100		119	80-120			
Xylene (p/m)	0.240	0.00200	"	0.200		120	80-120			
Xylene (o)	0.115	0.00100	"	0.100		115	80-120			
Surrogate: 1,4-Difluorobenzene	67.5		ug/kg	60.0		112	75-125			
Surrogate: 4-Bromofluorobenzene	69.3		"	60.0		115	75-125			
LCS Dup (EL21003-BSD1)				Prepared &	& Analyzed:	12/10/12				
Benzene	0.0912	0.00100	mg/kg wet	0.100		91.2	80-120	3.22	20	
Toluene	0.120	0.00200	"	0.100		120	80-120	0.815	20	
Ethylbenzene	0.118	0.00100	"	0.100		118	80-120	0.995	20	
Xylene (p/m)	0.238	0.00200	"	0.200		119	80-120	0.774	20	
Xylene (o)	0.114	0.00100	"	0.100		114	80-120	1.07	20	
Surrogate: 1,4-Difluorobenzene	65.2		ug/kg	60.0		109	75-125			
Surrogate: 4-Bromofluorobenzene	69.4		"	60.0		116	75-125			
Matrix Spike (EL21003-MS1)	Sou	rce: 2L10002	-01	Prepared &	& Analyzed:	12/10/12				
Benzene	0.0676	0.00100	mg/kg dry	0.101	ND	66.9	80-120			QM-05
Toluene	0.0876	0.00200	"	0.101	ND	86.8	80-120			
Ethylbenzene	0.0883	0.00100	"	0.101	0.00175	85.7	80-120			
Xylene (p/m)	0.183	0.00200	"	0.202	0.00342	89.1	80-120			
Xylene (o)	0.0850	0.00100	"	0.101	0.00172	82.5	80-120			
Surrogate: 1,4-Difluorobenzene	64.5		ug/kg	60.0		107	75-125			
Surrogate: 4-Bromofluorobenzene	72.6		"	60.0		121	75-125			

Nova Safety & Environment Project: SUG 12 In Crossover Fax: (432) 520-7701

2057 CommerceProject Number: [none]Midland TX, 79703Project Manager: Camille Bryant

# Organics by GC - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD		l
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	ı

# **Batch EL21003 - General Preparation (GC)**

Matrix Spike Dup (EL21003-MSD1)	Sour	rce: 2L10002	-01	Prepared &	& Analyzed:	12/10/12				
Benzene	0.0685	0.00100	mg/kg dry	0.101	ND	67.8	80-120	1.37	20	QM-05
Toluene	0.0882	0.00200	"	0.101	ND	87.3	80-120	0.655	20	
Ethylbenzene	0.0809	0.00100	"	0.101	0.00175	78.4	80-120	8.96	20	QM-05
Xylene (p/m)	0.160	0.00200	"	0.202	0.00342	77.3	80-120	14.1	20	QM-05
Xylene (o)	0.0784	0.00100	"	0.101	0.00172	76.0	80-120	8.23	20	QM-05
Surrogate: 1,4-Difluorobenzene	62.3		ug/kg	60.0		104	75-125			
Surrogate: 4-Bromofluorobenzene	56.4		"	60.0		93.9	75-125			

Nova Safety & Environment Project: SUG 12 In Crossover Fax: (432) 520-7701

2057 Commerce Project Number: [none]
Midland TX, 79703 Project Manager: Camille Bryant

# General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab

		Dti		C-:1	C		0/DEC		DDD	
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EL21002 - *** DEFAULT PREP ***										
Blank (EL21002-BLK1)				Prepared &	Analyzed:	12/10/12				
% Moisture	ND	0.1	%							
Duplicate (EL21002-DUP1)	Sou	rce: 2L10001	-01	Prepared &	Analyzed:	12/10/12				
% Moisture	4.0	0.1	%		4.0			0.00	20	
Batch EL21005 - *** DEFAULT PREP ***										
Blank (EL21005-BLK1)				Prepared &	Analyzed:	12/10/12				
Chloride	ND	1.00	mg/kg wet							
LCS (EL21005-BS1)				Prepared &	Analyzed:	12/10/12				
Chloride	10.2		mg/kg Wet	10.0		102	80-120			
LCS Dup (EL21005-BSD1)				Prepared &	. Analyzed:	12/10/12				
Chloride	10.2		mg/kg Wet	10.0	-	102	80-120	0.295	20	
Duplicate (EL21005-DUP1)	Sou	rce: 2L10001	-01	Prepared &	Analyzed:	12/10/12				
Chloride	230	1.04	mg/kg dry		230			0.208	20	
Matrix Spike (EL21005-MS1)	Sou	rce: 2L10001	-01	Prepared &	Analyzed:	12/10/12				
Chloride	330	1.04	mg/kg dry	91.1	230	109	80-120			

Fax: (432) 520-7701 Nova Safety & Environment Project: SUG 12 In Crossover

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

# Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab

		Reporting	** *	Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EL21004 - 8015M										
Blank (EL21004-BLK1)				Prepared &	k Analyzed:	12/10/12				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	70.7		"	100		70.7	70-130			
Surrogate: o-Terphenyl	42.9		"	50.0		85.8	70-130			
LCS (EL21004-BS1)				Prepared &	k Analyzed:	12/10/12				
C6-C12	773	25.0	mg/kg wet	1000		77.3	75-125			
>C12-C28	773	25.0	"	1000		77.3	75-125			
>C28-C35	ND	25.0	"	0.00			75-125			
Surrogate: 1-Chlorooctane	76.9		"	100		76.9	70-130			
Surrogate: o-Terphenyl	42.3		"	50.0		84.6	70-130			
LCS Dup (EL21004-BSD1)				Prepared &	k Analyzed:	12/10/12				
C6-C12	803	25.0	mg/kg wet	1000		80.3	75-125	3.82	20	
>C12-C28	803	25.0	"	1000		80.3	75-125	3.80	20	
>C28-C35	ND	25.0	"	0.00			75-125		20	
Surrogate: 1-Chlorooctane	74.5		"	100		74.5	70-130			
Surrogate: o-Terphenyl	40.1		"	50.0		80.3	70-130			
Matrix Spike (EL21004-MS1)	Sour	rce: 2L10001	-01	Prepared &	k Analyzed:	12/10/12				
C6-C12	903	26.0	mg/kg dry	1040	ND	86.7	75-125			
>C12-C28	836	26.0	"	1040	ND	80.3	75-125			
>C28-C35	ND	26.0	"	0.00	ND		75-125			
Surrogate: 1-Chlorooctane	84.4		"	104		81.0	70-130			
Surrogate: o-Terphenyl	46.2		"	52.1		88.7	70-130			
Matrix Spike Dup (EL21004-MSD1)	Sour	rce: 2L10001	-01	Prepared &	t Analyzed:	12/10/12				
C6-C12	919	26.0	mg/kg dry	1040	ND	88.3	75-125	1.76	20	
>C12-C28	868	26.0	"	1040	ND	83.3	75-125	3.70	20	
>C28-C35	ND	26.0	"	0.00	ND		75-125		20	
Surrogate: 1-Chlorooctane	86.0		"	104		82.5	70-130			
Surrogate: o-Terphenyl	47.4		"	52.1		91.0	70-130			

Nova Safety & Environment Project: SUG 12 In Crossover Fax: (432) 520-7701

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

## **Notes and Definitions**

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were

within acceptance limits showing that the laboratory is in control and the data is acceptable.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

	1 Drew	Barror		
Report Approved By:			Date:	12/17/2012

P AR MAN

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.



Relinquished by:		Relinquished by:	Relinquished		Special								- 03	-02	-0	LAB # (lab use only)	ORDE	(lab use only)									1
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# PERMIAN BASIN ENVIRONMENTAL LAB, LP 10014 SCR 1213 Midland, TX 79706



# Analytical Report

# **Prepared for:**

Camille Bryant

Nova Safety & Environment

2057 Commerce

Midland, TX 79703

Project: SUG Historical 12 in. Crossover 1RP-1538

Project Number: 1RP-1538 Location: Lea County, New Mexico

Lab Order Number: 2L14001



NELAP/TCEQ # T104704156-12-1

Report Date: 12/17/12

Project: SUG Historical 12 in. Crossover 1RP-1538

2057 Commerce Midland TX, 79703 Project Number: 1RP-1538 Project Manager: Camille Bryant

ANALYTICAL REPORT FOR SAMPLES

## AVALTICAL REPORT FOR SAMILEE

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
West Trench-2 @ 14'	2L14001-01	Soil	12/13/12 15:00	12-14-2012 08:08

Fax: (432) 520-7701

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

West Trench-2 @ 14' 2L14001-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Po	ermian Basi	n Environn	nental La	b	-			
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL21703	12/14/12	12/14/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL21703	12/14/12	12/14/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL21703	12/14/12	12/14/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL21703	12/14/12	12/14/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL21703	12/14/12	12/14/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		107 %	75-1	25	EL21703	12/14/12	12/14/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		126 %	75-1	25	EL21703	12/14/12	12/14/12	EPA 8021B	S-GC
General Chemistry Parameters by El	PA / Standard Method	ls							
Chloride	324	1.02	mg/kg dry	1	EL21704	12/17/12	12/17/12	EPA 300.0	
% Moisture	2.0	0.1	%	1	EL21701	12/14/12	12/17/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80	015M							
C6-C12	ND	25.5	mg/kg dry	1	EL21702	12/14/12	12/14/12	8015M	
>C12-C28	ND	25.5	mg/kg dry	1	EL21702	12/14/12	12/14/12	8015M	
>C28-C35	ND	25.5	mg/kg dry	1	EL21702	12/14/12	12/14/12	8015M	
Surrogate: 1-Chlorooctane		70.9 %	70-1	30	EL21702	12/14/12	12/14/12	8015M	
Surrogate: o-Terphenyl		91.6 %	70-1	30	EL21702	12/14/12	12/14/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/14/12	12/14/12	8015M	

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

Fax: (432) 520-7701

# Organics by GC - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

<b>Batch EL21703 - General Preparatio</b>	n (GC)									
Blank (EL21703-BLK1)				Prepared &	Analyzed	: 12/14/12				
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	63.5		ug/kg	60.0		106	75-125			
Surrogate: 4-Bromofluorobenzene	76.6		"	60.0		128	75-125			S-09
LCS (EL21703-BS1)				Prepared &	Analyzed	: 12/14/12				
Benzene	0.0946	0.00100	mg/kg wet	0.100		94.6	80-120			
Toluene	0.0994	0.00200	"	0.100		99.4	80-120			
Ethylbenzene	0.0974	0.00100	"	0.100		97.4	80-120			
Xylene (p/m)	0.201	0.00200	"	0.200		100	80-120			
Xylene (o)	0.0920	0.00100	"	0.100		92.0	80-120			
Surrogate: 1,4-Difluorobenzene	64.9		ug/kg	60.0		108	75-125			
Surrogate: 4-Bromofluorobenzene	63.2		"	60.0		105	75-125			
LCS Dup (EL21703-BSD1)				Prepared &	Analyzed	: 12/14/12				
Benzene	0.0962	0.00100	mg/kg wet	0.100		96.2	80-120	1.67	20	
Toluene	0.102	0.00200	"	0.100		102	80-120	2.72	20	
Ethylbenzene	0.0999	0.00100	"	0.100		99.9	80-120	2.59	20	
Xylene (p/m)	0.207	0.00200	"	0.200		103	80-120	2.90	20	
Xylene (o)	0.0949	0.00100	"	0.100		94.9	80-120	3.03	20	
Surrogate: 1,4-Difluorobenzene	65.4		ug/kg	60.0		109	75-125			
Surrogate: 4-Bromofluorobenzene	65.9		"	60.0		110	75-125			
Matrix Spike (EL21703-MS1)	Sour	rce: 2L14001	-01	Prepared &	Analyzed	: 12/14/12				
Benzene	0.0405	0.00100	mg/kg dry	0.102	ND	39.7	80-120			QM-05
Toluene	0.0533	0.00200	"	0.102	ND	52.3	80-120			QM-05
Ethylbenzene	0.0598	0.00100	"	0.102	ND	58.6	80-120			QM-05
Xylene (p/m)	0.122	0.00200	"	0.204	ND	59.7	80-120			QM-05
Xylene (o)	0.0596	0.00100	"	0.102	ND	58.4	80-120			QM-05
Surrogate: 1,4-Difluorobenzene	62.4		ug/kg	60.0		104	75-125			
Surrogate: 4-Bromofluorobenzene	69.1		"	60.0		115	75-125			

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

Fax: (432) 520-7701

# Organics by GC - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

# **Batch EL21703 - General Preparation (GC)**

Matrix Spike Dup (EL21703-MSD1)	Sou	Source: 2L14001-01			Analyzed	: 12/14/12				
Benzene	0.0351	0.00100	mg/kg dry	0.102	ND	34.4	80-120	14.2	20	QM-05
Toluene	0.0466	0.00200	"	0.102	ND	45.7	80-120	13.5	20	QM-05
Ethylbenzene	0.0534	0.00100	"	0.102	ND	52.3	80-120	11.3	20	QM-05
Xylene (p/m)	0.108	0.00200	"	0.204	ND	53.0	80-120	11.9	20	QM-05
Xylene (o)	0.0538	0.00100	"	0.102	ND	52.7	80-120	10.3	20	QM-05
Surrogate: 1,4-Difluorobenzene	62.6		ug/kg	60.0		104	75-125			
Surrogate: 4-Bromoflyorobenzene	68.8		"	60.0		115	75-125			

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

Fax: (432) 520-7701

# General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EL21701 - *** DEFAULT PREP ***										
Blank (EL21701-BLK1)				Prepared: 1	2/14/12 Aı	nalyzed: 12	/17/12			
% Moisture	ND	0.1	%							<u> </u>
Duplicate (EL21701-DUP1)	Sou	rce: 2L13001-	-01	Prepared: 1	2/14/12 Aı	nalyzed: 12	/17/12			
% Moisture	10.0	0.1	%		11.0			9.52	20	
Batch EL21704 - *** DEFAULT PREP ***										
Blank (EL21704-BLK1)				Prepared &	Analyzed:	12/17/12				
Chloride	ND	1.00	mg/kg wet							
LCS (EL21704-BS1)				Prepared &	Analyzed:	12/17/12				
Chloride	10.1		mg/kg Wet	10.0		101	80-120			
LCS Dup (EL21704-BSD1)				Prepared &	: Analyzed:	12/17/12				
Chloride	10.1		mg/kg Wet	10.0		101	80-120	0.0593	20	
Duplicate (EL21704-DUP1)	Sour	rce: 2L14001-	-01	Prepared &	: Analyzed:	12/17/12				
Chloride	325	1.02	mg/kg dry		324			0.0723	20	
Matrix Spike (EL21704-MS1)	Sour	rce: 2L14001-	-01	Prepared &	: Analyzed:	12/17/12				
Chloride	436	1.02	mg/kg dry	115	324	97.6	80-120			

Project: SUG Historical 12 in. Crossover 1RP-1538

Project Number: 1RP-1538

2057 Commerce Midland TX, 79703

Project Manager: Camille Bryant

Fax: (432) 520-7701

# Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EL21702 - 8015M										
Blank (EL21702-BLK1)				Prepared &	k Analyzed:	12/14/12				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	67.1		"	100		67.1	70-130			S-GO
Surrogate: o-Terphenyl	43.5		"	50.0		87.1	70-130			
LCS (EL21702-BS1)				Prepared &	k Analyzed:	12/14/12				
C6-C12	842	25.0	mg/kg wet	1000		84.2	75-125			
>C12-C28	824	25.0	"	1000		82.4	75-125			
>C28-C35	ND	25.0	"	0.00			75-125			
Surrogate: 1-Chlorooctane	70.8		"	100		70.8	70-130			
Surrogate: o-Terphenyl	40.2		"	50.0		80.3	70-130			
LCS Dup (EL21702-BSD1)				Prepared &	ኔ Analyzed:	12/14/12				
C6-C12	853	25.0	mg/kg wet	1000		85.3	75-125	1.38	20	
>C12-C28	823	25.0	"	1000		82.3	75-125	0.128	20	
>C28-C35	ND	25.0	"	0.00			75-125		20	
Surrogate: 1-Chlorooctane	72.0		"	100		72.0	70-130			
Surrogate: o-Terphenyl	39.9		"	50.0		79.8	70-130			
Matrix Spike (EL21702-MS1)	Sou	rce: 2L14001	-01	Prepared &	ኔ Analyzed:	12/14/12				
C6-C12	874	25.5	mg/kg dry	1020	ND	85.7	75-125			
>C12-C28	844	25.5	"	1020	ND	82.7	75-125			
>C28-C35	ND	25.5	"	0.00	ND		75-125			
Surrogate: 1-Chlorooctane	61.4		"	51.0		120	70-130			
Surrogate: o-Terphenyl	34.9		"	25.5		137	70-130			S-GC
Matrix Spike Dup (EL21702-MSD1)	Sou	rce: 2L14001	-01	Prepared &	k Analyzed:	12/14/12				
C6-C12	853	25.5	mg/kg dry	1020	ND	83.6	75-125	2.50	20	
>C12-C28	884	25.5	"	1020	ND	86.6	75-125	4.62	20	
>C28-C35	ND	25.5	"	0.00	ND		75-125		20	
Surrogate: 1-Chlorooctane	83.5		"	102		81.8	70-130			
Surrogate: o-Terphenyl	48.2		"	51.0		94.4	70-130			

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

## **Notes and Definitions**

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

S-09 Surrogate recovery limits have been exceeded.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

MS Matrix Spike

Relative Percent Difference

Laboratory Control Spike

Dup Duplicate

RPD

LCS

	Brew	Darron			
Report Approved By:			Date:	12/17/2012	

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

10014 SCR 1213 Midland, TX 79706 432-686-7235



# **CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST**

ORDER #: 2114001 Relinquished by: Special Instructions: (lab use only) Relinquished by duished by City/State/Zip: Company Address: Company Name Project Manager: Sampler Signature Telephone No: West Trench 2 @ 14' FIELD CODE Sarve. **NOVA Safety and Environmental** 12/14/28:03 Midland, Texas 79703 Date 2057 Commerce Camille Bryant 432.520.7720 **Beginning Depth** Time Ending Depth Received by: Received by: 12/13/2012 **Date Sampled** 15:00 Fax No: Time Sampled e-mail: Permian Basin Environmental Lab, LP Midland, Texas 79706 10014 S. County Road 1213 Field Filtered Total #. of Containers 432.520.7701 cbryant@novatraining.cc lce rose.slade@sug.com HNO<sub>3</sub> HCI H<sub>2</sub>SO₄ NaOH Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> None Other (Specify) Date Date DW=Drinking Water SL=Sludge Report Format: Soil GW = Groundwater S=Soil/Solid Project Name: NP≂Non-Potable Specify Other 8:03 **Project Loc:** 8015M 8015B TPH: 418.1 Project #: TPH: TX 1005 TX 1006 PO #: Custody seals on cooler(s)
Sample Hand Delivered
by Sampler/Client Rep. ? Cations (Ca, Mg, Na, K) Labels on container(s)
Custody seals on container(s) VOCs Free of Headspace? Laboratory Comments:
Sample Containers Intact? by Courler? UPS Temperature Upon Receipt: Standard Anions (CI, SO4, Alkalinity) TCLP: SAR / ESP / CEC SUG Historical 12" Crossover 1RP-1538 Phone: 432-661-4184 Metals: As Ag Ba Cd Cr Pb Hg Se ∖nalyze Volatiles Lea County New Mexico Semivolatiles °C °C Factor BTEX 8021B/5030 or BTEX 8260 TRRP RCI N.O.R.M. C 300 NPDES RUSH TAT (Pre-Schedule) 24, 48, 72 hrs Standard TAT Page 9 of 9

LAB # (lab use only)

Relia

# PERMIAN BASIN ENVIRONMENTAL LAB, LP 10014 SCR 1213 Midland, TX 79706



# Analytical Report

# **Prepared for:**

Camille Bryant

Nova Safety & Environment

2057 Commerce

Midland, TX 79703

Project: SUG Historical 12 in. Crossover 1RP-1538

Project Number: 1RP-1538 Location: Lea County, New Mexico

Lab Order Number: 2L17001



NELAP/TCEQ # T104704156-12-1

Report Date: 12/19/12

Project: SUG Historical 12 in. Crossover 1RP-1538

Project Number: 1RP-1538
Project Manager: Camille Bryant

2057 Commerce Midland TX, 79703

# ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
West Trench SW @ 14'	2L17001-01	Soil	12/14/12 11:00	12-17-2012 14:50

Fax: (432) 520-7701

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

# West Trench SW @ 14' 2L17001-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environn	nental Lal	b				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL21903	12/18/12	12/18/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL21903	12/18/12	12/18/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL21903	12/18/12	12/18/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL21903	12/18/12	12/18/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL21903	12/18/12	12/18/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		105 %	75-1	25	EL21903	12/18/12	12/18/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		130 %	75-1	25	EL21903	12/18/12	12/18/12	EPA 8021B	S-GC
General Chemistry Parameters by El	PA / Standard Method	ls							
Chloride	205	1.04	mg/kg dry	1	EL21902	12/19/12	12/19/12	EPA 300.0	
% Moisture	4.0	0.1	%	1	EL21901	12/18/12	12/19/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80	015M							
C6-C12	ND	26.0	mg/kg dry	1	EL21904	12/18/12	12/18/12	8015M	
>C12-C28	ND	26.0	mg/kg dry	1	EL21904	12/18/12	12/18/12	8015M	
>C28-C35	ND	26.0	mg/kg dry	1	EL21904	12/18/12	12/18/12	8015M	
Surrogate: 1-Chlorooctane		62.9 %	70-1	30	EL21904	12/18/12	12/18/12	8015M	S-GC
Surrogate: o-Terphenyl		89.1 %	70-1	30	EL21904	12/18/12	12/18/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/18/12	12/18/12	8015M	

Project: SUG Historical 12 in. Crossover 1RP-1538

Project Number: 1RP-1538

2057 Commerce Midland TX, 79703

Project Manager: Camille Bryant

# **Organics by GC - Quality Control** Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Blank (EL21903-BLK1)				Prepared &	Analyzed	: 12/18/12				
Benzene	ND	0.00100	mg/kg wet	1						
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	63.7		ug/kg	60.0		106	75-125			
Surrogate: 4-Bromofluorobenzene	80.3		"	60.0		134	75-125			S-GC
LCS (EL21903-BS1)				Prepared &	Analyzed	: 12/18/12				
Benzene	0.0988	0.00100	mg/kg wet	0.100		98.8	80-120			
Toluene	0.106	0.00200	"	0.100		106	80-120			
Ethylbenzene	0.106	0.00100	"	0.100		106	80-120			
Xylene (p/m)	0.222	0.00200	"	0.200		111	80-120			
Xylene (o)	0.106	0.00100	"	0.100		106	80-120			
Surrogate: 1,4-Difluorobenzene	66.7		ug/kg	60.0		111	75-125			
Surrogate: 4-Bromofluorobenzene	74.8		"	60.0		125	75-125			
LCS Dup (EL21903-BSD1)				Prepared &	Analyzed	: 12/18/12				
Benzene	0.0971	0.00100	mg/kg wet	0.100		97.1	80-120	1.72	20	
Toluene	0.108	0.00200	"	0.100		108	80-120	1.35	20	
Ethylbenzene	0.107	0.00100	"	0.100		107	80-120	0.780	20	
Xylene (p/m)	0.224	0.00200	"	0.200		112	80-120	0.866	20	
Xylene (o)	0.106	0.00100	"	0.100		106	80-120	0.755	20	
Surrogate: 1,4-Difluorobenzene	66.5		ug/kg	60.0		111	75-125			
Surrogate: 4-Bromofluorobenzene	75.8		"	60.0		126	75-125			S-GC
Matrix Spike (EL21903-MS1)	Sou	Source: 2L17001-01		Prepared &	Analyzed	: 12/18/12				
Benzene	0.0774	0.00100	mg/kg dry	0.104	ND	74.3	80-120			QM-05
Toluene	0.0828	0.00200	"	0.104	ND	79.5	80-120			QM-05
Ethylbenzene	0.0843	0.00100	"	0.104	ND	80.9	80-120			
Xylene (p/m)	0.173	0.00200	"	0.208	ND	82.9	80-120			
Xylene (o)	0.0814	0.00100	"	0.104	ND	78.1	80-120			QM-05
Surrogate: 1,4-Difluorobenzene	61.7		ug/kg	60.0		103	75-125			

Surrogate: 4-Bromofluorobenzene

122

75-125

60.0

73.0

Fax: (432) 520-7701

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

# Organics by GC - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD		
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	

Batch EL21903 - General Preparation (G	$\mathbf{C}$	)
--	--------------	---

Matrix Spike Dup (EL21903-MSD1)	Source: 2L17001-01			Prepared & Analyzed: 12/18/12						
Benzene	0.0708	0.00100	mg/kg dry	0.104	ND	68.0	80-120	8.94	20	QM-05
Toluene	0.0784	0.00200	"	0.104	ND	75.2	80-120	5.47	20	QM-05
Ethylbenzene	0.0804	0.00100	"	0.104	ND	77.2	80-120	4.68	20	QM-05
Xylene (p/m)	0.167	0.00200	"	0.208	ND	80.0	80-120	3.52	20	
Xylene (o)	0.0786	0.00100	"	0.104	ND	75.4	80-120	3.52	20	QM-05
Surrogate: 1,4-Difluorobenzene	64.8		ug/kg	60.0		108	75-125			
Surrogate: 4-Bromofluorobenzene	75.9		"	60.0		127	75-125			S-GC

Nova Safety & Environment Project: SUG Historical 12 in. Crossover 1RP-1538

2057 Commerce Project Number: 1RP-1538
Midland TX, 79703 Project Manager: Camille Bryant

Fax: (432) 520-7701

### General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EL21901 - *** DEFAULT PREP ***										
Blank (EL21901-BLK1)				Prepared: 1	12/18/12 A	nalyzed: 12	/19/12			
% Moisture	ND	0.1	%							
Duplicate (EL21901-DUP1)	Sou	rce: 2L18001	-01	Prepared: 1	12/18/12 A	nalyzed: 12	/19/12			
% Moisture	3.0	0.1	%		3.0			0.00	20	
Batch EL21902 - *** DEFAULT PREP ***										
Blank (EL21902-BLK1)				Prepared &	Analyzed:	12/19/12				
Chloride	ND	1.00	mg/kg wet							
LCS (EL21902-BS1)				Prepared &	Analyzed:	12/19/12				
Chloride	10.5		mg/kg Wet	10.0		105	80-120			
LCS Dup (EL21902-BSD1)				Prepared &	Analyzed:	12/19/12				
Chloride	10.4		mg/kg Wet	10.0		104	80-120	0.700	20	
Duplicate (EL21902-DUP1)	Sou	rce: 2L17001	-01	Prepared &	Analyzed:	12/19/12				
Chloride	205	1.04	mg/kg dry		205			0.254	20	
Matrix Spike (EL21902-MS1)	Sou	rce: 2L17001	-01	Prepared &	Analyzed:	12/19/12				
Chloride	276	1.04	mg/kg dry	65.1	205	109	80-120			

Nova Safety & Environment

Project: SUG Historical 12 in. Crossover 1RP-1538

2057 Commerce Project Number: 1RP-1538
Midland TX, 79703 Project Manager: Camille Bryant

Fax: (432) 520-7701

### Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EL21904 - 8015M										
Blank (EL21904-BLK1)				Prepared: 1	12/18/12 A	nalyzed: 12	/19/12			
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	72.7		"	100		72.7	70-130			
Surrogate: o-Terphenyl	49.4		"	50.0		98.7	70-130			
LCS (EL21904-BS1)				Prepared: 1	12/18/12 A	nalyzed: 12	/19/12			
C6-C12	782	25.0	mg/kg wet	1000		78.2	75-125			
>C12-C28	769	25.0	"	1000		76.9	75-125			
>C28-C35	ND	25.0	"	0.00			75-125			
Surrogate: 1-Chlorooctane	71.6		"	100		71.6	70-130			
Surrogate: o-Terphenyl	42.8		"	50.0		85.7	70-130			
LCS Dup (EL21904-BSD1)				Prepared &	Analyzed:	12/18/12				
C6-C12	773	25.0	mg/kg wet	1000		77.3	75-125	1.06	20	
>C12-C28	780	25.0	"	1000		78.0	75-125	1.38	20	
>C28-C35	ND	25.0	"	0.00			75-125		20	
Surrogate: 1-Chlorooctane	75.8		"	100		75.8	70-130			
Surrogate: o-Terphenyl	43.7		"	50.0		87.4	70-130			
Matrix Spike (EL21904-MS1)	Sour	ce: 2L17001	-01	Prepared &	Analyzed:	12/18/12				
C6-C12	806	26.0	mg/kg dry	1040	ND	77.3	75-125			
>C12-C28	811	26.0	"	1040	ND	77.9	75-125			
>C28-C35	ND	26.0	"	0.00	ND		75-125			
Surrogate: 1-Chlorooctane	76.7		"	104		73.6	70-130			
Surrogate: o-Terphenyl	44.8		"	52.1		86.1	70-130			
Matrix Spike Dup (EL21904-MSD1)	Sour	ce: 2L17001	-01	Prepared &	Analyzed:	12/18/12				
C6-C12	814	26.0	mg/kg dry	1040	ND	78.1	75-125	0.983	20	
>C12-C28	815	26.0	"	1040	ND	78.2	75-125	0.411	20	
>C28-C35	ND	26.0	"	0.00	ND		75-125		20	
Surrogate: 1-Chlorooctane	82.4		"	104		79.1	70-130			
Surrogate: o-Terphenyl	45.4		"	52.1		87.2	70-130			

Nova Safety & Environment Project: SUG Historical 12 in. Crossover 1RP-1538 Fax: (432) 520-7701

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### **Notes and Definitions**

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were

within acceptance limits showing that the laboratory is in control and the data is acceptable.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

	Drew	Durron			
Report Approved By:			Date:	12/19/2012	

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

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# PERMIAN BASIN ENVIRONMENTAL LAB, LP 10014 SCR 1213 Midland, TX 79706



# Analytical Report

### **Prepared for:**

Camille Bryant

Nova Safety & Environment

2057 Commerce

Midland, TX 79703

Project: SUG 12 In Crossover
Project Number: [none]
Location: Lea Co., New Mexico

Lab Order Number: 2L18002



NELAP/TCEQ # T104704156-12-1

Report Date: 12/19/12

Nova Safety & Environment

Project: SUG 12 In Crossover

2057 Commerce

Project Number: [none]

Midland TX, 79703

Project Manager: Camille Bryant

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
South Trench @ 16 ft	2L18002-01	Soil	12/17/12 10:00	12-18-2012 11:08
West Trench @ 16 ft	2L18002-02	Soil	12/17/12 11:00	12-18-2012 11:08

Fax: (432) 520-7701

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

### South Trench @ 16 ft 2L18002-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Per	mian Basin	ı Environn	nental Lab	b				
<b>General Chemistry Parameters by EP</b>	A / Standard Methods								
Chloride	113	1.03	mg/kg dry	1	EL21902	12/19/12	12/19/12	EPA 300.0	
% Moisture	3.0	0.1	%	1	EL21901	12/18/12	12/19/12	% calculation	

Fax: (432) 520-7701 Nova Safety & Environment Project: SUG 12 In Crossover

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

> West Trench @ 16 ft 2L18002-02 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

### Permian Basin Environmental Lab

**General Chemistry Parameters by EPA / Standard Methods** 

Chloride	124	1.04 mg/kg dry	1	EL21902	12/19/12	12/19/12	EPA 300.0
% Moisture	4.0	0.1 %	1	EL21901	12/18/12	12/19/12	% calculation

2057 Commerce Midland TX, 79703 Project Number: [none]

Project Manager: Camille Bryant

## General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EL21901 - *** DEFAULT PREP ***										
Blank (EL21901-BLK1)				Prepared: 1	12/18/12 A	nalyzed: 12	/19/12			
% Moisture	ND	0.1	%							
Duplicate (EL21901-DUP1)	Sou	rce: 2L18001-	-01	Prepared: 1	12/18/12 A	nalyzed: 12	/19/12			
% Moisture	3.0	0.1	%		3.0			0.00	20	
Batch EL21902 - *** DEFAULT PREP ***										
Blank (EL21902-BLK1)				Prepared &	Analyzed:	12/19/12				
Chloride	ND	1.00	mg/kg wet							
LCS (EL21902-BS1)				Prepared &	Analyzed:	12/19/12				
Chloride	10.5		mg/kg Wet	10.0		105	80-120			
LCS Dup (EL21902-BSD1)				Prepared &	Analyzed:	12/19/12				
Chloride	10.4		mg/kg Wet	10.0		104	80-120	0.700	20	
Duplicate (EL21902-DUP1)	Sou	rce: 2L17001-	-01	Prepared &	Analyzed:	12/19/12				
Chloride	205	1.04	mg/kg dry		205			0.254	20	
Matrix Spike (EL21902-MS1)	Sou	rce: 2L17001-	-01	Prepared &	Analyzed:	12/19/12				
Chloride	276	1.04	mg/kg dry	65.1	205	109	80-120			

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

### **Notes and Definitions**

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

	Drew	Darron			
Report Approved By:			Date:	12/19/2012	

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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l emperature Upon Receipt: Received:	by c	Sample Hand Delivered	Labels on container(s) Custody seals on container(s) Custody seals on container(s)	Sample Containers Intact? VOCs Free of Headspace?	Laboratory Comments:											Anions (CI, SO4, Alkalinity)	_]링,	3		Ę					
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# PERMIAN BASIN ENVIRONMENTAL LAB, LP 10014 SCR 1213 Midland, TX 79706



# Analytical Report

### **Prepared for:**

Camille Bryant

Nova Safety & Environment

2057 Commerce

Midland, TX 79703

Project: SUG 12 In Crossover
Project Number: [none]
Location: Lea Co., New Mexico

Lab Order Number: 2L18002



NELAP/TCEQ # T104704156-12-1

Report Date: 12/19/12

Nova Safety & Environment

Project: SUG 12 In Crossover

2057 Commerce

Project Number: [none]

Midland TX, 79703

Project Manager: Camille Bryant

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
South Trench @ 16 ft	2L18002-01	Soil	12/17/12 10:00	12-18-2012 11:08
West Trench @ 16 ft	2L18002-02	Soil	12/17/12 11:00	12-18-2012 11:08

Fax: (432) 520-7701

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

### South Trench @ 16 ft 2L18002-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes			
Permian Basin Environmental Lab												
<b>General Chemistry Parameters by EP</b>	A / Standard Methods											
Chloride	113	1.03	mg/kg dry	1	EL21902	12/19/12	12/19/12	EPA 300.0				
% Moisture	3.0	0.1	%	1	EL21901	12/18/12	12/19/12	% calculation				

Fax: (432) 520-7701 Nova Safety & Environment Project: SUG 12 In Crossover

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

> West Trench @ 16 ft 2L18002-02 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

### Permian Basin Environmental Lab

**General Chemistry Parameters by EPA / Standard Methods** 

Chloride	124	1.04 mg/kg dry	1	EL21902	12/19/12	12/19/12	EPA 300.0
% Moisture	4.0	0.1 %	1	EL21901	12/18/12	12/19/12	% calculation

2057 Commerce Midland TX, 79703 Project Number: [none]

Project Manager: Camille Bryant

## General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EL21901 - *** DEFAULT PREP ***										
Blank (EL21901-BLK1)				Prepared: 1	12/18/12 A	nalyzed: 12	/19/12			
% Moisture	ND	0.1	%							
Duplicate (EL21901-DUP1)	Sou	rce: 2L18001-	-01	Prepared: 1	12/18/12 A	nalyzed: 12	/19/12			
% Moisture	3.0	0.1	%		3.0			0.00	20	
Batch EL21902 - *** DEFAULT PREP ***										
Blank (EL21902-BLK1)				Prepared &	Analyzed:	12/19/12				
Chloride	ND	1.00	mg/kg wet							
LCS (EL21902-BS1)				Prepared &	Analyzed:	12/19/12				
Chloride	10.5		mg/kg Wet	10.0		105	80-120			
LCS Dup (EL21902-BSD1)				Prepared &	Analyzed:	12/19/12				
Chloride	10.4		mg/kg Wet	10.0		104	80-120	0.700	20	
Duplicate (EL21902-DUP1)	Sou	rce: 2L17001-	-01	Prepared &	Analyzed:	12/19/12				
Chloride	205	1.04	mg/kg dry		205			0.254	20	
Matrix Spike (EL21902-MS1)	Sou	rce: 2L17001-	-01	Prepared &	Analyzed:	12/19/12				
Chloride	276	1.04	mg/kg dry	65.1	205	109	80-120			

2057 Commerce

Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

**Notes and Definitions** 

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

Duplicate

MS Matrix Spike

Dup

	Drew	Durron			
Report Approved By:			Date:	12/19/2012	

0 0

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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# PERMIAN BASIN ENVIRONMENTAL LAB, LP 10014 SCR 1213 Midland, TX 79706



# Analytical Report

### **Prepared for:**

Camille Bryant

Nova Safety & Environment

2057 Commerce

Midland, TX 79703

Project: SUG 12 In Crossover
Project Number: [none]
Location: Lea County, New Mexico

Lab Order Number: 2L21003



NELAP/TCEQ # T104704156-12-1

Report Date: 12/28/12

Nova Safety & Environment

Project: SUG 12 In Crossover

2057 Commerce

Project Number: [none]

Midland TX, 79703

Project Manager: Camille Bryant

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SP-13	2L21003-01	Soil	12/20/12 15:00	12-21-2012 08:07
SP-14	2L21003-02	Soil	12/20/12 15:30	12-21-2012 08:07
SP-15	2L21003-03	Soil	12/20/12 15:40	12-21-2012 08:07
SP-16	2L21003-04	Soil	12/20/12 15:50	12-21-2012 08:07

Fax: (432) 520-7701

Fax: (432) 520-7701 Nova Safety & Environment Project: SUG 12 In Crossover

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

**SP-13** 2L21003-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Per	mian Basi	n Environn	nental Lal	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL22808	12/21/12	12/21/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL22808	12/21/12	12/21/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL22808	12/21/12	12/21/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL22808	12/21/12	12/21/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL22808	12/21/12	12/21/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		109 %	75-1	25	EL22808	12/21/12	12/21/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		123 %	75-1	25	EL22808	12/21/12	12/21/12	EPA 8021B	
<b>General Chemistry Parameters by E</b>	PA / Standard Methods	5							
Chloride	498	2.58	mg/kg dry	2.5	EL22803	12/28/12	12/28/12	EPA 300.0	
% Moisture	3.0	0.1	%	1	EL22701	12/21/12	12/26/12	% calculation	
Total Petroleum Hydrocarbons C6-C	C35 by EPA Method 801	15M							
C6-C12	ND	25.8	mg/kg dry	1	EL22703	12/21/12	12/21/12	8015M	
>C12-C28	ND	25.8	mg/kg dry	1	EL22703	12/21/12	12/21/12	8015M	
>C28-C35	ND	25.8	mg/kg dry	1	EL22703	12/21/12	12/21/12	8015M	
Surrogate: 1-Chlorooctane		65.7 %	70-1	30	EL22703	12/21/12	12/21/12	8015M	S-GC
Surrogate: o-Terphenyl		92.0 %	70-1	30	EL22703	12/21/12	12/21/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/21/12	12/21/12	8015M	

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

### SP-14 2L21003-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	ermian Basi	n Environn	nental La	b				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL22808	12/21/12	12/21/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL22808	12/21/12	12/21/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL22808	12/21/12	12/21/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL22808	12/21/12	12/21/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL22808	12/21/12	12/21/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		110 %	75-1	25	EL22808	12/21/12	12/21/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		123 %	75-1	25	EL22808	12/21/12	12/21/12	EPA 8021B	
General Chemistry Parameters by El	PA / Standard Method	ls							
Chloride	474	2.55	mg/kg dry	2.5	EL22803	12/28/12	12/28/12	EPA 300.0	
% Moisture	2.0	0.1	%	1	EL22701	12/21/12	12/26/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80	)15M							
C6-C12	ND	25.5	mg/kg dry	1	EL22703	12/21/12	12/21/12	8015M	
>C12-C28	ND	25.5	mg/kg dry	1	EL22703	12/21/12	12/21/12	8015M	
>C28-C35	ND	25.5	mg/kg dry	1	EL22703	12/21/12	12/21/12	8015M	
Surrogate: 1-Chlorooctane		64.2 %	70-1	30	EL22703	12/21/12	12/21/12	8015M	S-GC
Surrogate: o-Terphenyl		89.9 %	70-1	30	EL22703	12/21/12	12/21/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/21/12	12/21/12	8015M	

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

SP-15 2L21003-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
						p.meu			
	Pe	ermian Basir	1 Environn	ientai Lai	o				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL22808	12/21/12	12/22/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL22808	12/21/12	12/22/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL22808	12/21/12	12/22/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL22808	12/21/12	12/22/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL22808	12/21/12	12/22/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		110 %	75-1.	25	EL22808	12/21/12	12/22/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		124 %	75-1.	25	EL22808	12/21/12	12/22/12	EPA 8021B	
General Chemistry Parameters by El	A / Standard Method	ls							
Chloride	500	2.60	mg/kg dry	2.5	EL22803	12/28/12	12/28/12	EPA 300.0	
% Moisture	4.0	0.1	%	1	EL22701	12/21/12	12/26/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80	)15M	-		-	-	-	-	
C6-C12	ND	26.0	mg/kg dry	1	EL22703	12/21/12	12/21/12	8015M	
>C12-C28	ND	26.0	mg/kg dry	1	EL22703	12/21/12	12/21/12	8015M	
>C28-C35	ND	26.0	mg/kg dry	1	EL22703	12/21/12	12/21/12	8015M	
Surrogate: 1-Chlorooctane		67.5 %	70-1.	30	EL22703	12/21/12	12/21/12	8015M	S-GC
Surrogate: o-Terphenyl		91.6 %	70-1.	30	EL22703	12/21/12	12/21/12	8015M	
Γotal Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/21/12	12/21/12	8015M	

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

### SP-16 2L21003-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	ermian Basi	n Environn	nental Lal	b				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EL22808	12/21/12	12/21/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EL22808	12/21/12	12/21/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EL22808	12/21/12	12/21/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EL22808	12/21/12	12/21/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EL22808	12/21/12	12/21/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		111 %	75-1	25	EL22808	12/21/12	12/21/12	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		124 %	75-1	25	EL22808	12/21/12	12/21/12	EPA 8021B	
General Chemistry Parameters by El	PA / Standard Method	ls							
Chloride	495	2.60	mg/kg dry	2.5	EL22803	12/28/12	12/28/12	EPA 300.0	
% Moisture	4.0	0.1	%	1	EL22701	12/21/12	12/26/12	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80	)15M							
C6-C12	ND	26.0	mg/kg dry	1	EL22703	12/21/12	12/21/12	8015M	
>C12-C28	ND	26.0	mg/kg dry	1	EL22703	12/21/12	12/21/12	8015M	
>C28-C35	ND	26.0	mg/kg dry	1	EL22703	12/21/12	12/21/12	8015M	
Surrogate: 1-Chlorooctane		64.9 %	70-1	30	EL22703	12/21/12	12/21/12	8015M	S-GC
Surrogate: o-Terphenyl		88.5 %	70-1	30	EL22703	12/21/12	12/21/12	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	12/21/12	12/21/12	8015M	

Nova Safety & Environment Project: SUG 12 In Crossover

2057 Commerce Midland TX, 79703 Project Number: [none]

Project Manager: Camille Bryant

### Organics by GC - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD		l
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	ı

Blank (EL22808-BLK1)				Prepared &	Analyzed	12/21/12				
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	63.3		ug/kg	60.0		105	75-125			
Surrogate: 4-Bromofluorobenzene	70.3		"	60.0		117	75-125			
LCS (EL22808-BS1)				Prepared &	Analyzed	: 12/21/12				
Benzene	0.104	0.00100	mg/kg wet	0.100		104	80-120			
Toluene	0.113	0.00200	"	0.100		113	80-120			
Ethylbenzene	0.110	0.00100	"	0.100		110	80-120			
Xylene (p/m)	0.226	0.00200	"	0.200		113	80-120			
Xylene (o)	0.104	0.00100	"	0.100		104	80-120			
Surrogate: 1,4-Difluorobenzene	63.9		ug/kg	60.0		107	75-125			
Surrogate: 4-Bromofluorobenzene	65.9		"	60.0		110	75-125			
LCS Dup (EL22808-BSD1)				Prepared &	Analyzed	12/21/12				
Benzene	0.105	0.00100	mg/kg wet	0.100		105	80-120	1.10	20	
Toluene	0.110	0.00200	"	0.100		110	80-120	2.19	20	
Ethylbenzene	0.107	0.00100	"	0.100		107	80-120	2.19	20	
Xylene (p/m)	0.221	0.00200	"	0.200		110	80-120	2.53	20	
Xylene (o)	0.102	0.00100	"	0.100		102	80-120	1.75	20	
Surrogate: 1,4-Difluorobenzene	65.0		ug/kg	60.0		108	75-125			
Surrogate: 4-Bromofluorobenzene	64.4		"	60.0		107	75-125			
Matrix Spike (EL22808-MS1)	Sou	rce: 2L21003	3-02	Prepared &	Analyzed	12/21/12				
Benzene	0.0665	0.00100	mg/kg dry	0.102	ND	65.2	80-120	<u> </u>		QM-0:
Toluene	0.0748	0.00200	"	0.102	ND	73.3	80-120			QM-0:
Ethylbenzene	0.0733	0.00100	"	0.102	ND	71.9	80-120			QM-0:
Xylene (p/m)	0.151	0.00200	"	0.204	ND	73.8	80-120			QM-0:
Xylene (o)	0.0699	0.00100	"	0.102	ND	68.5	80-120			QM-0
Surrogate: 1,4-Difluorobenzene	66.0		ug/kg	60.0		110	75-125			
Surrogate: 4-Bromofluorobenzene	73.4		"	60.0		122	75-125			

Fax: (432) 520-7701

2057 Commerce Midland TX, 79703 Project: SUG 12 in Crossover
Project Number: [none]

Project Manager: Camille Bryant

### Organics by GC - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch EL22808 - General Preparation (	$\mathbf{GC}$	)
---------------------------------------	---------------	---

Matrix Spike Dup (EL22808-MSD1)	Sour	rce: 2L21003	3-02	Prepared &	Analyzed:	12/21/12				
Benzene	0.0802	0.00100	mg/kg dry	0.102	ND	78.6	80-120	18.7	20	QM-05
Toluene	0.0914	0.00200	"	0.102	ND	89.6	80-120	20.1	20	QM-05
Ethylbenzene	0.0886	0.00100	"	0.102	ND	86.8	80-120	18.8	20	
Xylene (p/m)	0.182	0.00200	"	0.204	ND	89.2	80-120	18.9	20	
Xylene (o)	0.0837	0.00100	"	0.102	ND	82.0	80-120	17.9	20	
Surrogate: 1,4-Difluorobenzene	65.7		ug/kg	60.0		109	75-125			
Surrogate: 4-Bromofluorobenzene	72.0		"	60.0		120	75-125			

2057 Commerce Project Number: [none]
Midland TX, 79703 Project Manager: Camille Bryant

General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source	•	%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EL22701 - *** DEFAULT PREP ***										
Blank (EL22701-BLK1)				Prepared: 1	2/21/12 Aı	nalyzed: 12	/26/12			
% Moisture	ND	0.1	%							
Duplicate (EL22701-DUP1)	Sour	ce: 2L21002	-01	Prepared: 1	2/21/12 Aı	nalyzed: 12	/26/12			
% Moisture	8.0	0.1	%		8.0			0.00	20	
Batch EL22803 - *** DEFAULT PREP ***										
Blank (EL22803-BLK1)				Prepared &	Analyzed:	12/28/12				
Chloride	ND	1.00	mg/kg wet							
LCS (EL22803-BS1)				Prepared &	Analyzed:	12/28/12				
Chloride	10.5		mg/kg Wet	10.0		105	80-120			
LCS Dup (EL22803-BSD1)				Prepared &	: Analyzed:	12/28/12				
Chloride	10.3		mg/kg Wet	10.0		103	80-120	2.51	20	
Duplicate (EL22803-DUP1)	Sour	ce: 2L21002	-01	Prepared &	: Analyzed:	12/28/12				
Chloride	100	1.09	mg/kg dry		100			0.0217	20	
Matrix Spike (EL22803-MS1)	Sour	ce: 2L21002	-01	Prepared &	: Analyzed:	12/28/12				
Chloride	185	1.09	mg/kg dry	95.1	100	88.9	80-120			
Matrix Spike (EL22803-MS2)	Sour	ce: 2L21003	-03	Prepared &	: Analyzed:	12/28/12				
Chloride	760	2.60	mg/kg dry	221	500	117	80-120			

Fax: (432) 520-7701 Nova Safety & Environment Project: SUG 12 In Crossover

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

### Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Analyte	Kesuit	Lillit	Units	Level	Kesuit	/0KEC	Lillits	KLD	Liiiit	INOTES
Batch EL22703 - 8015M										
Blank (EL22703-BLK1)				Prepared:	12/21/12 A	nalyzed: 12	/22/12			
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	70.6		"	100		70.6	70-130			
Surrogate: o-Terphenyl	47.0		"	50.0		94.1	70-130			
LCS (EL22703-BS1)				Prepared &	& Analyzed:	12/21/12				
C6-C12	752	25.0	mg/kg wet	1000		75.2	75-125			
>C12-C28	770	25.0	"	1000		77.0	75-125			
>C28-C35	ND	25.0	"	0.00			75-125			
Surrogate: 1-Chlorooctane	71.9		"	100		71.9	70-130			
Surrogate: o-Terphenyl	39.6		"	50.0		79.1	70-130			
LCS Dup (EL22703-BSD1)				Prepared:	12/21/12 A	nalyzed: 12	/22/12			
C6-C12	757	25.0	mg/kg wet	1000		75.7	75-125	0.628	20	
>C12-C28	768	25.0	"	1000		76.8	75-125	0.143	20	
>C28-C35	ND	25.0	"	0.00			75-125		20	
Surrogate: 1-Chlorooctane	76.4		"	100		76.4	70-130			
Surrogate: o-Terphenyl	40.2		"	50.0		80.3	70-130			
Matrix Spike (EL22703-MS1)	Sour	ce: 2L21003	3-02	Prepared &	& Analyzed:	12/21/12				
C6-C12	578	25.5	mg/kg dry	510	ND	113	75-125			
>C12-C28	537	25.5	"	510	ND	105	75-125			
>C28-C35	ND	25.5	"	0.00	ND		75-125			
Surrogate: 1-Chlorooctane	64.3		"	51.0		126	70-130			
Surrogate: o-Terphenyl	33.5		"	25.5		131	70-130			S-G
Matrix Spike Dup (EL22703-MSD1)	Sour	rce: 2L21003	3-02	Prepared &	& Analyzed:	12/21/12				
C6-C12	587	25.5	mg/kg dry	510	ND	115	75-125	1.55	20	
>C12-C28	551	25.5	"	510	ND	108	75-125	2.68	20	
>C28-C35	ND	25.5	"	0.00	ND		75-125		20	
Surrogate: 1-Chlorooctane	63.4		"	51.0		124	70-130			
Surrogate: o-Terphenyl	33.5		"	25.5		131	70-130			S-G

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

### **Notes and Definitions**

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were

within acceptance limits showing that the laboratory is in control and the data is acceptable.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

	Drew	Durion			
Report Approved By:			Date:	12/28/2012	

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

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## PERMIAN BASIN ENVIRONMENTAL LAB, LP 10014 SCR 1213 Midland, TX 79706



# Analytical Report

### **Prepared for:**

Camille Bryant

Nova Safety & Environment

2057 Commerce

Midland, TX 79703

Project: SUG Historical 12 in. Crossover 1RP-1538

Project Number: 1RP-1538 Location: Lea County, New Mexico

Lab Order Number: 3A23003



NELAP/TCEQ # T104704156-12-1

Report Date: 01/24/13

Nova Safety & Environment

Project: SUG Historical 12 in. Crossover 1RP-1538

2057 Commerce Midland TX, 79703 Project Number: 1RP-1538 Project Manager: Camille Bryant

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
South S/W 2A @ 16'	3A23003-01	Soil	01/21/13 11:00	01-23-2013 13:32
North S/W 2A @ 14'	3A23003-02	Soil	01/21/13 14:00	01-23-2013 13:32

Fax: (432) 520-7701

Nova Safety & Environment Project: SUG Historical 12 in. Crossover 1RP-1538 Fax: (432) 520-7701

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

South S/W 2A @ 16' 3A23003-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	ermian Basi	n Environn	nental Lal	)				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EA32407	01/24/13	01/24/13	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EA32407	01/24/13	01/24/13	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EA32407	01/24/13	01/24/13	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EA32407	01/24/13	01/24/13	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EA32407	01/24/13	01/24/13	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		115 %	75-1	25	EA32407	01/24/13	01/24/13	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		82.5 %	75-1	25	EA32407	01/24/13	01/24/13	EPA 8021B	
General Chemistry Parameters by El	PA / Standard Method	ls							
Chloride	144	1.03	mg/kg dry	1	EA32406	01/24/13	01/24/13	EPA 300.0	
% Moisture	3.0	0.1	%	1	EA32402	01/23/13	01/24/13	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80	)15M							
C6-C12	ND	25.8	mg/kg dry	1	EA32404	01/23/13	01/23/13	8015M	
>C12-C28	ND	25.8	mg/kg dry	1	EA32404	01/23/13	01/23/13	8015M	
>C28-C35	ND	25.8	mg/kg dry	1	EA32404	01/23/13	01/23/13	8015M	
Surrogate: 1-Chlorooctane		95.0 %	70-1	30	EA32404	01/23/13	01/23/13	8015M	
Surrogate: o-Terphenyl		104 %	70-1	30	EA32404	01/23/13	01/23/13	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	01/23/13	01/23/13	8015M	

Nova Safety & Environment Project: SUG Historical 12 in. Crossover 1RP-1538 Fax: (432) 520-7701

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### North S/W 2A @ 14' 3A23003-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pe	rmian Basi	n Environn	nental Lal	b				
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EA32407	01/24/13	01/24/13	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EA32407	01/24/13	01/24/13	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EA32407	01/24/13	01/24/13	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EA32407	01/24/13	01/24/13	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EA32407	01/24/13	01/24/13	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		116 %	75-1	25	EA32407	01/24/13	01/24/13	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		70.8 %	75-1	25	EA32407	01/24/13	01/24/13	EPA 8021B	S-GC
General Chemistry Parameters by El	PA / Standard Method	ls							
Chloride	245	1.03	mg/kg dry	1	EA32406	01/24/13	01/24/13	EPA 300.0	
% Moisture	3.0	0.1	%	1	EA32402	01/23/13	01/24/13	% calculation	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80	15M							
C6-C12	ND	25.8	mg/kg dry	1	EA32404	01/23/13	01/23/13	8015M	
>C12-C28	ND	25.8	mg/kg dry	1	EA32404	01/23/13	01/23/13	8015M	
>C28-C35	ND	25.8	mg/kg dry	1	EA32404	01/23/13	01/23/13	8015M	
Surrogate: 1-Chlorooctane		101 %	70-1	30	EA32404	01/23/13	01/23/13	8015M	
Surrogate: o-Terphenyl		111 %	70-1	30	EA32404	01/23/13	01/23/13	8015M	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	01/23/13	01/23/13	8015M	

Nova Safety & Environment Project: SUG Historical 12 in. Crossover 1RP-1538

2057 Commerce Project Number: 1RP-1538
Midland TX, 79703 Project Manager: Camille Bryant

Fax: (432) 520-7701

### Organics by GC - Quality Control Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EA32407 - General Preparation (GC)										

Blank (EA32407-BLK1)		Prepared & Analyzed: 01/24/13										
Benzene	ND	0.00100	mg/kg wet									
Toluene	ND	0.00200	"									
Ethylbenzene	ND	0.00100	"									
Xylene (p/m)	ND	0.00200	"									
Xylene (o)	ND	0.00100	"									
Surrogate: 1,4-Difluorobenzene	68.6		ug/kg	60.0		114	75-125					
Surrogate: 4-Bromofluorobenzene	43.0		"	60.0		71.7	75-125			S-GC		
LCS (EA32407-BS1)				Prepared &	Analyzed	01/24/13						
Benzene	0.0858	0.00100	mg/kg wet	0.100		85.8	80-120					
Toluene	0.111	0.00200	"	0.100		111	80-120					
Ethylbenzene	0.105	0.00100	"	0.100		105	80-120					
Xylene (p/m)	0.217	0.00200	"	0.200		108	80-120					
Xylene (o)	0.102	0.00100	"	0.100		102	80-120					
Surrogate: 1,4-Difluorobenzene	57.9		ug/kg	60.0		96.5	75-125					
Surrogate: 4-Bromofluorobenzene	51.2		"	60.0		85.4	75-125					
LCS Dup (EA32407-BSD1)				Prepared &	Analyzed:	01/24/13						
Benzene	0.0840	0.00100	mg/kg wet	0.100		84.0	80-120	2.07	20			
Toluene	0.111	0.00200	"	0.100		111	80-120	0.279	20			
Ethylbenzene	0.104	0.00100	"	0.100		104	80-120	1.35	20			
Xylene (p/m)	0.213	0.00200	"	0.200		107	80-120	1.66	20			
Xylene (o)	0.101	0.00100	"	0.100		101	80-120	1.78	20			
Surrogate: 1,4-Difluorobenzene	63.6		ug/kg	60.0		106	75-125					
Surrogate: 4-Bromofluorobenzene	54.5		"	60.0		90.9	75-125					
Matrix Spike (EA32407-MS1)	Sour	Source: 3A23003-01		Prepared & Analyzed: 01/24/13								
Benzene	0.0411	0.00100	mg/kg dry	0.103	ND	39.9	80-120			QM-05		
Toluene	0.0553	0.00200	"	0.103	ND	53.6	80-120			QM-05		
Ethylbenzene	0.0551	0.00100	"	0.103	ND	53.4	80-120			QM-05		
Xylene (p/m)	0.113	0.00200	"	0.206	ND	54.9	80-120			QM-05		
Xylene (o)	0.0562	0.00100	"	0.103	ND	54.5	80-120			QM-05		
Surrogate: 1,4-Difluorobenzene	68.0		ug/kg	60.0		113	75-125					
Surrogate: 4-Bromofluorobenzene	57.0		"	60.0		95.0	75-125					

Nova Safety & Environment Project: SUG Historical 12 in. Crossover 1RP-1538 Fax: (432) 520-7701

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### Organics by GC - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD		ĺ
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	ĺ

### **Batch EA32407 - General Preparation (GC)**

Matrix Spike Dup (EA32407-MSD1)	Sour	Source: 3A23003-01			Prepared & Analyzed: 01/24/13					
Benzene	0.0389	0.00100	mg/kg dry	0.103	ND	37.8	80-120	5.36	20	QM-05
Toluene	0.0515	0.00200	"	0.103	ND	50.0	80-120	7.07	20	QM-05
Ethylbenzene	0.0513	0.00100	"	0.103	ND	49.8	80-120	7.00	20	QM-05
Xylene (p/m)	0.105	0.00200	"	0.206	ND	50.9	80-120	7.60	20	QM-05
Xylene (o)	0.0528	0.00100	"	0.103	ND	51.3	80-120	6.09	20	QM-05
Surrogate: 1,4-Difluorobenzene	68.4		ug/kg	60.0		114	75-125			
Surrogate: 4-Bromofluorobenzene	54.6		"	60.0		91.0	75-125			S-GC

Nova Safety & Environment Project: SUG Historical 12 in. Crosso

Project: SUG Historical 12 in. Crossover 1RP-1538

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### General Chemistry Parameters by EPA / Standard Methods - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EA32402 - *** DEFAULT PREP ***										
Blank (EA32402-BLK1)				Prepared: 0	)1/23/13 A	nalyzed: 01	/24/13			
% Moisture	ND	0.1	%							
Duplicate (EA32402-DUP1)	Sou	rce: 3A23001	-01	Prepared: 0	)1/23/13 A	nalyzed: 01	/24/13			
% Moisture	5.2	0.1	%		4.9			5.94	20	
Batch EA32406 - *** DEFAULT PREP ***										
Blank (EA32406-BLK1)				Prepared &	Analyzed:	01/24/13				
Chloride	ND	1.00	mg/kg wet							
LCS (EA32406-BS1)				Prepared &	Analyzed:	01/24/13				
Chloride	10.3		mg/kg Wet	10.0		103	80-120			
LCS Dup (EA32406-BSD1)				Prepared &	Analyzed:	: 01/24/13				
Chloride	9.86		mg/kg Wet	10.0		98.6	80-120	4.09	20	
Duplicate (EA32406-DUP1)	Sou	rce: 3A23003	-01	Prepared &	Analyzed:	01/24/13				
Chloride	128	1.03	mg/kg dry		144			11.5	20	
Matrix Spike (EA32406-MS1)	Sou	rce: 3A23003	-01	Prepared &	Analyzed:	01/24/13				
Chloride	230	1.03	mg/kg dry	90.2	144	95.7	80-120		<u></u>	-

Fax: (432) 520-7701

Nova Safety & Environment

Project: SUG Historical 12 in. Crossover 1RP-1538

2057 Commerce Project Number: 1RP-1538
Midland TX, 79703 Project Manager: Camille Bryant

Fax: (432) 520-7701

Project Manager: Camille Bryant

### Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EA32404 - 8015M										
Blank (EA32404-BLK1)				Prepared &	Analyzed:	01/23/13				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	80.4		"	100		80.4	70-130			
Surrogate: o-Terphenyl	43.6		"	50.0		87.1	70-130			
LCS (EA32404-BS1)				Prepared &	Analyzed:	01/23/13				
C6-C12	974	25.0	mg/kg wet	1000		97.4	75-125			
>C12-C28	973	25.0	"	1000		97.3	75-125			
>C28-C35	ND	25.0	"	0.00			75-125			
Surrogate: 1-Chlorooctane	105		"	100		105	70-130			
Surrogate: o-Terphenyl	48.2		"	50.0		96.5	70-130			
LCS Dup (EA32404-BSD1)				Prepared &	Analyzed:	01/23/13				
C6-C12	989	25.0	mg/kg wet	1000		98.9	75-125	1.53	20	
>C12-C28	967	25.0	"	1000		96.7	75-125	0.574	20	
>C28-C35	ND	25.0	"	0.00			75-125		20	
Surrogate: 1-Chlorooctane	104		"	100		104	70-130			
Surrogate: o-Terphenyl	46.6		"	50.0		93.2	70-130			
Matrix Spike (EA32404-MS1)	Sou	rce: 3A23003	3-01	Prepared &	Analyzed:	01/23/13				
C6-C12	1010	25.8	mg/kg dry	1030	ND	97.6	75-125			
>C12-C28	990	25.8	"	1030	ND	96.0	75-125			
>C28-C35	ND	25.8	"	0.00	ND		75-125			
Surrogate: 1-Chlorooctane	105		"	103		102	70-130			
Surrogate: o-Terphenyl	51.5		"	51.5		100	70-130			
Matrix Spike Dup (EA32404-MSD1)	Sou	rce: 3A23003	3-01	Prepared &	Analyzed:	01/23/13				
C6-C12	1010	25.8	mg/kg dry	1030	ND	98.1	75-125	0.519	20	
>C12-C28	1010	25.8	"	1030	ND	98.0	75-125	2.04	20	
>C28-C35	ND	25.8	"	0.00	ND		75-125		20	
Surrogate: 1-Chlorooctane	113		"	103		110	70-130			
Surrogate: o-Terphenyl	55.9		"	51.5		108	70-130			

Nova Safety & Environment Project: SUG Historical 12 in. Crossover 1RP-1538 Fax: (432) 520-7701

2057 CommerceProject Number:1RP-1538Midland TX, 79703Project Manager:Camille Bryant

### **Notes and Definitions**

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were

within acceptance limits showing that the laboratory is in control and the data is acceptable.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

	Drew	Darron			
Report Approved By:			Date:	1/24/2013	

Brent Barron, Laboratory Director/Technical Director

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0 01

# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Page 10 of 10

Relinguished by: (lab use only)
ORDER #: 3 A 23003 Relinquished by: Relinquished by: Special Instructions: -02 -01 555 Telephone No: City/State/Zip: Company Address: Company Name Project Manager: Sampler Signature: South S/W 2A @ 16' North S/W 2A @ 14' FIELD CODE 1830 NOVA Safety and Environmental Midland, Texas 79703 Date 2057 Commerce Camille Bryant 432.520.77<del>20</del> 1333 **Beginning Depth** Time **Ending Depth** Received by: Received by: 1/22/2013 /21/2013 **Date Sampled** 14:00 11:00 Fax No: Time Sampled e-mail: Midland, Texas 79706 Permian Basin Environmental Lab, LP 10014 S. County Road 1213 Field Filtered Total #. of Containers 432.520.7701 cbryant@novatraining.cc × rose.slade@sug.com HNO<sub>3</sub> HCI H<sub>2</sub>SO<sub>4</sub> NaOH  $Na_2S_2O_3$ None Other (Specify) Date DW=Drinking Water SL=Sludge Soil Soil Report Format: GW = Groundwater S=Soil/Solid 爫 Project Name: NP≂Non-Potable Specify Other **Project Loc:** Time 418.1 (8015M) 8015B Project #: TX 1006 PO #: TX 1005 TPH: Sample Hand Delivered Labels on container(s)
Custody seals on container(s)
Custody seals on cooler(s) VOCs Free of Headspace? Cations (Ca, Mg, Na, K) Temperature Upon Receipt: Laboratory Comments: Sample Containers Intact? Standard Anions (CI, SO4, Alkalinity) by Sampler/Client Rep. ? by Courier? UPS DHL TCLP: SAR/ESP/CEC SUG Historical 12 Inch Crossover 1RP-1538 Phone: 432-661-4184 Metals: As Ag Ba Cd Cr Pb Hg Se nalyze For: Volatiles Lea County New Mexico Semivolatiles \_°C Factor NOJ= BTEX 8021B/5030 or BTEX 8260 × TRRP RCI N.O.R.M. 301 × NPDES zzzzzz RUSH TAT (Pre-Schedule) 24, 48, 72 hrs Standard TAT ×

LAB # (lab use only)

## PERMIAN BASIN ENVIRONMENTAL LAB, LP 10014 SCR 1213 Midland, TX 79706



## Analytical Report

### **Prepared for:**

Camille Bryant

Nova Safety & Environment

2057 Commerce

Midland, TX 79703

Project: SUG 12 In Crossover
Project Number: [none]
Location: Lea, Co. New Mexico

Lab Order Number: 3B01001



NELAP/TCEQ # T104704156-12-1

Report Date: 02/04/13

Nova Safety & Environment

Project: SUG 12 In Crossover

2057 Commerce

Project Number: [none]

Midland TX, 79703

Project Manager: Camille Bryant

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
West S/W-4 @14'	3B01001-01	Soil	01/31/13 00:00	02-01-2013 14:19

Fax: (432) 520-7701

Nova Safety & Environment Project: SUG 12 In Crossover Fax: (432) 520-7701

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

### West S/W-4 @14' 3B01001-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes						
	]	Permian Basii	n Environn	nental Lal	)										
Organics by GC	-														
Benzene	ND	0.00100	mg/kg dry	1	EB30402	02/01/13	02/01/13	EPA 8021B							
Toluene	ND	0.00200	mg/kg dry	1	EB30402	02/01/13	02/01/13	EPA 8021B							
Ethylbenzene	ND	0.00100	mg/kg dry	1	EB30402	02/01/13	02/01/13	EPA 8021B							
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EB30402	02/01/13	02/01/13	EPA 8021B							
Xylene (o)	ND	0.00100 mg/kg dry 1		EB30402	02/01/13	02/01/13	EPA 8021B								
Surrogate: 1,4-Difluorobenzene		119 %	75-125		EB30402	02/01/13	02/01/13	EPA 8021B							
Surrogate: 4-Bromofluorobenzene		79.0 %	75-1	25	EB30402	02/01/13	02/01/13	EPA 8021B							
<b>General Chemistry Parameters by EPA / Stan</b>	dard Meth	ods													
Chloride	979	2.66	mg/kg dry	2.5	EB30401	02/04/13	02/04/13	EPA 300.0							
% Moisture	6.0	0.1	%	1	EB30404	02/01/13	02/04/13	% calculation							
Total Petroleum Hydrocarbons C6-C35 by EF	PA Method	8015M													
C6-C12	ND	26.6	mg/kg dry	1	EB30403	02/01/13	02/01/13	8015M							
>C12-C28	ND	26.6	mg/kg dry	1	EB30403	02/01/13	02/01/13	8015M							
>C28-C35	ND	26.6	26.6 mg/kg dry 1		EB30403	02/01/13	02/01/13	8015M							
Surrogate: 1-Chlorooctane		105 % 70-130		30	EB30403	02/01/13	02/01/13	8015M							
Surrogate: o-Terphenyl		125 %	70-1	30	EB30403	02/01/13	02/01/13	8015M							
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	02/01/13	02/01/13	8015M							

Nova Safety & Environment Project: SUG 12 In Crossover Fax: (432) 520-7701

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

### Organics by GC - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD		l
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	ı

Blank (EB30402-BLK1)				Prepared &	Analyzed:	02/01/13				
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	70.5		ug/kg	60.0		117	75-125			
Surrogate: 4-Bromofluorobenzene	45.6		"	60.0		76.0	75-125			
LCS (EB30402-BS1)				Prepared &	Analyzed:	02/01/13				
Benzene	0.0807	0.00100	mg/kg wet	0.100		80.7	80-120			
Toluene	0.114	0.00200	"	0.100		114	80-120			
Ethylbenzene	0.116	0.00100	"	0.100		116	80-120			
Xylene (p/m)	0.239	0.00200	"	0.200		120	80-120			
Xylene (o)	0.108	0.00100	"	0.100		108	80-120			
Surrogate: 1,4-Difluorobenzene	61.8		ug/kg	60.0		103	75-125			
Surrogate: 4-Bromofluorobenzene	54.2		"	60.0		90.3	75-125			
LCS Dup (EB30402-BSD1)				Prepared &	Analyzed:	02/01/13				
Benzene	0.0807	0.00100	mg/kg wet	0.100		80.7	80-120	0.00124	20	
Toluene	0.0903	0.00200	"	0.100		90.3	80-120	23.3	20	R
Ethylbenzene	0.0910	0.00100	"	0.100		91.0	80-120	24.5	20	R
Xylene (p/m)	0.186	0.00200	"	0.200		93.0	80-120	25.0	20	R
Xylene (o)	0.0868	0.00100	"	0.100		86.8	80-120	22.0	20	R
Surrogate: 1,4-Difluorobenzene	72.0		ug/kg	60.0		120	75-125			
Surrogate: 4-Bromofluorobenzene	60.9		"	60.0		102	75-125			
Matrix Spike (EB30402-MS1)	Sou	rce: 3A31001	1-02	Prepared &	Analyzed:	02/01/13				
Benzene	0.0802	0.00100	mg/kg dry	0.104	ND	77.0	80-120			QM-05
Toluene	0.102	0.00200	"	0.104	ND	98.0	80-120			
Ethylbenzene	0.0932	0.00100	"	0.104	ND	89.4	80-120			
Xylene (p/m)	0.182	0.00200	"	0.208	ND	87.4	80-120			
Xylene (o)	0.0889	0.00100	"	0.104	ND	85.3	80-120			
Surrogate: 1,4-Difluorobenzene	69.4		ug/kg	60.0		116	75-125			
Surrogate: 4-Bromofluorobenzene	49.0		"	60.0		81.7	75-125			

Fax: (432) 520-7701 Nova Safety & Environment Project: SUG 12 In Crossover

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

### **General Chemistry Parameters by EPA / Standard Methods - Quality Control** Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EB30401 - *** DEFAULT PREP ***										
Blank (EB30401-BLK1)				Prepared &	& Analyzed:	02/04/13				
Chloride	ND	1.00	mg/kg wet							
LCS (EB30401-BS1)				Prepared &	& Analyzed:	02/04/13				
Chloride	10.2		mg/kg Wet	10.0		102	80-120			
LCS Dup (EB30401-BSD1)				Prepared &	& Analyzed:	02/04/13				
Chloride	10.2		mg/kg Wet	10.0		102	80-120	0.167	20	
Duplicate (EB30401-DUP1)	Sou	rce: 3A31001	1-01	Prepared &	& Analyzed:	02/04/13				
Chloride	4.13	1.01	mg/kg dry		4.38			5.93	20	
Batch EB30404 - *** DEFAULT PREP ***										
Blank (EB30404-BLK1)				Prepared:	02/01/13 A	nalyzed: 02	/04/13			
% Moisture	ND	0.1	%							
Duplicate (EB30404-DUP1)	Sou	rce: 3B01001	-01	Prepared:	02/01/13 A	/04/13				
% Moisture	6.0	0.1	%		6.0			0.00	20	

Fax: (432) 520-7701 Nova Safety & Environment Project: SUG 12 In Crossover

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

### Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control Permian Basin Environmental Lab

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EB30403 - 8015M										
Blank (EB30403-BLK1)				Prepared &	ኔ Analyzed:	02/01/13				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	143		"	200		71.4	70-130			
Surrogate: o-Terphenyl	80.9		"	100		80.9	70-130			
LCS (EB30403-BS1)				Prepared &	k Analyzed:	02/01/13				
C6-C12	1040	25.0	mg/kg wet	1000		104	75-125			
>C12-C28	1060	25.0	"	1000		106	75-125			
>C28-C35	ND	25.0	"	0.00			75-125			
Surrogate: 1-Chlorooctane	119		"	100		119	70-130			
Surrogate: o-Terphenyl	61.2		"	50.0		122	70-130			
LCS Dup (EB30403-BSD1)				Prepared &	ኔ Analyzed:	02/01/13				
C6-C12	1030	25.0	mg/kg wet	1000		103	75-125	1.04	20	
>C12-C28	1080	25.0	"	1000		108	75-125	1.41	20	
>C28-C35	ND	25.0	"	0.00			75-125		20	
Surrogate: 1-Chlorooctane	128		"	100		128	70-130			
Surrogate: o-Terphenyl	63.6		"	50.0		127	70-130			
Matrix Spike (EB30403-MS1)	Sour	rce: 3A31001	1-02	Prepared &	k Analyzed:	02/01/13				
C6-C12	843	26.0	mg/kg dry	1040	ND	80.9	75-125			
>C12-C28	868	26.0	"	1040	ND	83.3	75-125			
>C28-C35	ND	26.0	"	0.00	ND		75-125			
Surrogate: 1-Chlorooctane	105		"	104		101	70-130			
Surrogate: o-Terphenyl	50.0		"	52.1		96.0	70-130			
Matrix Spike Dup (EB30403-MSD1)	Sour	rce: 3A31001	1-02	Prepared &	t Analyzed:	02/01/13				
C6-C12	895	26.0	mg/kg dry	1040	ND	85.9	75-125	5.97	20	
>C12-C28	945	26.0	"	1040	ND	90.7	75-125	8.52	20	
>C28-C35	ND	26.0	"	0.00	ND		75-125		20	
Surrogate: 1-Chlorooctane	113		"	104		109	70-130			
Surrogate: o-Terphenyl	56.3		"	52.1		108	70-130			

Fax: (432) 520-7701 Nova Safety & Environment Project: SUG 12 In Crossover

2057 Commerce Project Number: [none]

Midland TX, 79703 Project Manager: Camille Bryant

### **Notes and Definitions**

R The RPD exceeded the method control limit. The individual analyte QA/QC recoveries, however, were within acceptance limits.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were

within acceptance limits showing that the laboratory is in control and the data is acceptable.

DET Analyte DETECTED

Analyte NOT DETECTED at or above the reporting limit ND

Not Reported NR

Sample results reported on a dry weight basis dry

Relative Percent Difference RPD

LCS Laboratory Control Spike Matrix Spike

Dup Duplicate

MS

	Drew	Darron			
Report Approved By:			Date:	2/4/2013	

Brent Barron, Laboratory Director/Technical Director

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# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Keling		Relinquished by		Speci										0	LAB # (lab use only)	ORD	(lab use only)							H
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ă by:	a Hasket	remitte Bryant		Special Instructions:										West		ORDER #: 360100	ly)	Sampler Signature:	Telephone No:	City/State/Zip:	Company Address:	Company Name	Project Manager:	
														West S/W-4 @ 14'	FIELD CODE	<u>8</u>		: Camille	(432)5207720	Midland/TX/79703		Nova Environmental	Camille Bryant	J.
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7		Shap												0:00	Time Sampled			e-mail:	Fax No:_					<b>-</b> 7
		he			-									_	Field Filtered  Total #, of Containers	-	15	S.I.O.					Midland, Texas	Permian Basin Environmental Lab, LP 10014 S. County Road 1213
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Z		1):					ļ				ļ	<u> </u>	-	-	None Other ( Specify)	ners	ΙΞ	30						ab,
	Date Date	3 Jake										-	<del>                                     </del>		DW=Drinking Water SL=Sludge	$\mathbf{H}$		lS.		1	1	1	1	-
<b>N</b> .		1/3	1		l.								1	S	GW = Groundwater S=Soil/Solid	Matrix			Rep					
		16													NP≂Non-Potable Specify Other	×		7	Report Format:		7		Project Name:	
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MAN.		$\Box$	 	0. 17		<u> </u>	ļ				-		-	<u> </u>	TPH: TX 1005 TX 1006  Cations (Ca, Mg, Na, K)				at	PO #	Project Loc:	Project #:	lamo	
Received:	Sample Hand Delivered by Sampler/Client Rep by Counier? UPS Temperature I had Become	abel usto	Sample Containers intact: VOCs Free of Headspace?	Laboratory Comments:											Anions (Cl, SO4, Alkalinity)	- .				;# 	; <u>;</u>	.## 		
Yed:	nple Hand Delivered by Sampler/Client Rep. ? by Counier? UPS by Counier I had Becoint	dy s	F G	rator						-			<del>                                     </del>	-	SAR/ESP/CEC	TOTAL:	TCLP:	l .	_ Standard	ŀ				
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۶/ ک	Tened TRep	onta	dspa	ents							-				Semivolatileş						Lea,		SUG	432
Received: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1 3	Labels on container(s) Custody seals on container(s) Custody seals on cooler(s)	VOCs Free of Headspace?	) 3										×	ETEX 8021B 5030 or BTEX 82	260				-	င်		121	-661
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