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JUN 26 2009



## **REMEDIATION SUMMARY AND SITE CLOSURE REQUEST**

*Fairway Resources Operating, LLC*

**South Red Lake II Unit #43**

**Eddy County, New Mexico  
UNIT "K" (NE/SW), Section 36, Township 17S, Range 27E  
Latitude 32.7877800° North, Longitude 104.2350200° West**

**2RP-188**

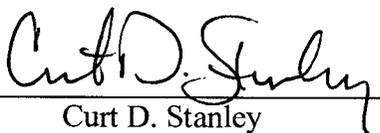
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**May 2009**



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JUN 26 2009

## INTRODUCTION AND BACKGROUND INFORMATION

Basin Environmental Consulting, LLC (Basin), on behalf of Fairway Resources Operating, LLC (Fairway), has prepared this Remediation Summary and Site Closure Request for the release site known as South Red Lake II Unit #43. The legal description of the release site is NE¼ SW¼ (Unit Letter "K"), Section 36, Township 17 South, Range 27 East, in Eddy County, New Mexico. The property is owned by the State of New Mexico (SLO). The release site GPS coordinates are 32.7877800° North and 104.2350200° West. Please reference Figure 1 for a Site Location Map and Figure 2 for a Site Map. The Release Notification and Corrective Action is included as Appendix C.

On June 16, 2008, a leak was discovered in a steel nipple at the South Red Lake II Unit #43 wellhead flowline connection. The Release Notification and Corrective Action (Form C-141) indicates twenty-five (25) barrels (BBL) of a mixture of produced water and crude oil were released as a result of the nipple failure. The C-141 indicates twenty (20) BBL of the mixture of produced water and crude oil were recovered during initial response activities using a vacuum truck. The release net loss was reported at five (5) BBL of the mixture. The area affected by the release measures approximately 20 feet in width and 270 feet in length and included portion of the well pad and the adjacent lease road.

## NMOCD SITE CLASSIFICATION

As described in Section 3A of the *Guidelines for Remediation of Leaks, Spills and Releases* (NMOCD, 1993), the following characteristics are used to determine the site soil ranking criteria, which influences the site-specific cleanup standards applicable for this site. The depth to groundwater is between 50 - 100 feet from the base of the impacted zone, resulting in ten (10) points being assigned to the site as a result of this criterion.

The water well database, maintained by the New Mexico Office of the State Engineer (NMOSE), was accessed to determine the location and type of nearby registered water wells in the area. The database indicated there are no water wells less than 1,000 feet from the release, resulting in zero (0) points being assigned to this site as a result of this criterion.

There are no surface water bodies located within 1,000 feet of the site. Based on the New Mexico Oil Conservation Division (NMOCD) ranking system zero (0) points will be assigned to the site as a result of the criterion. The Guidelines indicate the South Red Lake II Unit #43 release site has a ranking score of ten (10). Based on this score, the soil remediation levels for a site with a ranking score of ten (10) points are as follows:

- Benzene – 10 mg/Kg (ppm)
- BTEX – 50 mg/Kg (ppm)
- TPH – 1,000 mg/Kg (ppm)

The NMOCD chlorides clean up level concentrations are site specific.

## SUMMARY OF RECENT FIELD ACTIVITIES

On June 19, 2008, a backhoe was mobilized to the release site to assess the extent of the impacted soil and remove highly saturated soil from the site. Approximately thirty (30) cubic yards (cy) of crude oil and produced water saturated soil was scraped from the flowpath to a depth of approximately eight (8) inches below ground surface (bgs) and transported to an NMOCD approved disposal site.

Following the removal of the saturated soil, three (3) investigation trenches (T-1, T-2 and T-3) were excavated along the release flowpath to assess the vertical extent of the release. Please reference Figure 2 (Site Map) for locations of the investigation trenches.

Investigation Trench T-1 was located on the well pad and was excavated to a depth of approximately two and one half (2.5) feet bgs. A soil sample (T-1 @ 2.5') was collected from the floor of the trench and submitted to the laboratory for determination of the benzene, toluene, ethyl-benzene and xylene (BTEX) concentrations, total petroleum hydrocarbon (TPH) concentration and chloride concentration by methods 8021b, 8015M, and EPA 300, respectively. The analytical results indicated benzene and BTEX concentrations were less than the laboratory method detection limit (MDL) of 0.0012 mg/Kg and 0.0024 mg/Kg, respectively. The TPH concentration of soil sample T-1 @ 2.5' was 183.1 mg/Kg and the chloride concentration was 7,650 mg/Kg. Following the collection of the soil sample the investigation trench was backfilled. A summary of the laboratory results is provided as Table 1, Concentrations of Benzene, BTEX, TPH and Chloride in Soil. Laboratory reports are provided as Appendix A.

Investigation Trench T-2 was located off the well pad on the caliche road adjacent to the well pad and was excavated to a depth of approximately two (2) feet bgs. A soil sample (T-2 @ 2') was collected from the floor of the trench and submitted to the laboratory and analyzed for concentrations of benzene, BTEX, TPH and chloride. The analytical results indicated benzene and BTEX concentrations were less than the laboratory MDL of 0.0012 mg/Kg and 0.0024 mg/Kg, respectively. The TPH concentration of soil sample T-2 @ 2' was less than the laboratory MDL of 17.7 mg/Kg and chloride concentration was 215 mg/Kg. Following the collection of the soil sample the investigation trench was backfilled.

Investigation Trench T-3 was located on the caliche road and was excavated to a depth of approximately four (4) feet bgs. A soil sample (T-3 @ 4') was collected from the floor of the trench and submitted to the laboratory and analyzed for concentrations of benzene, BTEX, TPH and chloride. The analytical results indicated benzene and BTEX concentrations were less than the laboratory MDL of 0.006 mg/Kg and 0.012 mg/Kg, respectively. The TPH concentration of soil sample T-2 @ 2' was less than the laboratory MDL of 18 mg/Kg and the chloride concentration was 639 mg/Kg. Following the collection of the soil sample the investigation trench was backfilled.

In August 2008, a *Soil Investigation Summary and Site Closure Proposal*, dated August 2008 was submitted to the NMOCD – Artesia District Office. The report summarized recent field activities and proposed a strategy designed to provide an NMOCD approved site closure. The

proposed activities were verbally approved by the NMOCD – Artesia District Office and the activities commenced.

Initial excavation activities began on the east side of the South Red Lake II Unit #43 pump jack. Impacted soil was stockpiled on-site pending transportation to Lea Land Landfill located in rural Lea County, New Mexico. During excavation activities on the east side of the pump jack, an area of significantly greater impact was observed on the east sidewall of the east side excavation. This area of impact did not appear to be associated with the South Red Lake II Unit #43 release. The area of significantly greater impact appeared to be associated with a well site located directly east of the South Red Lake II Unit #43 pump jack and sharing the common well pad. Representatives of the NMOCD – Artesia District Office were consulted, observed the east sidewall and concurred with Basin's observations. The NMOCD – Artesia District Office approved the installation of a liner along the east sidewall of the east side excavation. The 20 mil poly-ethylene liner installed on the east sidewall is designed to isolate the significantly greater impacted soil located on the east sidewall from remediation activities conducted at the South Lake II Unit #43 well site.

Following the excavation of the east side area of impact, excavation activities commenced in the larger area of impact located on the west side of the well pad and adjacent lease road. Excavation began on the south end of the impacted area and progressed to the north and west of the release to a depth of approximately six (6) feet bgs. Excavated soil was added to the previously stockpiled soil.

On September 24, 2008, fourteen (14) sidewall soil samples (EW-1, WW-1, EW-2, WW-2, EW-3, WW-3, EW-4, WW-4, NW-5, SW-5, NW-6, SW-6, NW-8 and SW-8) were collected and submitted to the laboratory for benzene, BTEX, TPH and chloride analysis. The analytical results for benzene indicated all fourteen (14) soil samples exhibited concentrations less than the laboratory MDL ranging from less than 0.001 mg/Kg to less than 0.0012 mg/Kg. The analytical results for BTEX indicated all fourteen (14) soil samples exhibited concentrations less than the laboratory MDL ranging from less than 0.0021 mg/Kg to less than 0.0024 mg/Kg. The analytical results for TPH indicated twelve (12) of the fourteen (14) soil samples exhibited concentrations less than the laboratory MDL ranging from less than 15.5 mg/Kg to less than 17.8 mg/Kg. Soil samples EW-4 and NW-6 exhibited TPH concentrations of 19.1 mg/Kg and 16.2 mg/Kg, respectively. Chloride concentrations ranged from less than the laboratory MDL in soil samples EW-1, EW-3, WW-3 and NW-5 to 9,780 in soil sample NW-8.

On September 24, 2008, five (5) excavation floor soil samples (Floor-4, Floor-5, Floor-6, Floor-7 and Floor-8) were collected and submitted to the laboratory for benzene, BTEX, TPH and chloride analysis. The analytical results for benzene indicated all five (5) soil samples exhibited concentrations less than the laboratory MDL ranging from less than 0.001 mg/Kg to less than 0.0013 mg/Kg. The analytical results for BTEX indicated all five (5) soil samples exhibited concentrations less than the laboratory MDL ranging from less than 0.0022 mg/Kg to less than 0.0027 mg/Kg. The analytical results for TPH indicated all five (5) soil samples exhibited concentrations less than the laboratory MDL ranging from less than 17.0 mg/Kg to less than 20.2 mg/Kg. Chloride concentrations ranged from 1,320 mg/Kg in soil sample Floor-4 to 4,580 in soil sample Floor-5.

Following the sampling event, a period of heavy rain was experienced in southeast New Mexico. During the rain event, Fairway experienced a non-reportable release from the South Red Lake II Unit #43 wellhead. The heavy rain, combined with the non-reportable release, filled the existing excavation to capacity. Following the rain event, crude oil staining was observed on the sidewalls and floor of the excavation, invalidating the analytical results of the August 24, 2008 sampling event and requiring additional excavation and confirmation soil sampling.

Additional excavation activities commenced when the soil within the excavation dried sufficiently for work to continue. Approximately one (1) to three (3) feet of additional soil was excavated from the excavation floor and sidewalls and stockpiled on-site. A total of approximately 2,830 cubic yards of impacted soil was transported to Lea Land Landfill (WM-01-035) for disposal.

On December 29, 2008, ten (10) sidewall soil samples (EW #10, SW #10, NW #5A, SW #5A, NW #6A, SW #6A, NW #8A, SW #8A, NW #9, and SW #9) were collected and submitted to the laboratory for TPH and chloride analysis. The analytical results for TPH indicated all ten (10) of the soil samples exhibited concentrations less than the laboratory MDL ranging from less than 15.5 mg/Kg to less than 24.0 mg/Kg. Chloride concentrations ranged from 8.03 mg/Kg in soil sample SW #8A to 1,610 mg/Kg in soil sample SW #5A.

On December 29, 2008, five (5) excavation floor soil samples (Floor #10, Floor #5A, Floor #6A, Floor #8A, and Floor #9) were collected and submitted to the laboratory for TPH and chloride analysis. The analytical results for TPH indicated all five (5) soil samples exhibited concentrations less than the laboratory MDL ranging from less than 16.9 mg/Kg to less than 24.0 mg/Kg. Chloride concentrations ranged from less than the laboratory MDL of 5.79 mg/Kg in soil sample Floor #6A to 1,360 in soil sample Floor #10.

On December 30, 2008, eight (8) sidewall soil samples (EW #1A, WW #1A, EW #2A, WW #2A, EW #3A, WW #3A, EW #4A, and WW #4A) were collected and submitted to the laboratory for TPH and chloride analysis. The analytical results for TPH indicated seven (7) of the soil samples exhibited concentrations less than the laboratory MDL ranging from less than 17.0 mg/Kg to less than 17.9 mg/Kg. Soil sample EW #2 exhibited, Chloride concentrations ranged from 8.03 mg/Kg in soil sample SW #8A to 1,610 mg/Kg in soil sample SW #5A.

On December 30, 2008, five (5) excavation floor soil samples (Floor #1A, Floor #2A, Floor #3A, Floor #4A, and Floor #7A) were collected and submitted to the laboratory for TPH and chloride analysis. The analytical results for TPH indicated three (3) soil samples (Floor #2A, Floor #4A and Floor 7A) exhibited concentrations less than the laboratory MDL ranging from less than 16.9 mg/Kg to less than 17.6 mg/Kg. The analytical results for TPH indicated soil samples Floor #1A and Floor #3A exhibited concentrations of 83 mg/Kg and 3,282 mg/Kg, respectively. Chloride concentrations ranged from 363 mg/Kg in soil sample Floor #7A to 4,690 mg/Kg in soil sample Floor #3A

On January 7, 2009, representatives of Basin met with an NMOCD-Artesia District Office representative at the release site. Basin presented the analytical results of the December 2009 sampling event on behalf of Fairway and requested and received NMOCD approval to install a

polyethylene liner on the floor of the excavation and east sidewall. Following the installation of the liner the excavation was backfilled with local purchased native caliche to approximately two (2) feet bgs. The upper two (2) feet of the excavation was backfilled with caliche on the well pad and road and with over excavated soil deemed suitable by analysis. The affected area was contoured to fit the surrounding topography where contouring was appropriate and areas not on the well pad or in the road will be reseeded when weather conditions are optimal for sustained growth. Photographs of the liner installation and general site photographs are provided as Appendix B.

## **SITE CLOSURE REQUEST**

Basin recommends Fairway provide the NMOCD – Artesia District Office a copy of this Remediation Summary and Site Closure Request and request the NMOCD grant a risk-based site closure to the South Red Lake II Unit #43 release.

## **LIMITATIONS**

Basin Environmental Consulting, LLC has prepared this Remediation Summary and Site Closure Request to the best of its ability. No other warranty, expressed or implied, is made or intended.

Basin Environmental Consulting, LLC has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. Basin Environmental Consulting, LLC has not conducted an independent examination of the facts contained in referenced materials and statements. We have presumed the genuineness of the documents and that the information provided in documents or statements is true and accurate. Basin Environmental Consulting, LLC has prepared this report, in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin Environmental Consulting, LLC also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of Fairway Resources Operating, LLC. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Consulting, LLC and/or Fairway Resources Operating, LLC.

**DISTRIBUTION:**

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# Figures

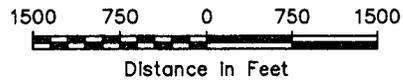
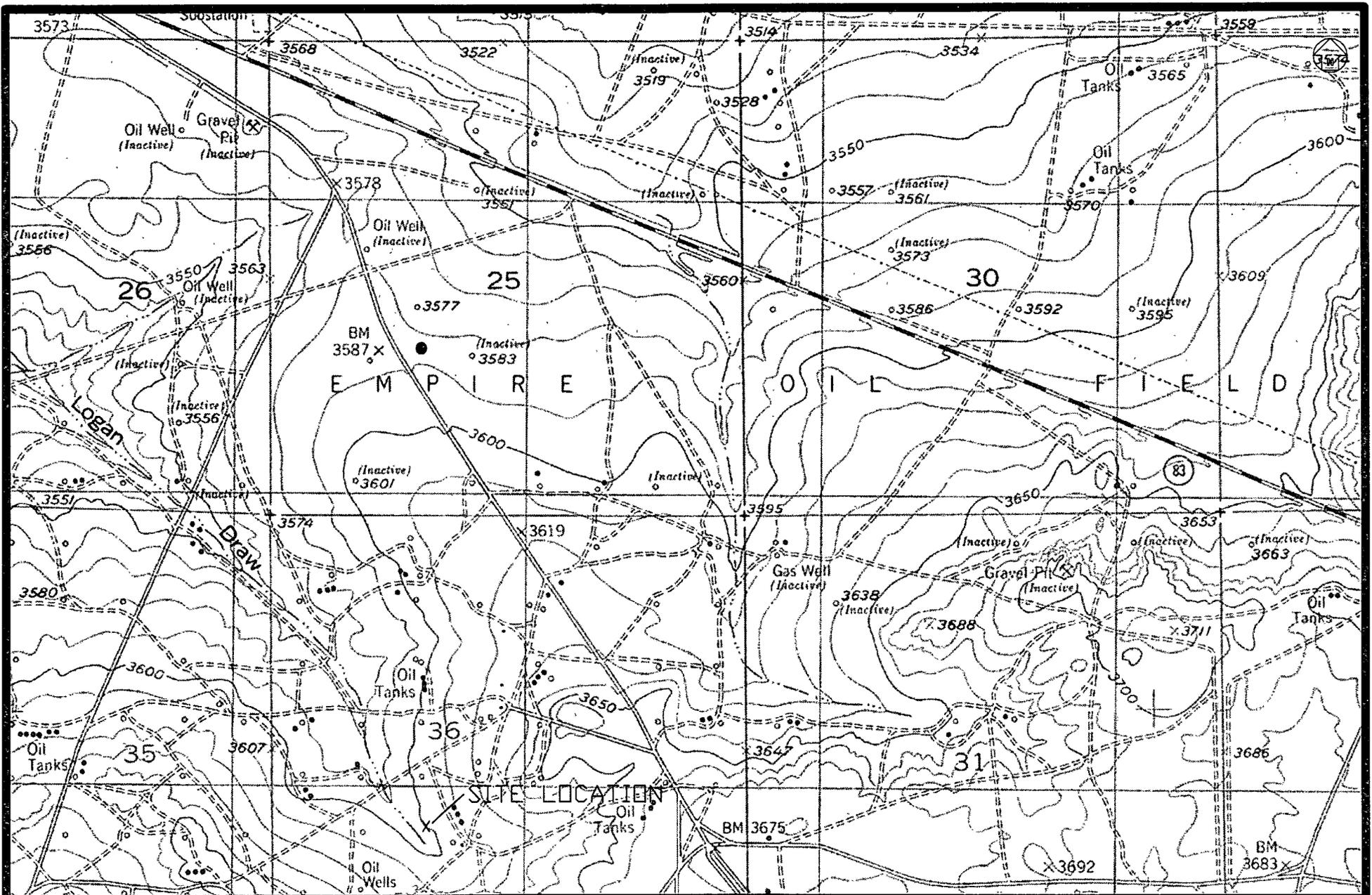
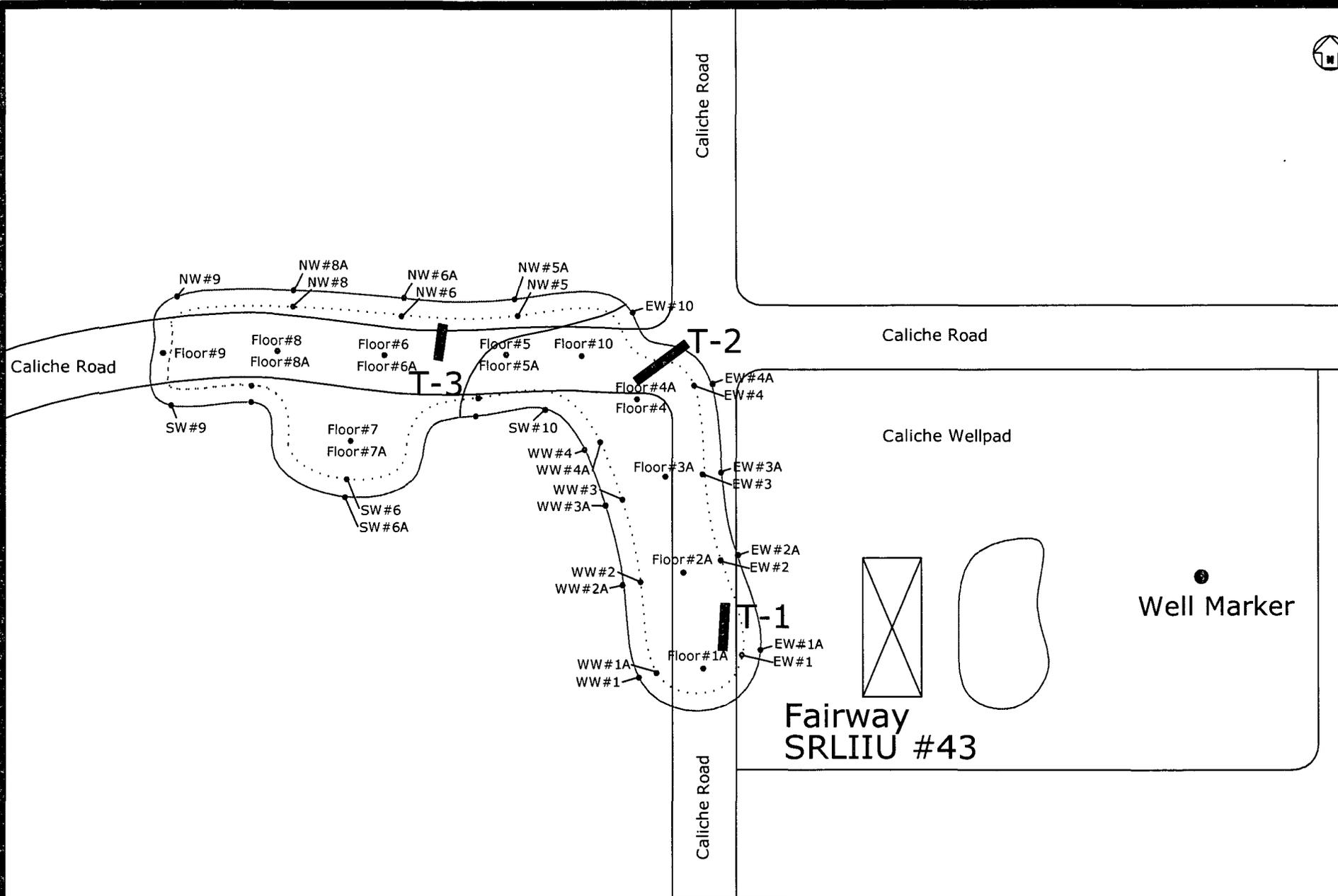


Figure 1  
 Site Location Map  
 Fairway Resources  
 South Red Lake II Unit #43  
 Eddy County, New Mexico  
 2RP-188

**Basin Environmental Services**

Prep By: CDS	Checked By: CDS
August 6, 2008	Scale 1"=1,500'



**Legend:**

- Approximate Extent of Excavation
- Location of Investigation Trench
- Sample Location Point

**Figure 2**  
**Schematic Site**  
**and Sample Location Map**  
**Fairway Resources**  
**South Red Lake II Unit #43**  
**Eddy County, New Mexico**  
**NMOCD Ref. # 2RP-188**

**Basin Environmental Services**

Prep By CDS	Checked By CDS
May 7, 2009	Not to Scale

# Tables

Table 1

**CONCENTRATIONS of Benzene, BTEX, TPH and CHLORIDE IN SOIL**  
**Fairway Resources - South Red Lake II Unit #43**  
**EDDY COUNTY, NEW MEXICO**  
**2RP-188**

All measurements recorded in mg/Kg

SAMPLE DATE	SAMPLE LOCATION	SAMPLE DEPTH	SOIL STATUS	Methods. EPA SW 846-8021B, 5030							Methods. EPA SW 846-8015M				EPA 300	
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	m,p-XYLENE (mg/Kg)	o-XYLENE (mg/Kg)	TOTAL XYLENE (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg)	DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg)	ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg)	TOTAL TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	Chloride (mg/Kg)	
06/19/08	T-1 @ 2.5'	2.5 feet bgs	In-Situ	<0.0012	<0.0024	<0.0012	<0.0024	<0.0012	<0.0024	<0.0024	<0.0024	20.3	133	29.8	183.1	7,650
06/19/08	T-2 @ 2'	2 feet bgs	In-Situ	<0.0012	<0.0024	<0.0012	<0.0024	<0.0012	<0.0024	<0.0024	<0.0024	<17.7	<17.7	<17.7	<17.7	215
06/19/08	T-3 @ 4'	4 feet bgs	In-Situ	<0.0060	<0.0120	<0.0060	<0.0120	<0.0060	<0.0120	<0.0120	<0.0120	<18.0	<18.0	<18.0	<18.0	639
09/24/08	EW-1	5 feet bgs	Excavated	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0023	<0.0023	<0.0023	<17.3	<17.3	<17.3	<17.3	<11.5
09/24/08	WW-1	5 feet bgs	Excavated	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<0.0022	<0.0022	<16.7	<16.7	<16.7	<16.7	26.9
09/24/08	EW-2	5 feet bgs	Excavated	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0023	<0.0023	<0.0023	<17.4	<17.4	<17.4	<17.4	40.4
09/24/08	WW-2	5 feet bgs	Excavated	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<0.0022	<0.0022	<16.9	<16.9	<16.9	<16.9	50.3
09/24/08	EW-3	5 feet bgs	Excavated	<0.0012	<0.0024	<0.0012	<0.0024	<0.0012	<0.0024	<0.0024	<0.0024	<17.8	<17.8	<17.8	<17.8	<11.8
09/24/08	WW-3	5 feet bgs	Excavated	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<0.0023	<0.0023	<16.9	<16.9	<16.9	<16.9	<5.65
09/24/08	Floor-4	6 feet bgs	Excavated	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<0.0023	<0.0023	<17.0	<17.0	<17.0	<17.0	1,320
09/24/08	EW-4	5 feet bgs	Excavated	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0023	<0.0023	<0.0023	<17.3	19.1	<17.3	19.1	1,070
09/24/08	WW-4	5 feet bgs	Excavated	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<0.0022	<0.0022	<16.9	<16.9	<16.9	<16.9	148
09/24/08	Floor-5	6 feet bgs	Excavated	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<0.0023	<0.0023	<17.2	<17.2	<17.2	<17.2	4,580
09/24/08	NW-5	5 feet bgs	Excavated	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<0.0021	<0.0021	<15.5	<15.5	<15.5	<15.5	<10.3
09/24/08	Floor-6	6 feet bgs	Excavated	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<0.0023	<0.0023	<17.1	<17.1	<17.1	<17.1	1,680
09/24/08	SW-5	5 feet bgs	Excavated	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<0.0022	<0.0022	<16.2	<16.2	<16.2	<16.2	1,710
09/24/08	NW-6	5 feet bgs	Excavated	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<0.0021	<0.0021	<15.6	16.2	<15.6	16.2	78.1
09/24/08	SW-6	5 feet bgs	Excavated	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<0.0023	<0.0023	<16.9	<16.9	<16.9	<16.9	390
09/24/08	Floor-7	6 feet bgs	Excavated	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<0.0023	<0.0023	<17.1	<17.1	<17.1	<17.1	4,250
09/24/08	Floor-8	6 feet bgs	Excavated	<0.0013	<0.0027	<0.0013	<0.0027	<0.0013	<0.0027	<0.0027	<0.0027	<20.2	<20.2	<20.2	<20.2	<13.5
09/24/08	NW-8	5 feet bgs	Excavated	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<0.0022	<0.0022	<16.4	<16.4	<16.4	<16.4	9,780
09/24/08	SW-8	5 feet bgs	Excavated	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<0.0023	<0.0023	<17.0	<17.0	<17.0	<17.0	113
12/29/08	Floor #10	7 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.1	<17.1	<17.1	<17.1	1,360
12/29/08	EW #10	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.2	<17.2	<17.2	<17.2	934
12/29/08	SW #10	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<16.4	<16.4	<16.4	<16.4	389
12/29/08	NW #5A	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<15.5	<15.5	<15.5	<15.5	326
12/29/08	Floor #5A	8 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.4	<17.4	<17.4	<17.4	179
12/29/08	SW #5A	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.8	<17.8	<17.8	<17.8	1,610
12/29/08	NW #6A	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<16.5	<16.5	<16.5	<16.5	90
12/29/08	Floor #6A	8 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.4	<17.4	<17.4	<17.4	<5.79
12/29/08	SW #6A	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.5	<17.5	<17.5	<17.5	18.9
12/29/08	NW #8A	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.0	<17.0	<17.0	<17.0	46.5
12/29/08	Floor #8A	8 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<16.9	<16.9	<16.9	<16.9	77.5
12/29/08	SW #8A	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<16.5	<16.5	<16.5	<16.5	8.03
12/29/08	NW #9	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<16.9	<16.9	<16.9	<16.9	40.8
12/29/08	Floor #9	8 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<24.0	<24.0	<24.0	<24.0	49.1
12/29/08	SW #9	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<16.7	<16.7	<16.7	<16.7	13.2
12/30/08	EW #1A	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.2	<17.2	<17.2	<17.2	2,160
12/30/08	WW #1A	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.5	<17.5	<17.5	<17.5	692
12/30/08	Floor #1A	7 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.1	83	<17.1	83	2,160
12/30/08	EW #2A	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	354	1450	206	2,010	4,620
12/30/08	WW #2A	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.1	<17.1	<17.1	<17.1	4,010
12/30/08	Floor #2A	7 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.6	<17.6	<17.6	<17.6	3,940
12/30/08	EW #3A	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.2	<17.2	<17.2	<17.2	3,910
12/30/08	WW #3A	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.5	<17.5	<17.5	<17.5	4,770
12/30/08	Floor #3A	7 feet bgs	In-Situ	-	-	-	-	-	-	-	-	659	2310	313	3,282	4,690
12/30/08	EW #4A	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.9	<17.9	<17.9	<17.9	335

Table 1

CONCENTRATIONS of Benzene, BTEX, TPH and CHLORIDE IN SOIL  
 Fairway Resources - South Red Lake II Unit #43  
 EDDY COUNTY, NEW MEXICO  
 2RP-188

All measurements recorded in mg/Kg

SAMPLE DATE	SAMPLE LOCATION	SAMPLE DEPTH	SOIL STATUS	Methods: EPA SW 846-8021B, 5030							Methods: EPA SW 846-8015M				EPA 300	
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	m,p-XYLENE (mg/Kg)	o-XYLENE (mg/Kg)	TOTAL XYLENE (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg)	DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg)	ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg)	TOTAL TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	Chloride (mg/Kg)	
12/30/08	WW #4A	5 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.0	<17.0	<17.0	<17.0	444
12/30/08	Floor #4A	7 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<16.9	<16.9	<16.9	<16.9	1,280
12/30/08	Floor #7A	8 feet bgs	In-Situ	-	-	-	-	-	-	-	-	<17.4	<17.4	<17.4	<17.4	363
12/30/08	Backfill	-	In-Situ	-	-	-	-	-	-	-	-	<17.1	<17.1	<17.1	<17.1	369
NMOCD REGULATORY STANDARD				10						50					1,000	500

# Appendices

Appendix A  
Laboratory Reports

# **Analytical Report 306371**

**for**

## **Basin Environmental Services**

**Project Manager: Curt Stanley**

**South Red Lake II Unit # 43**

**Same**

**27-JUN-08**



**12600 West I-20 East Odessa, Texas 79765**

**Texas certification numbers:**

**Houston, TX T104704215**

**Florida certification numbers:**

**Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675**

**Norcross(Atlanta), GA E87429**

**South Carolina certification numbers:**

**Norcross(Atlanta), GA 98015**

**North Carolina certification numbers:**

**Norcross(Atlanta), GA 483**

**Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America  
Midland - Corpus Christi - Atlanta**



27-JUN-08

Project Manager: **Curt Stanley**  
**Basin Environmental Services**  
P.O. Box 301  
Lovington, NM 88260

Reference: XENCO Report No: **306371**  
**South Red Lake II Unit # 43**  
Project Address: Artesia, NM

**Curt Stanley:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 306371. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 306371 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

---

**Brent Barron, II**

Odessa Laboratory Manager

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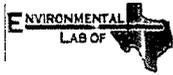


**Sample Cross Reference 306371**



**Basin Environmental Services, Lovington, NM**  
South Red Lake II Unit # 43

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
T-1 @ 2.5	S	Jun-19-08 15:00		306371-001
T-2 @ 2'	S	Jun-19-08 15:10		306371-002
T-3 @ 4'	S	Jun-19-08 15:20		306371-003



# Certificate of Analysis Summary 306371

Basin Environmental Services, Lovington, NM

Project Name: South Red Lake II Unit # 43

Project Id: Same

Contact: Curt Stanley

Project Location: Artesia, NM

Date Received in Lab: Mon Jun-23-08 08:35 am

Report Date: 27-JUN-08

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	306371-001	306371-002	306371-003			
	Field Id:	T-1 @ 2.5	T-2 @ 2'	T-3 @ 4'			
	Depth:						
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Jun-19-08 15:00	Jun-19-08 15 10	Jun-19-08 15:20			
<b>BTEX by EPA 8021B</b>	Extracted:	Jun-23-08 15:00	Jun-23-08 15:00	Jun-24-08 12:00			
	Analyzed:	Jun-24-08 00:08	Jun-24-08 00:32	Jun-24-08 16:15			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		ND 0.0012	ND 0.0012	ND 0.0060			
Toluene		ND 0.0024	ND 0.0024	ND 0.0120			
Ethylbenzene		ND 0.0012	ND 0.0012	ND 0.0060			
m,p-Xylenes		ND 0.0024	ND 0.0024	ND 0.0120			
o-Xylene		ND 0.0012	ND 0.0012	ND 0.0060			
Total Xylenes		ND	ND	ND			
Total BTEX		ND	ND	ND			
<b>Inorganic Anions by EPA 300</b>	Extracted:						
	Analyzed:	Jun-24-08 10:52	Jun-24-08 10:52	Jun-24-08 10:52			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		7650 238	215 5 90	639 24.0			
<b>Percent Moisture</b>	Extracted:						
	Analyzed:	Jun-23-08 17:00	Jun-23-08 17:00	Jun-23-08 17:00			
	Units/RL:	% RL	% RL	% RL			
Percent Moisture		15.9	15.3	16.7			
<b>TPH by SW8015 Mod</b>	Extracted:	Jun-24-08 08:48	Jun-24-08 08:48	Jun-24-08 08:48			
	Analyzed:	Jun-26-08 14:10	Jun-26-08 14:48	Jun-26-08 15:35			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
C6-C12 Gasoline Range Hydrocarbons		20.3 17.8	ND 17.7	ND 18.0			
C12-C28 Diesel Range Hydrocarbons		133 17.8	ND 17.7	ND 18.0			
C28-C35 Oil Range Hydrocarbons		29.8 17.8	ND 17.7	ND 18.0			
Total TPH		183.1	ND	ND			

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

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America - Atlanta - Corpus Christi

  
 Brent Barron  
 Odessa Laboratory Director



## Flagging Criteria

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

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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(770) 449-8800	(770) 449-5477



# Form 2 - Surrogate Recoveries



Project Name: South Red Lake II Unit # 43

Work Order #: 306371

Project ID: Same

Lab Batch #: 726318

Sample: 306371-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

Lab Batch #: 726318

Sample: 306371-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0332	0.0300	111	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 726318

Sample: 511084-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0355	0.0300	118	80-120	

Lab Batch #: 726318

Sample: 511084-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0343	0.0300	114	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 726318

Sample: 511084-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries



Project Name: South Red Lake II Unit # 43

Work Order #: 306371

Project ID: Same

Lab Batch #: 726328

Sample: 306371-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1,4-Difluorobenzenc	0.0347	0.0300	116	80-120	
4-Bromofluorobenzenc	0.0307	0.0300	102	80-120	

Lab Batch #: 726328

Sample: 511084-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1,4-Difluorobenzenc	0.0270	0.0300	90	80-120	
4-Bromofluorobenzenc	0.0323	0.0300	108	80-120	

Lab Batch #: 726328

Sample: 511084-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1,4-Difluorobenzenc	0.0349	0.0300	116	80-120	
4-Bromofluorobenzenc	0.0299	0.0300	100	80-120	

Lab Batch #: 726328

Sample: 511084-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1,4-Difluorobenzenc	0.0282	0.0300	94	80-120	
4-Bromofluorobenzenc	0.0318	0.0300	106	80-120	

Lab Batch #: 726418

Sample: 306327-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1-Chlorooctanc	83.3	100	83	70-135	
o-Terphenyl	47.2	50.0	94	70-135	

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

\*\*\* Poor recoveries due to dilution

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

All results are based on MDL and validated for QC purposes



# Form 2 - Surrogate Recoveries



Project Name: South Red Lake II Unit # 43

Work Order #: 306371

Project ID: Same

Lab Batch #: 726418

Sample: 306327-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.8	100	84	70-135	
o-Terphenyl	48.2	50.0	96	70-135	

Lab Batch #: 726418

Sample: 306371-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.4	100	73	70-135	
o-Terphenyl	41.8	50.0	84	70-135	

Lab Batch #: 726418

Sample: 306371-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.6	100	73	70-135	
o-Terphenyl	41.7	50.0	83	70-135	

Lab Batch #: 726418

Sample: 306371-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.4	100	70	70-135	
o-Terphenyl	40.8	50.0	82	70-135	

Lab Batch #: 726418

Sample: 511165-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.4	100	79	70-135	
o-Terphenyl	44.3	50.0	89	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries



Project Name: South Red Lake II Unit # 43

Work Order #: 306371

Project ID: Same

Lab Batch #: 726418

Sample: 511165-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.0	100	73	70-135	
o-Terphenyl	41.3	50.0	83	70-135	

Lab Batch #: 726418

Sample: 511165-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.0	100	80	70-135	
o-Terphenyl	44.1	50.0	88	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



# Blank Spike Recovery



**Project Name: South Red Lake II Unit # 43**

**Work Order #: 306371**

**Project ID:**

Same

**Lab Batch #: 726343**

**Sample: 726343-1-BKS**

**Matrix: Solid**

**Date Analyzed: 06/24/2008**

**Date Prepared: 06/24/2008**

**Analyst: LATCOR**

**Reporting Units: mg/kg**

**Batch #: 1**

## BLANK /BLANK SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300  Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	11.4	114	75-125	

Blank Spike Recovery [D] = 100\*[C]/[B]

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



# BS / BSD Recoveries



Project Name: South Red Lake II Unit # 43

Work Order #: 306371

Analyst: BRB

Lab Batch ID: 726318

Sample: 511084-1-BKS

Batch #: 1

Project ID: Same

Date Analyzed: 06/23/2008

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	ND	0.1000	0.1165	117	0.1	0.0984	98	17	70-130	35	
Toluene	ND	0.1000	0.1152	115	0.1	0.0961	96	18	70-130	35	
Ethylbenzene	ND	0.1000	0.1269	127	0.1	0.1060	106	18	71-129	35	
m,p-Xylenes	ND	0.2000	0.2584	129	0.2	0.2165	108	18	70-135	35	
o-Xylene	ND	0.1000	0.1255	126	0.1	0.1044	104	18	71-133	35	

Analyst: BRB

Date Prepared: 06/24/2008

Date Analyzed: 06/24/2008

Lab Batch ID: 726328

Sample: 511084-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	ND	0.1000	0.0998	100	0.1	0.1047	105	5	70-130	35	
Toluene	ND	0.1000	0.0987	99	0.1	0.1035	104	5	70-130	35	
Ethylbenzene	ND	0.1000	0.1111	111	0.1	0.1166	117	5	71-129	35	
m,p-Xylenes	ND	0.2000	0.2237	112	0.2	0.2348	117	5	70-135	35	
o-Xylene	ND	0.1000	0.1083	108	0.1	0.1138	114	5	71-133	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



# BS / BSD Recoveries



**Project Name: South Red Lake II Unit # 43**

**Work Order #: 306371**

**Analyst: ASA**

**Date Prepared: 06/24/2008**

**Project ID: Same**

**Date Analyzed: 06/25/2008**

**Lab Batch ID: 726418**

**Sample: 511165-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

## BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
<b>Analytes</b>											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	840	84	1000	838	84	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	838	84	1000	832	83	1	70-135	35	

Relative Percent Difference RPD =  $200 * |(D-F)/(D+F)|$   
Blank Spike Recovery [D] =  $100 * (C)/[B]$   
Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$   
All results are based on MDL and Validated for QC Purposes



# Form 3 - MS Recoveries



Project Name: South Red Lake II Unit # 43

Work Order #: 306371

Lab Batch #: 726343

Date Analyzed: 06/24/2008

Date Prepared: 06/24/2008

Project ID: Same

Analyst: LATCOR

QC- Sample ID: 306370-001 S

Batch #: 1

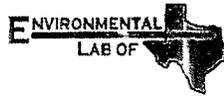
Matrix: Soil

Reporting Units: mg/kg

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
	Chloride	2140	2040	5140	147	75-125

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



# Form 3 - MS / MSD Recoveries



Project Name: South Red Lake II Unit # 43

Work Order #: 306371

Project ID: Same

Lab Batch ID: 726418

QC- Sample ID: 306327-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/26/2008

Date Prepared: 06/24/2008

Analyst: ASA

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1300	1090	84	1300	1090	84	0	70-135	0	
C12-C28 Diesel Range Hydrocarbons	ND	1300	1120	86	1300	1110	85	1	70-135	1	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



# Sample Duplicate Recovery



Project Name: South Red Lake II Unit # 43

Work Order #: 306371

Lab Batch #: 726343

Project ID: Same

Date Analyzed: 06/24/2008

Date Prepared: 06/24/2008

Analyst: LATCOR

QC- Sample ID: 306370-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	2140	2300	7	20	

Lab Batch #: 726229

Date Analyzed: 06/23/2008

Date Prepared: 06/23/2008

Analyst: JLG

QC- Sample ID: 306371-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	15.9	16.2	2	20	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$   
All Results are based on MDL and validated for QC purposes.



**Environmental Lab of Texas**  
Variance/ Corrective Action Report- Sample Log-In

Client: Basin Env.  
Date/ Time: 6.23.08 8:35  
Lab ID #: 306371  
Initials: al

**Sample Receipt Checklist**

				Client Initials
#1	Temperature of container/ cooler?	<input checked="" type="radio"/> Yes	No	(a.c) ° C
#2	Shipping container in good condition?	<input checked="" type="radio"/> Yes	No	
#3	Custody Seals intact on shipping container/ cooler?	<input checked="" type="radio"/> Yes	No	<del>Not Present</del>
#4	Custody Seals intact on sample bottles/ container?	<input checked="" type="radio"/> Yes	No	Not Present
#5	Chain of Custody present?	<input checked="" type="radio"/> Yes	No	
#6	Sample instructions complete of Chain of Custody?	<input checked="" type="radio"/> Yes	No	
#7	Chain of Custody signed when relinquished/ received?	<input checked="" type="radio"/> Yes	No	
#8	Chain of Custody agrees with sample label(s)?	<input checked="" type="radio"/> Yes	No	ID written on Cont / Lid
#9	Container label(s) legible and intact?	<input checked="" type="radio"/> Yes	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="radio"/> Yes	No	
#11	Containers supplied by ELOT?	<input checked="" type="radio"/> Yes	No	
#12	Samples in proper container/ bottle?	<input checked="" type="radio"/> Yes	No	See Below
#13	Samples properly preserved?	<input checked="" type="radio"/> Yes	No	See Below
#14	Sample bottles intact?	<input checked="" type="radio"/> Yes	No	
#15	Preservations documented on Chain of Custody?	<input checked="" type="radio"/> Yes	No	
#16	Containers documented on Chain of Custody?	<input checked="" type="radio"/> Yes	No	
#17	Sufficient sample amount for indicated test(s)?	<input checked="" type="radio"/> Yes	No	See Below
#18	All samples received within sufficient hold time?	<input checked="" type="radio"/> Yes	No	See Below
#19	Subcontract of sample(s)?	<input checked="" type="radio"/> Yes	No	<del>Not Applicable</del>
#20	VOC samples have zero headspace?	<input checked="" type="radio"/> Yes	No	Not Applicable

**Variance Documentation**

Contact \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/ Time: \_\_\_\_\_

Regarding \_\_\_\_\_

Corrective Action Taken:

\_\_\_\_\_  
\_\_\_\_\_

- Check all that Apply
- See attached e-mail/ fax
  - Client understands and would like to proceed with analysis
  - Cooling process had begun shortly after sampling event

# **Analytical Report 313348**

**for**

## **Basin Environmental Services**

**Project Manager: Curt Stanley**

**South Red Lake II Unit # 43**

**Fairway Resources**

**02-OCT-08**



**E84880**

**12600 West I-20 East Odessa, Texas 79765**

Texas certification numbers:

Houston, TX T104704215 - Odessa/Midland, TX T104704215-08-TX

Florida certification numbers:

Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675  
Norcross(Atlanta), GA E87429

South Carolina certification numbers:

Norcross(Atlanta), GA 98015

North Carolina certification numbers:

Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America  
Midland - Corpus Christi - Atlanta



02-OCT-08

Project Manager: **Curt Stanley**  
**Basin Environmental Services**  
P.O. Box 301  
Lovington, NM 88260

Reference: XENCO Report No: **313348**  
**South Red Lake II Unit # 43**  
Project Address: East of Artesia, NM

**Curt Stanley:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 313348. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 313348 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

---

**Brent Barron, II**

Odessa Laboratory Manager

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**Sample Cross Reference 313348**



**Basin Environmental Services, Lovington, NM**  
South Red Lake II Unit # 43

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
EW-1	S	Sep-24-08 10:10		313348-001
WW-1	S	Sep-24-08 10:15		313348-002
EW-2	S	Sep-24-08 10:20		313348-003
WW-2	S	Sep-24-08 10:25		313348-004
EW-3	S	Sep-24-08 10:30		313348-005
WW-3	S	Sep-24-08 10:35		313348-006
Floor-4	S	Sep-24-08 10:40		313348-007
EW-4	S	Sep-24-08 10:45		313348-008
WW-4	S	Sep-24-08 10:50		313348-009
Floor-5	S	Sep-24-08 10:55		313348-010
NW-5	S	Sep-24-08 11:00		313348-011
Floor-6	S	Sep-24-08 11:05		313348-012
SW-5	S	Sep-24-08 11:07		313348-013
NW-6	S	Sep-24-08 11:10		313348-014
SW-6	S	Sep-24-08 11:15		313348-015
Floor-7	S	Sep-24-08 11:20		313348-016
Floor-8	S	Sep-24-08 11:25		313348-017
NW-8	S	Sep-24-08 11:30		313348-018
SW-8	S	Sep-24-08 11:35		313348-019



# Certificate of Analysis Summary 313348

Basin Environmental Services, Lovington, NM

Project Name: South Red Lake II Unit # 43



Project ID: Fairway Resources

Contact: Curt Stanley

Project Location: East of Artesia, NM

Date Received in Lab: Fri Sep-26-08 02:00 pm

Report Date: 02-OCT-08

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	313348-001	313348-002	313348-003	313348-004	313348-005	313348-006
	Field Id:	EW-1	WW-1	EW-2	WW-2	EW-3	WW-3
	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Sep-24-08 10:10	Sep-24-08 10:15	Sep-24-08 10:20	Sep-24-08 10:25	Sep-24-08 10:30	Sep-24-08 10:35
<b>Anions by EPA 300/300.1</b>	Extracted:	Sep-29-08 08:50					
	Analyzed:	Sep-29-08 08:50					
	Units/RL:	mg/kg RL					
Chloride		ND 11.5	26.9 5.57	40.4 11.6	50.3 11.2	ND 11.8	ND 5.65
<b>BTEX by EPA 8021B</b>	Extracted:	Sep-26-08 16:05	Sep-29-08 17:00	Sep-26-08 16:05	Sep-26-08 16:05	Sep-26-08 16:05	Sep-26-08 16:05
	Analyzed:	Sep-26-08 17:27	Sep-29-08 19:50	Sep-26-08 18:35	Sep-26-08 18:58	Sep-26-08 19:21	Sep-26-08 19:44
	Units/RL:	mg/kg RL					
Benzene		ND 0.0012	ND 0.0011	ND 0.0012	ND 0.0011	ND 0.0012	ND 0.0011
Toluene		ND 0.0023	ND 0.0022	ND 0.0023	ND 0.0022	ND 0.0024	ND 0.0023
Ethylbenzene		ND 0.0012	ND 0.0011	ND 0.0012	ND 0.0011	ND 0.0012	ND 0.0011
m,p-Xylenes		ND 0.0023	ND 0.0022	ND 0.0023	ND 0.0022	ND 0.0024	ND 0.0023
o-Xylene		ND 0.0012	ND 0.0011	ND 0.0012	ND 0.0011	ND 0.0012	ND 0.0011
Total Xylenes		ND	ND	ND	ND	ND	ND
Total BTEX		ND	ND	ND	ND	ND	ND
<b>Percent Moisture</b>	Extracted:	Sep-29-08 15:13					
	Analyzed:	Sep-29-08 15:13					
	Units/RL:	% RL					
Percent Moisture		13.3	10.2	13.7	11.1	15.6	11.5
<b>TPH By SW8015 Mod</b>	Extracted:	Sep-30-08 16:15					
	Analyzed:	Oct-01-08 03:23	Oct-01-08 03:51	Oct-01-08 04:16	Oct-01-08 04:44	Oct-01-08 05:12	Oct-01-08 05:40
	Units/RL:	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 17.3	ND 16.7	ND 17.4	ND 16.9	ND 17.8	ND 16.9
C12-C28 Diesel Range Hydrocarbons		ND 17.3	ND 16.7	ND 17.4	ND 16.9	ND 17.8	ND 16.9
C28-C35 Oil Range Hydrocarbons		ND 17.3	ND 16.7	ND 17.4	ND 16.9	ND 17.8	ND 16.9
Total TPH		ND	ND	ND	ND	ND	ND

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 Brent Barron  
 Odessa Laboratory Director



# Certificate of Analysis Summary 313348

Basin Environmental Services, Lovington, NM

Project Name: South Red Lake II Unit # 43



Project Id: Fairway Resources

Contact: Curt Stanley

Project Location: East of Artesia, NM

Date Received in Lab: Fri Sep-26-08 02:00 pm

Report Date: 02-OCT-08

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	313348-007	313348-008	313348-009	313348-010	313348-011	313348-012
	<i>Field Id:</i>	Floor-4	EW-4	WW-4	Floor-5	NW-5	Floor-6
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-24-08 10:40	Sep-24-08 10:45	Sep-24-08 10:50	Sep-24-08 10:55	Sep-24-08 11:00	Sep-24-08 11:05
<b>Anions by EPA 300/300.1</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Sep-29-08 08:50					
	<i>Units/RL:</i>	mg/kg RL					
Chloride		1320 28.4	1070 28.8	148 11.2	4580 115	ND 10.3	1680 28.6
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Sep-26-08 16:05	Sep-26-08 16:47				
	<i>Analyzed:</i>	Sep-26-08 20:07	Sep-26-08 20:30	Sep-26-08 20:53	Sep-26-08 21:16	Sep-26-08 21:38	Sep-27-08 06:42
	<i>Units/RL:</i>	mg/kg RL					
Benzene		ND 0.0011	ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011
Toluene		ND 0.0023	ND 0.0023	ND 0.0022	ND 0.0023	ND 0.0021	ND 0.0023
Ethylbenzene		ND 0.0011	ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011
m,p-Xylenes		ND 0.0023	ND 0.0023	ND 0.0022	ND 0.0023	ND 0.0021	ND 0.0023
o-Xylene		ND 0.0011	ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011
Total Xylenes		ND	ND	ND	ND	ND	ND
Total BTEX		ND	ND	ND	ND	ND	ND
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Sep-29-08 15:13					
	<i>Units/RL:</i>	% RL					
Percent Moisture		12	13.2	11.1	12.7	3.08	12.5
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Sep-30-08 16:15					
	<i>Analyzed:</i>	Oct-01-08 06:06	Oct-01-08 06:33	Oct-01-08 07:01	Oct-01-08 07:30	Oct-01-08 08:24	Oct-01-08 08:51
	<i>Units/RL:</i>	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 17.0	ND 17.3	ND 16.9	ND 17.2	ND 15.5	ND 17.1
C12-C28 Diesel Range Hydrocarbons		ND 17.0	19.1 17.3	ND 16.9	ND 17.2	ND 15.5	ND 17.1
C28-C35 Oil Range Hydrocarbons		ND 17.0	ND 17.3	ND 16.9	ND 17.2	ND 15.5	ND 17.1
Total TPH		ND	19.1	ND	ND	ND	ND

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 Brent Barron  
 Odessa Laboratory Director



# Certificate of Analysis Summary 313348

Basin Environmental Services, Lovington, NM

Project Name: South Red Lake II Unit # 43



Project Id: Fairway Resources

Contact: Curt Stanley

Project Location: East of Artesia, NM

Date Received in Lab: Fri Sep-26-08 02:00 pm

Report Date: 02-OCT-08

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	313348-013	313348-014	313348-015	313348-016	313348-017	313348-018
	<i>Field Id:</i>	SW-5	NW-6	SW-6	Floor-7	Floor-8	NW-8
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Sep-24-08 11:07	Sep-24-08 11:10	Sep-24-08 11:15	Sep-24-08 11:20	Sep-24-08 11:25	Sep-24-08 11:30
<b>Anions by EPA 300/300.1</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Sep-29-08 08:50					
	<i>Units/RL:</i>	mg/kg RL					
Chloride		1710 54.1	78.1 10.4	390 11.3	4250 56.9	ND 13.5	9780 219
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Sep-26-08 16:47					
	<i>Analyzed:</i>	Sep-27-08 07:05	Sep-27-08 07:27	Sep-27-08 07:50	Sep-27-08 08:13	Sep-27-08 08:35	Sep-27-08 08:58
	<i>Units/RL:</i>	mg/kg RL					
Benzene		ND 0.0011	ND 0.0010	ND 0.0011	ND 0.0011	ND 0.0013	ND 0.0011
Toluene		ND 0.0022	ND 0.0021	ND 0.0023	ND 0.0023	ND 0.0027	ND 0.0022
Ethylbenzene		ND 0.0011	ND 0.0010	ND 0.0011	ND 0.0011	ND 0.0013	ND 0.0011
m,p-Xylenes		ND 0.0022	ND 0.0021	ND 0.0023	ND 0.0023	ND 0.0027	ND 0.0022
o-Xylene		ND 0.0011	ND 0.0010	ND 0.0011	ND 0.0011	ND 0.0013	ND 0.0011
Total Xylenes		ND	ND	ND	ND	ND	ND
Total BTEX		ND	ND	ND	ND	ND	ND
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Sep-29-08 15:13					
	<i>Units/RL:</i>	% RL					
Percent Moisture		7.59	3.85	11.4	12.1	25.7	8.62
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Sep-30-08 16:15					
	<i>Analyzed:</i>	Oct-01-08 09:18	Oct-01-08 09:45	Oct-01-08 10:12	Oct-01-08 10:40	Oct-01-08 11:08	Oct-01-08 11:35
	<i>Units/RL:</i>	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 16.2	ND 15.6	ND 16.9	ND 17.1	ND 20.2	ND 16.4
C12-C28 Diesel Range Hydrocarbons		ND 16.2	16.2 15.6	ND 16.9	ND 17.1	ND 20.2	ND 16.4
C28-C35 Oil Range Hydrocarbons		ND 16.2	ND 15.6	ND 16.9	ND 17.1	ND 20.2	ND 16.4
Total TPH		ND	16.2	ND	ND	ND	ND

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 Brent Barron  
 Odessa Laboratory Director



# Certificate of Analysis Summary 313348

Basin Environmental Services, Lovington, NM

Project Name: South Red Lake II Unit # 43



Project Id: Fairway Resources

Contact: Curt Stanley

Project Location: East of Artesia, NM

Date Received in Lab: Fri Sep-26-08 02:00 pm

Report Date: 02-OCT-08

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<i>Lab Id:</i>	313348-019				
	<i>Field Id:</i>	SW-8				
	<i>Depth:</i>					
	<i>Matrix:</i>	SOIL				
	<i>Sampled:</i>	Sep-24-08 11:35				
<b>Anions by EPA 300/300.1</b>	<i>Extracted:</i>	Sep-29-08 08:50				
	<i>Analyzed:</i>	Sep-29-08 08:50				
	<i>Units/RL:</i>	mg/kg RL				
Chloride		113 11.3				
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Sep-26-08 16:47				
	<i>Analyzed:</i>	Sep-27-08 09:21				
	<i>Units/RL:</i>	mg/kg RL				
Benzene		ND 0.0011				
Toluene		ND 0.0023				
Ethylbenzene		ND 0.0011				
m,p-Xylenes		ND 0.0023				
o-Xylene		ND 0.0011				
Total Xylenes		ND				
Total BTEX		ND				
<b>Percent Moisture</b>	<i>Extracted:</i>	Sep-29-08 15:13				
	<i>Analyzed:</i>	Sep-29-08 15:13				
	<i>Units/RL:</i>	% RL				
Percent Moisture		11.8				
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Sep-30-08 16:15				
	<i>Analyzed:</i>	Oct-01-08 12:44				
	<i>Units/RL:</i>	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 17.0				
C12-C28 Diesel Range Hydrocarbons		ND 17.0				
C28-C35 Oil Range Hydrocarbons		ND 17.0				
Total TPH		ND				

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 Brent Barron  
 Odessa Laboratory Director



## Flagging Criteria

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

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(281) 589-0692	(281) 589-0695
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(770) 449-8800	(770) 449-5477



# Form 2 - Surrogate Recoveries

Project Name: South Red Lake II Unit # 43

Work Orders : 313348,

Project ID: Fairway Resources

Lab Batch #: 735513

Sample: 313348-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0376	0.0300	125	80-120	**
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 735513

Sample: 313348-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0359	0.0300	120	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 735513

Sample: 313348-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0319	0.0300	106	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 735513

Sample: 313348-003 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0254	0.0300	85	80-120	

Lab Batch #: 735513

Sample: 313348-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0368	0.0300	123	80-120	**
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

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

\*\*\* Poor recoveries due to dilution

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

All results are based on MDL and validated for QC purposes



# Form 2 - Surrogate Recoveries

Project Name: South Red Lake II Unit # 43

Work Orders : 313348,

Project ID: Fairway Resources

Lab Batch #: 735513

Sample: 313348-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1,4-Difluorobenzenc	0.0359	0.0300	120	80-120	
4-Bromofluorobenzenc	0.0267	0.0300	89	80-120	

Lab Batch #: 735513

Sample: 313348-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1,4-Difluorobenzenc	0.0363	0.0300	121	80-120	**
4-Bromofluorobenzenc	0.0267	0.0300	89	80-120	

Lab Batch #: 735513

Sample: 313348-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1,4-Difluorobenzenc	0.0360	0.0300	120	80-120	
4-Bromofluorobenzenc	0.0276	0.0300	92	80-120	

Lab Batch #: 735513

Sample: 313348-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1,4-Difluorobenzenc	0.0360	0.0300	120	80-120	
4-Bromofluorobenzenc	0.0251	0.0300	84	80-120	

Lab Batch #: 735513

Sample: 313348-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1,4-Difluorobenzenc	0.0367	0.0300	122	80-120	**
4-Bromofluorobenzenc	0.0263	0.0300	88	80-120	

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: South Red Lake II Unit # 43

Work Orders : 313348,

Project ID: Fairway Resources

Lab Batch #: 735513

Sample: 313348-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0353	0.0300	118	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 735513

Sample: 313348-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0372	0.0300	124	80-120	**
4-Bromofluorobenzene	0.0260	0.0300	87	80-120	

Lab Batch #: 735513

Sample: 516468-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 735513

Sample: 516468-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0369	0.0300	123	80-120	**
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 735513

Sample: 516468-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: South Red Lake II Unit # 43

Work Orders : 313348,

Project ID: Fairway Resources

Lab Batch #: 735516

Sample: 313348-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0361	0.0300	120	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 735516

Sample: 313348-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0362	0.0300	121	80-120	**
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

Lab Batch #: 735516

Sample: 313348-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0363	0.0300	121	80-120	**
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 735516

Sample: 313348-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0364	0.0300	121	80-120	**
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 735516

Sample: 313348-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0355	0.0300	118	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: South Red Lake II Unit # 43

Work Orders : 313348,

Project ID: Fairway Resources

Lab Batch #: 735516

Sample: 313348-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0362	0.0300	121	80-120	**
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Lab Batch #: 735516

Sample: 313348-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0354	0.0300	118	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Lab Batch #: 735516

Sample: 313348-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0360	0.0300	120	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Lab Batch #: 735516

Sample: 313348-019 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 735516

Sample: 313348-019 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: South Red Lake II Unit # 43

Work Orders : 313348,

Project ID: Fairway Resources

Lab Batch #: 735516

Sample: 516467-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0252	0.0300	84	80-120	

Lab Batch #: 735516

Sample: 516467-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0365	0.0300	122	80-120	**
4-Bromofluorobenzene	0.0255	0.0300	85	80-120	

Lab Batch #: 735516

Sample: 516467-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 735599

Sample: 313348-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0376	0.0300	125	80-120	**
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 735599

Sample: 313348-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0335	0.0300	112	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: South Red Lake II Unit # 43

Work Orders : 313348,

Project ID: Fairway Resources

Lab Batch #: 735599

Sample: 313348-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0390	0.0300	130	80-120	**
4-Bromofluorobenzene	0.0469	0.0300	156	80-120	**

Lab Batch #: 735599

Sample: 516528-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

Lab Batch #: 735599

Sample: 516528-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0369	0.0300	123	80-120	**
4-Bromofluorobenzene	0.0266	0.0300	89	80-120	

Lab Batch #: 735599

Sample: 516528-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0254	0.0300	85	80-120	

Lab Batch #: 735860

Sample: 313348-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	57.8	50.0	116	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: South Red Lake II Unit # 43

Work Orders : 313348,

Project ID: Fairway Resources

Lab Batch #: 735860

Sample: 313348-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	62.7	50.0	125	70-135	

Lab Batch #: 735860

Sample: 313348-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	59.5	50.0	119	70-135	

Lab Batch #: 735860

Sample: 313348-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	58.7	50.0	117	70-135	

Lab Batch #: 735860

Sample: 313348-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	58.6	50.0	117	70-135	

Lab Batch #: 735860

Sample: 313348-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1-Chlorooctane	92.8	100	93	70-135	
o-Terphenyl	48.4	50.0	97	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: South Red Lake II Unit # 43

Work Orders : 313348,

Project ID: Fairway Resources

Lab Batch #: 735860

Sample: 313348-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	54.8	50.0	110	70-135	

Lab Batch #: 735860

Sample: 313348-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	54.7	50.0	109	70-135	

Lab Batch #: 735860

Sample: 313348-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	57.4	50.0	115	70-135	

Lab Batch #: 735860

Sample: 313348-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	57.0	50.0	114	70-135	

Lab Batch #: 735860

Sample: 313348-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	55.1	50.0	110	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: South Red Lake II Unit # 43

Work Orders : 313348,

Project ID: Fairway Resources

Lab Batch #: 735860

Sample: 313348-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	55.9	50.0	112	70-135	

Lab Batch #: 735860

Sample: 313348-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	56.1	50.0	112	70-135	

Lab Batch #: 735860

Sample: 313348-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	56.1	50.0	112	70-135	

Lab Batch #: 735860

Sample: 313348-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	55.5	50.0	111	70-135	

Lab Batch #: 735860

Sample: 313348-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	54.8	50.0	110	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: South Red Lake II Unit # 43

Work Orders : 313348,

Project ID: Fairway Resources

Lab Batch #: 735860

Sample: 313348-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	57.7	50.0	115	70-135	

Lab Batch #: 735860

Sample: 313348-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	56.8	50.0	114	70-135	

Lab Batch #: 735860

Sample: 313348-017 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	59.3	50.0	119	70-135	

Lab Batch #: 735860

Sample: 313348-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	58.8	50.0	118	70-135	

Lab Batch #: 735860

Sample: 313348-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	56.2	50.0	112	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: South Red Lake II Unit # 43

Work Orders : 313348,

Project ID: Fairway Resources

Lab Batch #: 735860

Sample: 516669-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	62.1	50.0	124	70-135	

Lab Batch #: 735860

Sample: 516669-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	100	117	70-135	
o-Terphenyl	59.0	50.0	118	70-135	

Lab Batch #: 735860

Sample: 516669-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	60.3	50.0	121	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



# Blank Spike Recovery



**Project Name: South Red Lake II Unit # 43**

**Work Order #: 313348**

**Project ID:**

Fairway Resources

**Lab Batch #: 735562**

**Sample: 735562-1-BKS**

**Matrix: Solid**

**Date Analyzed: 09/29/2008**

**Date Prepared: 09/29/2008**

**Analyst: LATCOR**

**Reporting Units: mg/kg**

**Batch #: 1**

### BLANK /BLANK SPIKE RECOVERY STUDY

Anions by EPA 300/300.1  Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	8.94	89	75-125	

Blank Spike Recovery [D] = 100\*[C]/[B]

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



# BS / BSD Recoveries



Project Name: South Red Lake II Unit # 43

Work Order #: 313348

Analyst: BRB

Date Prepared: 09/26/2008

Project ID: Fairway Resources

Date Analyzed: 09/27/2008

Lab Batch ID: 735516

Sample: 516467-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B		Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes												
Benzene		ND	0.1000	0.0995	100	0.1	0.1012	101	2	70-130	35	
Toluene		ND	0.1000	0.0942	94	0.1	0.0967	97	3	70-130	35	
Ethylbenzene		ND	0.1000	0.0942	94	0.1	0.0977	98	4	71-129	35	
m,p-Xylenes		ND	0.2000	0.1944	97	0.2	0.2019	101	4	70-135	35	
o-Xylene		ND	0.1000	0.0907	91	0.1	0.0950	95	5	71-133	35	

Analyst: BRB

Date Prepared: 09/26/2008

Date Analyzed: 09/26/2008

Lab Batch ID: 735513

Sample: 516468-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B		Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes												
Benzene		ND	0.1000	0.1101	110	0.1	0.1101	110	0	70-130	35	
Toluene		ND	0.1000	0.1079	108	0.1	0.1075	108	0	70-130	35	
Ethylbenzene		ND	0.1000	0.1124	112	0.1	0.1117	112	1	71-129	35	
m,p-Xylenes		ND	0.2000	0.2326	116	0.2	0.2305	115	1	70-135	35	
o-Xylene		ND	0.1000	0.1055	106	0.1	0.1037	104	2	71-133	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



# BS / BSD Recoveries



Project Name: South Red Lake II Unit # 43

Work Order #: 313348

Analyst: BRB

Date Prepared: 09/29/2008

Project ID: Fairway Resources

Date Analyzed: 09/29/2008

Lab Batch ID: 735599

Sample: 516528-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
<b>Analytes</b>											
Benzene	ND	0.1000	0.1042	104	0.1	0.1121	112	7	70-130	35	
Toluene	ND	0.1000	0.1005	101	0.1	0.1083	108	7	70-130	35	
Ethylbenzene	ND	0.1000	0.1029	103	0.1	0.1108	111	7	71-129	35	
m,p-Xylenes	ND	0.2000	0.2137	107	0.2	0.2295	115	7	70-135	35	
o-Xylene	ND	0.1000	0.0958	96	0.1	0.1032	103	7	71-133	35	

Analyst: ASA

Date Prepared: 09/30/2008

Date Analyzed: 10/01/2008

Lab Batch ID: 735860

Sample: 516669-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
<b>Analytes</b>											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	929	93	1000	894	89	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1030	103	1000	997	100	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



# Form 3 - MS Recoveries



Project Name: South Red Lake II Unit # 43

Work Order #: 313348  
Lab Batch #: 735562  
Date Analyzed: 09/29/2008  
QC- Sample ID: 313348-001 S  
Reporting Units: mg/kg

Date Prepared: 09/29/2008  
Batch #: 1  
Matrix: Soil  
Project ID: Fairway Resources  
Analyst: LATCOR

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	ND	231	234	101	75-125	

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



# Form 3 - MS / MSD Recoveries



Project Name: South Red Lake II Unit # 43

Work Order #: 313348

Project ID: Fairway Resources

Lab Batch ID: 735513

QC- Sample ID: 313348-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 09/26/2008

Date Prepared: 09/26/2008

Analyst: BRB

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1158	0.0821	71	0.1158	0.0887	77	8	70-130	35	
Toluene	ND	0.1158	0.0582	50	0.1158	0.0654	56	11	70-130	35	X
Ethylbenzene	ND	0.1158	0.0377	33	0.1158	0.0448	39	17	71-129	35	X
m,p-Xylenes	ND	0.2317	0.0739	32	0.2317	0.0877	38	17	70-135	35	X
o-Xylene	ND	0.1158	0.0354	31	0.1158	0.0417	36	15	71-133	35	X

Lab Batch ID: 735516

QC- Sample ID: 313348-019 S

Batch #: 1 Matrix: Soil

Date Analyzed: 09/27/2008

Date Prepared: 09/26/2008

Analyst: BRB

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1134	0.0812	72	0.1134	0.0877	77	7	70-130	35	
Toluene	ND	0.1134	0.0783	69	0.1134	0.0862	76	10	70-130	35	X
Ethylbenzene	ND	0.1134	0.0795	70	0.1134	0.0880	78	11	71-129	35	X
m,p-Xylenes	ND	0.2268	0.1646	73	0.2268	0.1823	80	9	70-135	35	
o-Xylene	ND	0.1134	0.0741	65	0.1134	0.0819	72	10	71-133	35	X

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable, N = See Narrative, EQL = Estimated Quantitation Limit



# Form 3 - MS / MSD Recoveries



Project Name: South Red Lake II Unit # 43

Work Order #: 313348

Project ID: Fairway Resources

Lab Batch ID: 735599

QC- Sample ID: 313348-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 09/30/2008

Date Prepared: 09/29/2008

Analyst: BRB

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Benzene	ND	0.1113	0.0932	84	0.1113	0.0934	84	0	70-130	35
Toluene	ND	0.1113	0.0860	77	0.1113	0.1094	98	24	70-130	35	
Ethylbenzene	ND	0.1113	0.0794	71	0.1113	0.0993	89	23	71-129	35	
m,p-Xylenes	ND	0.2227	0.1668	75	0.2227	0.2089	94	22	70-135	35	
o-Xylene	ND	0.1113	0.0762	68	0.1113	0.1050	94	32	71-133	35	X

Lab Batch ID: 735860

QC- Sample ID: 313348-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 10/01/2008

Date Prepared: 09/30/2008

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	C6-C12 Gasoline Range Hydrocarbons	ND	1150	1060	92	1150	1000	87	6	70-135	35
C12-C28 Diesel Range Hydrocarbons	ND	1150	1170	102	1150	1110	97	5	70-135	35	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



# Sample Duplicate Recovery



Project Name: South Red Lake II Unit # 43

Work Order #: 313348

Lab Batch #: 735562

Project ID: Fairway Resources

Date Analyzed: 09/29/2008

Date Prepared: 09/29/2008

Analyst: LATCOR

QC- Sample ID: 313348-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by EPA 300/300.1	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

Lab Batch #: 735506

Analyst: WRU

Date Analyzed: 09/29/2008

Date Prepared: 09/29/2008

QC- Sample ID: 313348-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	13.3	13.2	1	20	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$   
 All Results are based on MDL and validated for QC purposes.





**Environmental Lab of Texas**  
 Variance/ Corrective Action Report- Sample Log-In

Client Basin Env.  
 Date/ Time 9 26 08 14:00  
 Lab ID # 313348  
 Initials AL

**Sample Receipt Checklist**

			Client Initials
#1 Temperature of container/ cooler?	<input checked="" type="checkbox"/> Yes	No	40 °C
#2 Shipping container in good condition?	<input checked="" type="checkbox"/> Yes	No	
#3 Custody Seals intact on shipping container/ cooler?	Yes	No	<del>Not Present</del>
#4 Custody Seals intact on sample bottles/ container?	<input checked="" type="checkbox"/> Yes	No	Not Present
#5 Chain of Custody present?	<input checked="" type="checkbox"/> Yes	No	
#6 Sample instructions complete of Chain of Custody?	<input checked="" type="checkbox"/> Yes	No	
#7 Chain of Custody signed when relinquished/ received?	<input checked="" type="checkbox"/> Yes	No	
#8 Chain of Custody agrees with sample label(s)?	<input checked="" type="checkbox"/> Yes	No	ID written on Cont / Lid
#9 Container label(s) legible and intact?	<input checked="" type="checkbox"/> Yes	No	Not Applicable
#10 Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="checkbox"/> Yes	No	
#11 Containers supplied by ELOT?	<input checked="" type="checkbox"/> Yes	No	
#12 Samples in proper container/ bottle?	<input checked="" type="checkbox"/> Yes	No	See Below
#13 Samples properly preserved?	<input checked="" type="checkbox"/> Yes	No	See Below
#14 Sample bottles intact?	<input checked="" type="checkbox"/> Yes	No	
#15 Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	No	
#16 Containers documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	No	
#17 Sufficient sample amount for indicated test(s)?	<input checked="" type="checkbox"/> Yes	No	See Below
#18 All samples received within sufficient hold time?	<input checked="" type="checkbox"/> Yes	No	See Below
#19 Subcontract of sample(s)?	Yes	No	<del>Not Applicable</del>
#20 VOC samples have zero headspace?	<input checked="" type="checkbox"/> Yes	No	Not Applicable

**Variance Documentation**

Contact \_\_\_\_\_ Contacted by \_\_\_\_\_ Date/ Time \_\_\_\_\_

Regarding \_\_\_\_\_

Corrective Action Taken.

- Check all that Apply:
- See attached e-mail/ fax
  - Client understands and would like to proceed with analysis
  - Cooling process had begun shortly after sampling event

# **Analytical Report 321400**

**for**

## **Basin Environmental Services**

**Project Manager: Curt Stanley**

**South Red Lake II Unit #43**

**Fairway Resources**

**31-DEC-08**



**12600 West I-20 East Odessa, Texas 79765**

Texas certification numbers:

Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX

Florida certification numbers:

Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675  
Norcross(Atlanta), GA E87429

South Carolina certification numbers:

Norcross(Atlanta), GA 98015

North Carolina certification numbers:

Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Tampa - Miami - Latin America  
Midland - Corpus Christi - Atlanta



31-DEC-08

Project Manager: **Curt Stanley**  
**Basin Environmental Services**  
P.O. Box 301  
Lovington, NM 88260

Reference: XENCO Report No: **321400**  
**South Red Lake II Unit #43**  
Project Address: East of Artesia

**Curt Stanley:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 321400. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 321400 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.  
Certified and approved by numerous States and Agencies.  
A Small Business and Minority Status Company that delivers SERVICE and QUALITY  
Houston - Dallas - San Antonio - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America*



**Sample Cross Reference 321400**



**Basin Environmental Services, Lovington, NM**  
South Red Lake II Unit #43

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
Floor #10	S	Dec-29-08 14:00		321400-001
EW #10	S	Dec-29-08 14:05		321400-002
SW #10	S	Dec-29-08 14:10		321400-003
NW #5A	S	Dec-29-08 14:15		321400-004
Floor #5A	S	Dec-29-08 14:20		321400-005
SW #5A	S	Dec-29-08 14:25		321400-006
NW #6A	S	Dec-29-08 14:30		321400-007
Floor #6A	S	Dec-29-08 14:35		321400-008
SW #6A	S	Dec-29-08 14:40		321400-009
NW #8A	S	Dec-29-08 14:45		321400-010
Floor #8A	S	Dec-29-08 14:50		321400-011
SW #8A	S	Dec-29-08 14:55		321400-012
NW #9	S	Dec-29-08 15:00		321400-013
Floor #9	S	Dec-29-08 15:05		321400-014
SW #9	S	Dec-29-08 15:10		321400-015



# Certificate of Analysis Summary 321400

Basin Environmental Services, Lovington, NM

Project Name: South Red Lake II Unit #43



Project Id: Fairway Resources

Contact: Curt Stanley

Project Location: East of Artesia

Date Received in Lab: Tue Dec-30-08 08:45 am

Report Date: 31-DEC-08

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	321400-001	321400-002	321400-003	321400-004	321400-005	321400-006
	<i>Field Id:</i>	Floor #10	EW #10	SW #10	NW #5A	Floor #5A	SW #5A
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-29-08 14:00	Dec-29-08 14:05	Dec-29-08 14:10	Dec-29-08 14:15	Dec-29-08 14:20	Dec-29-08 14:25
<b>Anions by EPA 300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-30-08 12:07					
	<i>Units/RL:</i>	mg/kg    RL					
Chloride		1360    22.8	934    11.4	389    10.9	326    10.3	179    11.6	1610    23.7
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-30-08 17:00					
	<i>Units/RL:</i>	%    RL					
Percent Moisture		12.2	12.6	8.37	3.19	13.7	15.7
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-30-08 09:50					
	<i>Analyzed:</i>	Dec-30-08 13:39	Dec-30-08 14:05	Dec-30-08 14:31	Dec-30-08 14:57	Dec-30-08 15:23	Dec-30-08 15:48
	<i>Units/RL:</i>	mg/kg    RL					
C6-C12 Gasoline Range Hydrocarbons		ND    17.1	ND    17.2	ND    16.4	ND    15.5	ND    17.4	ND    17.8
C12-C28 Diesel Range Hydrocarbons		ND    17.1	ND    17.2	ND    16.4	ND    15.5	ND    17.4	ND    17.8
C28-C35 Oil Range Hydrocarbons		ND    17.1	ND    17.2	ND    16.4	ND    15.5	ND    17.4	ND    17.8
Total TPH		ND    17.1	ND    17.2	ND    16.4	ND    15.5	ND    17.4	ND    17.8

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 Brent Barron  
 Odessa Laboratory Director



# Certificate of Analysis Summary 321400

Basin Environmental Services, Lovington, NM

Project Name: South Red Lake II Unit #43



Project Id: Fairway Resources

Contact: Curt Stanley

Project Location: East of Artesia

Date Received in Lab: Tue Dec-30-08 08:45 am

Report Date: 31-DEC-08

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	321400-007	321400-008	321400-009	321400-010	321400-011	321400-012
	<i>Field Id:</i>	NW #6A	Floor #6A	SW #6A	NW #8A	Floor #8A	SW #8A
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-29-08 14:30	Dec-29-08 14:35	Dec-29-08 14:40	Dec-29-08 14:45	Dec-29-08 14:50	Dec-29-08 14:55
<b>Anions by EPA 300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-30-08 12:07					
	<i>Units/RL:</i>	mg/kg RL					
Chloride		90.0 11.0	ND 5.79	18.9 5.84	46.5 5.67	77.5 11.2	8.03 5.50
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-30-08 17:00					
	<i>Units/RL:</i>	% RL					
Percent Moisture		9.32	13.7	14.4	11.8	11	9.16
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-30-08 09:50					
	<i>Analyzed:</i>	Dec-30-08 16:14	Dec-30-08 16:39	Dec-30-08 17:04	Dec-30-08 17:53	Dec-30-08 18:20	Dec-30-08 18:46
	<i>Units/RL:</i>	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 16.5	ND 17.4	ND 17.5	ND 17.0	ND 16.9	ND 16.5
C12-C28 Diesel Range Hydrocarbons		ND 16.5	ND 17.4	ND 17.5	ND 17.0	ND 16.9	ND 16.5
C28-C35 Oil Range Hydrocarbons		ND 16.5	ND 17.4	ND 17.5	ND 17.0	ND 16.9	ND 16.5
Total TPH		ND 16.5	ND 17.4	ND 17.5	ND 17.0	ND 16.9	ND 16.5

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Brent Barron  
Odessa Laboratory Director



# Certificate of Analysis Summary 321400

Basin Environmental Services, Lovington, NM

Project Name: South Red Lake II Unit #43



Project Id: Fairway Resources

Contact: Curt Stanley

Project Location: East of Artesia

Date Received in Lab: Tue Dec-30-08 08:45 am

Report Date: 31-DEC-08

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	321400-013	321400-014	321400-015			
	<i>Field Id:</i>	NW #9	Floor #9	SW #9			
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Dec-29-08 15 00	Dec-29-08 15:05	Dec-29-08 15 10			
<b>Anions by EPA 300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-30-08 12 07	Dec-30-08 12:07	Dec-30-08 12:07			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		40.8 5.65	49.1 32.0	13.2 5.57			
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-30-08 17 00	Dec-30-08 17:00	Dec-30-08 17 00			
	<i>Units/RL:</i>	% RL	% RL	% RL			
Percent Moisture		11.5	37.5	10.3			
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-30-08 09:50	Dec-30-08 09 50	Dec-30-08 09 50			
	<i>Analyzed:</i>	Dec-30-08 19.12	Dec-30-08 19:39	Dec-30-08 20:06			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
C6-C12 Gasoline Range Hydrocarbons		ND 16.9	ND 24.0	ND 16.7			
C12-C28 Diesel Range Hydrocarbons		ND 16.9	ND 24.0	ND 16.7			
C28-C35 Oil Range Hydrocarbons		ND 16.9	ND 24.0	ND 16.7			
Total TPH		ND 16.9	ND 24.0	ND 16.7			

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Odessa Laboratory Director



# Flagging Criteria



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

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## Form 2 - Surrogate Recoveries

**Project Name: South Red Lake II Unit #43**

**Work Orders :** 321400,

**Project ID:** Fairway Resources

**Lab Batch #:** 745197

**Sample:** 321400-001 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	102	100	102	70-135	
o-Terphenyl	51.7	50.0	103	70-135	

**Lab Batch #:** 745197

**Sample:** 321400-001 S / MS

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	127	100	127	70-135	
o-Terphenyl	54.6	50.0	109	70-135	

**Lab Batch #:** 745197

**Sample:** 321400-001 SD / MSD

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	169	100	169	70-135	**
o-Terphenyl	70.9	50.0	142	70-135	**

**Lab Batch #:** 745197

**Sample:** 321400-002 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	104	100	104	70-135	
o-Terphenyl	52.5	50.0	105	70-135	

**Lab Batch #:** 745197

**Sample:** 321400-003 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**SURROGATE RECOVERY STUDY**

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

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: South Red Lake II Unit #43

Work Orders : 321400,

Project ID: Fairway Resources

Lab Batch #: 745197

Sample: 321400-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	50.4	50.0	101	70-135	

Lab Batch #: 745197

Sample: 321400-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

Lab Batch #: 745197

Sample: 321400-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

Lab Batch #: 745197

Sample: 321400-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	51.3	50.0	103	70-135	

Lab Batch #: 745197

Sample: 321400-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	50.7	50.0	101	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: South Red Lake II Unit #43

Work Orders : 321400,

Project ID: Fairway Resources

Lab Batch #: 745197

Sample: 321400-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	50.8	50.0	102	70-135	

Lab Batch #: 745197

Sample: 321400-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	51.2	50.0	102	70-135	

Lab Batch #: 745197

Sample: 321400-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	51.0	50.0	102	70-135	

Lab Batch #: 745197

Sample: 321400-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.2	100	98	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

Lab Batch #: 745197

Sample: 321400-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	51.0	50.0	102	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: South Red Lake II Unit #43

Work Orders : 321400,

Project ID: Fairway Resources

Lab Batch #: 745197

Sample: 321400-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	53.8	50.0	108	70-135	

Lab Batch #: 745197

Sample: 321400-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	57.4	50.0	115	70-135	

Lab Batch #: 745197

Sample: 522199-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	57.5	50.0	115	70-135	

Lab Batch #: 745197

Sample: 522199-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.5	100	100	70-135	
o-Terphenyl	50.6	50.0	101	70-135	

Lab Batch #: 745197

Sample: 522199-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	62.6	50.0	125	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



# Blank Spike Recovery



Project Name: South Red Lake II Unit #43

Work Order #: 321400

Project ID: Fairway Resources

Lab Batch #: 745192

Sample: 745192-1-BKS

Matrix: Solid

Date Analyzed: 12/30/2008

Date Prepared: 12/30/2008

Analyst: LATCOR

Reporting Units: mg/kg

Batch #: 1

## BLANK /BLANK SPIKE RECOVERY STUDY

Anions by EPA 300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	9.46	95	90-110	

Blank Spike Recovery [D] = 100\*[C]/[B]  
All results are based on MDL and validated for QC purposes.



# BS / BSD Recoveries



**Project Name: South Red Lake II Unit #43**

**Work Order #: 321400**

**Analyst: BHW**

**Lab Batch ID: 745197**

**Sample: 522199-1-BKS**

**Date Prepared: 12/30/2008**

**Batch #: 1**

**Project ID: Fairway Resources**

**Date Analyzed: 12/30/2008**

**Matrix: Solid**

**Units: mg/kg**

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>TPH By SW8015 Mod</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	950	95	1000	940	94	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	993	99	1000	975	98	2	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



# Form 3 - MS Recoveries



Project Name: South Red Lake II Unit #43

Work Order #: 321400

Lab Batch #: 745192

Project ID: Fairway Resources

Date Analyzed: 12/30/2008

Date Prepared: 12/30/2008

Analyst: LATCOR

QC- Sample ID: 321400-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	1360	456	1880	114	80-120	

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

Relative Percent Difference [E] = 200\*(C-A)/(C+B)

All Results are based on MDL and Validated for QC Purposes



# Form 3 - MS / MSD Recoveries



Project Name: South Red Lake II Unit #43

Work Order #: 321400

Project ID: Fairway Resources

Lab Batch ID: 745197

QC- Sample ID: 321400-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/30/2008

Date Prepared: 12/30/2008

Analyst: BHW

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1140	1170	103	1710	1650	96	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1140	1230	108	1710	1770	104	4	70-135	35	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



# Sample Duplicate Recovery



Project Name: South Red Lake II Unit #43

Work Order #: 321400

Lab Batch #: 745192

Project ID: Fairway Resources

Date Analyzed: 12/30/2008

Date Prepared: 12/30/2008

Analyst: LATCOR

QC- Sample ID: 321400-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	1360	1370	1	20	

Lab Batch #: 745177

Date Analyzed: 12/30/2008

Date Prepared: 12/30/2008

Analyst: MOV

QC- Sample ID: 321400-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	12.2	12.3	1	20	

Spike Relative Difference RPD 200 \* |(B-A)/(B+A)|  
All Results are based on MDL and validated for QC purposes.





**Environmental Lab of Texas**  
Variance/ Corrective Action Report- Sample Log-In

Client: Basin Environmental  
 Date/ Time: 12-30-08 @ 0845  
 Lab ID #: 321400  
 Initials: JMM

**Sample Receipt Checklist**

			Client Initials		
#1	Temperature of container/ cooler?	Yes	No	4.0 °C	
#2	Shipping container in good condition?	Yes	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4	Custody Seals intact on sample bottles/ container? / <u>1/1/1</u>	Yes	No	Not Present	
#5	Chain of Custody present?	Yes	No		
#6	Sample instructions complete of Chain of Custody?	Yes	No		
#7	Chain of Custody signed when relinquished/ received?	Yes	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No		
#11	Containers supplied by ELOT?	Yes	No		
#12	Samples in proper container/ bottle?	Yes	No	See Below	
#13	Samples properly preserved?	Yes	No	See Below	
#14	Sample bottles intact?	Yes	No		
#15	Preservations documented on Chain of Custody?	Yes	No		
#16	Containers documented on Chain of Custody?	Yes	No		
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below	
#18	All samples received within sufficient hold time?	Yes	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	Not Applicable	
#20	VOC samples have zero headspace?	Yes	No	Not Applicable	

**Variance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/ Time: \_\_\_\_\_

Regarding \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- Check all that Apply:
- See attached e-mail/ fax
  - Client understands and would like to proceed with analysis
  - Cooling process had begun shortly after sampling event

# **Analytical Report 321559**

**for**

**Basin Environmental Consulting, LLC**

**Project Manager: Curt Stanley**

**Fairway Resources**

**South Red Lake II Unit #43**

**06-JAN-09**



**12600 West I-20 East Odessa, Texas 79765**

Texas certification numbers:

Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX

Florida certification numbers:

Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675

Norcross(Atlanta), GA E87429

South Carolina certification numbers:

Norcross(Atlanta), GA 98015

North Carolina certification numbers:

Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Tampa - Miami - Latin America

Midland - Corpus Christi - Atlanta



06-JAN-09

Project Manager: **Curt Stanley**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **321559**  
**Fairway Resources**  
Project Address: East of Artesia, NM

**Curt Stanley:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 321559. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 321559 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

---

**Brent Barron, II**

Odessa Laboratory Manager

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**Sample Cross Reference 321559**



**Basin Environmental Consulting, LLC, Lovington, NM**  
Fairway Resources

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
EW #1A	S	Dec-30-08 13:00		321559-001
WW #1A	S	Dec-30-08 13:05		321559-002
Floor #1A	S	Dec-30-08 13:10		321559-003
EW #2A	S	Dec-30-08 13:15		321559-004
WW #2A	S	Dec-30-08 13:20		321559-005
Floor #2A	S	Dec-30-08 13:25		321559-006
EW #3A	S	Dec-30-08 13:30		321559-007
WW #3A	S	Dec-30-08 13:35		321559-008
Floor #3A	S	Dec-30-08 13:40		321559-009
EW #4A	S	Dec-30-08 13:45		321559-010
WW #4A	S	Dec-30-08 13:50		321559-011
Floor #4A	S	Dec-30-08 13:55		321559-012
Floor #7A	S	Dec-30-08 14:00		321559-013
Backfill	S	Dec-30-08 14:05		321559-014



**Certificate of Analysis Summary 321559**  
**Basin Environmental Consulting, LLC, Lovington, NM**



**Project Id:** South Red Lake II Unit #43

**Contact:** Curt Stanley

**Project Location:** East of Artesia, NM

**Project Name:** Fairway Resources

**Date Received in Lab:** Wed Dec-31-08 04:10 pm

**Report Date:** 06-JAN-09

**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	321559-001	321559-002	321559-003	321559-004	321559-005	321559-006
	<i>Field Id:</i>	EW #1A	WW #1A	Floor #1A	EW #2A	WW #2A	Floor #2A
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-30-08 13:00	Dec-30-08 13:05	Dec-30-08 13:10	Dec-30-08 13:15	Dec-30-08 13:20	Dec-30-08 13:25
<b>Anions by EPA 300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jan-05-09 14:05					
	<i>Units/RL:</i>	mg/kg RL					
Chloride		2160 28.7	692 11.7	2520 22.8	4620 58.5	4010 56.9	3940 58.8
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jan-05-09 12:12					
	<i>Units/RL:</i>	% RL					
Percent Moisture		13.03 1.00	14.19 1.00	12.17 1.00	14.49 1.00	12.19 1.00	14.96 1.00
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Jan-05-09 10:30					
	<i>Analyzed:</i>	Jan-05-09 11:31	Jan-05-09 11:54	Jan-05-09 12:17	Jan-05-09 12:41	Jan-05-09 13:04	Jan-05-09 13:28
	<i>Units/RL:</i>	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 17.2	ND 17.5	ND 17.1	354 17.5	ND 17.1	ND 17.6
C12-C28 Diesel Range Hydrocarbons		ND 17.2	ND 17.5	83.0 17.1	1450 17.5	ND 17.1	ND 17.6
C28-C35 Oil Range Hydrocarbons		ND 17.2	ND 17.5	ND 17.1	206 17.5	ND 17.1	ND 17.6
Total TPH		ND 17.2	ND 17.5	83 17.1	2010 17.5	ND 17.1	ND 17.6

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

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 Brent Barron  
 Odessa Laboratory Director



**Certificate of Analysis Summary 321559**  
**Basin Environmental Consulting, LLC, Lovington, NM**



**Project Id:** South Red Lake II Unit #43

**Contact:** Curt Stanley

**Project Location:** East of Artesia, NM

**Project Name:** Fairway Resources

**Date Received in Lab:** Wed Dec-31-08 04:10 pm

**Report Date:** 06-JAN-09

**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	321559-007	321559-008	321559-009	321559-010	321559-011	321559-012
	<i>Field Id:</i>	EW #3A	WW #3A	Floor #3A	EW #4A	WW #4A	Floor #4A
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-30-08 13:30	Dec-30-08 13:35	Dec-30-08 13:40	Dec-30-08 13:45	Dec-30-08 13:50	Dec-30-08 13:55
<b>Anions by EPA 300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jan-05-09 14:05					
	<i>Units/RL:</i>	mg/kg RL					
Chloride		3910 57.3	4770 58.4	4690 57.9	335 12.0	444 11.4	1280 22.6
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jan-05-09 12:12					
	<i>Units/RL:</i>	% RL					
Percent Moisture		12.81 1.00	14.41 1.00	13.60 1.00	16.39 1.00	12.00 1.00	11.31 1.00
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Jan-05-09 10:30					
	<i>Analyzed:</i>	Jan-05-09 13:52	Jan-05-09 14:15	Jan-05-09 14:39	Jan-06-09 10:33	Jan-05-09 15:49	Jan-05-09 16:13
	<i>Units/RL:</i>	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 17.2	ND 17.5	659 17.4	ND 17.9	ND 17.0	ND 16.9
C12-C28 Diesel Range Hydrocarbons		ND 17.2	ND 17.5	2310 17.4	ND 17.9	ND 17.0	ND 16.9
C28-C35 Oil Range Hydrocarbons		ND 17.2	ND 17.5	313 17.4	ND 17.9	ND 17.0	ND 16.9
Total TPH		ND 17.2	ND 17.5	3282 17.4	ND 17.9	ND 17.0	ND 16.9

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 Brent Barron  
 Odessa Laboratory Director



**Certificate of Analysis Summary 321559**  
**Basin Environmental Consulting, LLC, Lovington, NM**



**Project Id:** South Red Lake II Unit #43

**Contact:** Curt Stanley

**Project Location:** East of Artesia, NM

**Project Name:** Fairway Resources

**Date Received in Lab:** Wed Dec-31-08 04:10 pm

**Report Date:** 06-JAN-09

**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	321559-013	321559-014				
	<i>Field Id:</i>	Floor #7A	Backfill				
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL				
	<i>Sampled:</i>	Dec-30-08 14:00	Dec-30-08 14:05				
<b>Anions by EPA 300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jan-05-09 14:05	Jan-05-09 14:05				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
Chloride		363 11.6	369 11.4				
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jan-05-09 12:12	Jan-05-09 12:12				
	<i>Units/RL:</i>	% RL	% RL				
Percent Moisture		13.95 1.00	12.36 1.00				
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Jan-05-09 10:30	Jan-05-09 10:30				
	<i>Analyzed:</i>	Jan-05-09 16:36	Jan-05-09 17:00				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 17.4	ND 17.1				
C12-C28 Diesel Range Hydrocarbons		ND 17.4	ND 17.1				
C28-C35 Oil Range Hydrocarbons		ND 17.4	ND 17.1				
Total TPH		ND 17.4	ND 17.1				

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**Brent Barron**  
 Odessa Laboratory Director



# Flagging Criteria



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

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9701 Harry Hines Blvd, Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lanc, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



# Form 2 - Surrogate Recoveries

Project Name: Fairway Resources

Work Orders : 321559,

Project ID: South Red Lake II Unit #43

Lab Batch #: 745566

Sample: 321559-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	103	100	103	70-135	
o-Terphenyl	51.8	50.0	104	70-135	

Lab Batch #: 745566

Sample: 321559-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	103	100	103	70-135	
o-Terphenyl	51.9	50.0	104	70-135	

Lab Batch #: 745566

Sample: 321559-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	25.6	100	26	70-135	**
o-Terphenyl	8.34	50.0	17	70-135	**

Lab Batch #: 745566

Sample: 321559-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	26.6	100	27	70-135	**
o-Terphenyl	8.58	50.0	17	70-135	**

Lab Batch #: 745566

Sample: 321559-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
l-Chlorooctane	102	100	102	70-135	
o-Terphenyl	52.8	50.0	106	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: Fairway Resources

Work Orders : 321559,

Project ID: South Red Lake II Unit #43

Lab Batch #: 745566

Sample: 321559-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	57.9	50.0	116	70-135	

Lab Batch #: 745566

Sample: 321559-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	52.3	50.0	105	70-135	

Lab Batch #: 745566

Sample: 321559-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	52.3	50.0	105	70-135	

Lab Batch #: 745566

Sample: 321559-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	51.7	50.0	103	70-135	

Lab Batch #: 745566

Sample: 321559-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	51.6	50.0	103	70-135	

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

\*\*\* Poor recoveries due to dilution

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

All results are based on MDL and validated for QC purposes



# Form 2 - Surrogate Recoveries

Project Name: Fairway Resources

Work Orders : 321559,

Project ID: South Red Lake II Unit #43

Lab Batch #: 745566

Sample: 321559-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	57.4	50.0	115	70-135	

Lab Batch #: 745566

Sample: 321559-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	54.9	50.0	110	70-135	

Lab Batch #: 745566

Sample: 321559-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	52.5	50.0	105	70-135	

Lab Batch #: 745566

Sample: 321559-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	52.5	50.0	105	70-135	

Lab Batch #: 745566

Sample: 321559-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	51.5	50.0	103	70-135	

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: Fairway Resources

Work Orders : 321559,

Project ID: South Red Lake II Unit #43

Lab Batch #: 745566

Sample: 321559-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

### SURROGATE RECOVERY STUDY

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

Lab Batch #: 745566

Sample: 522434-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	100	117	70-135	
o-Terphenyl	57.3	50.0	115	70-135	

Lab Batch #: 745566

Sample: 522434-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	52.2	50.0	104	70-135	

Lab Batch #: 745566

Sample: 522434-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	61.5	50.0	123	70-135	

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

\*\*\* Poor recoveries due to dilution

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

All results are based on MDL and validated for QC purposes



# Blank Spike Recovery



**Project Name: Fairway Resources**

**Work Order #: 321559**

**Project ID: South Red Lake II Unit #43**

**Lab Batch #: 745513**

**Sample: 745513-1-BKS**

**Matrix: Solid**

**Date Analyzed: 01/05/2009**

**Date Prepared: 01/05/2009**

**Analyst: LATCOR**

**Reporting Units: mg/kg**

**Batch #: 1**

## BLANK /BLANK SPIKE RECOVERY STUDY

Anions by EPA 300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	10.2	102	90-110	

Blank Spike Recovery [D] = 100\*[C]/[B]

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



# BS / BSD Recoveries



**Project Name: Fairway Resources**

**Work Order #: 321559**

**Analyst: BHW**

**Date Prepared: 01/05/2009**

**Project ID: South Red Lake II Unit #43**

**Date Analyzed: 01/05/2009**

**Lab Batch ID: 745566**

**Sample: 522434-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
<b>Analytes</b>											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	954	95	1000	959	96	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1020	102	1000	1050	105	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



# Form 3 - MS Recoveries



Project Name: Fairway Resources

Work Order #: 321559  
Lab Batch #: 745513  
Date Analyzed: 01/05/2009  
QC- Sample ID: 321559-001 S  
Reporting Units: mg/kg

Date Prepared: 01/05/2009  
Batch #: 1

Project ID: South Red Lake II Unit #43  
Analyst: LATCOR  
Matrix: Soil

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	2160	575	2690	92	80-120	

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



# Form 3 - MS / MSD Recoveries



Project Name: Fairway Resources

Work Order #: 321559

Project ID: South Red Lake II Unit #43

Lab Batch ID: 745566

QC- Sample ID: 321559-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/05/2009

Date Prepared: 01/05/2009

Analyst: BHW

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	C6-C12 Gasoline Range Hydrocarbons	ND	1170	1120	96	1170	1150	98	2	70-135	35
C12-C28 Diesel Range Hydrocarbons	ND	1170	1180	101	1170	1220	104	3	70-135	35	

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



# Sample Duplicate Recovery



Project Name: Fairway Resources

Work Order #: 321559

Lab Batch #: 745513

Project ID: South Red Lake II Unit #43

Date Analyzed: 01/05/2009

Date Prepared: 01/05/2009

Analyst: LATCOR

QC- Sample ID: 321559-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	2160	2130	1	20	

Lab Batch #: 745434

Date Analyzed: 01/05/2009

Date Prepared: 01/05/2009

Analyst: BEV

QC- Sample ID: 321559-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	13.0	12.7	3	20	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$   
 All Results are based on MDL and validated for QC purposes.





**Environmental Lab of Texas**  
Variance/ Corrective Action Report- Sample Log-In

Client: Basin Environmental  
 Date/ Time: 12-31-08 @ 16:10  
 Lab ID #: 321559  
 Initials: JMF

**Sample Receipt Checklist**

	Yes	No	Client Initials
#1 Temperature of container/ cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.0 °C
#2 Shipping container in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(N/A)
#3 Custody Seals intact on shipping container/ cooler?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Present (N/A)
#4 Custody Seals intact on sample bottles/ container? / label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Present
#5 Chain of Custody present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#6 Sample instructions complete of Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#7 Chain of Custody signed when relinquished/ received?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#8 Chain of Custody agrees with sample label(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ID written on Cont./ Lid
#9 Container label(s) legible and intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Applicable
#10 Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#11 Containers supplied by ELOT?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#12 Samples in proper container/ bottle?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Below
#13 Samples properly preserved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Below
#14 Sample bottles intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#15 Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#16 Containers documented on Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
#17 Sufficient sample amount for indicated test(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Below
#18 All samples received within sufficient hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Below
#19 Subcontract of sample(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Applicable
#20 VOC samples have zero headspace?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Applicable

**Variance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/ Time: \_\_\_\_\_

Regarding \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

- Check all that Apply:
- See attached e-mail/ fax
  - Client understands and would like to proceed with analysis
  - Cooling process had begun shortly after sampling event

Appendix B  
Photographs

Appendix C  
Release Notification and Corrective Action  
(Form C-141)

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

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

JUN 20 2008  
OCD-ARTESIA

Form C-141  
Revised October 10, 2003  
Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

**Release Notification and Corrective Action**

ISEB0819256396  
NSEB0819256221

**OPERATOR**  Initial Report  Final Report

Name of Company	Fairway Resources Operating LLC 241598	Contact	Kenneth Pearce
Address	538 Silicon Drive, Suite 101, Southlake, TX 76092	Telephone No.	817-416-1946
Facility Name	South Red Lake II Unit #43 30-015-23913	Facility Type	oil well
Surface Owner	State of New Mexico	Mineral Owner	State of New Mexico
		Lease No.	NM109695X

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
"K"	36	17-S	27-E	1,650	South	1,650	West	Eddy

Latitude 32.7877800 Longitude -104.2350200

**NATURE OF RELEASE**

Type of Release	Produced water and crude oil	Volume of Release	25 bbls est.	Volume Recovered	20 bbls est.
Source of Release	Flowline leak near the wellhead	Date and Hour of Occurrence	6/16/08 unknown time	Date and Hour of Discovery	6/17/08 8:00am
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?			
By Whom?	Kenneth Pearce	Date and Hour 6/17/08			
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			
If a Watercourse was Impacted. Describe Fully.*					
Describe Cause of Problem and Remedial Action Taken.*					
A leak developed in a steel nipple at the wellhead flowline connection. The nipple was replaced, repairing the leak.					
Describe Area Affected and Cleanup Action Taken.*					
The affected area was the well location, lease road, and area immediately along the lease road.					
All free-standing liquids were picked-up with a vacuum truck and transported to the central facility. A remediation work plan will be prepared and submitted for approval within 30 days of this notification.					
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.					

Signature: <i>Kenneth Pearce</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Kenneth Pearce	Approved by District Supervisor: <i>Tamm</i>	Remediation Actions to be completed and Final C-141 submitted with confirmation analyses/documentation on or before the Expiration Date.
Title: Operations Engineer	Approval Date: <i>7-10-08</i>	Expiration Date: <i>9-12-08</i>
E-mail Address: kpearce@fairwayresources.com	Conditions of Approval:	
Date: June 17, 2008 Phone: 817-416-1946	Attached <input type="checkbox"/> <b>2RP-188</b>	

\* Attach Additional Sheets If Necessary  
ISEB0819256504

The plan must include general site characteristics, site ranking score, soil remediation action levels, soil remediation methods, and planned analytical testing for TPH, B-TEX, Chlorides or any other COCs as applicable. Please use the "Guidelines for Remediation of Leaks, Spills, & Releases" as your guide. This document may be found at the following link:  
[http://www.emnrd.state.nm.us/ocd/documents/7C\\_spill.pdf](http://www.emnrd.state.nm.us/ocd/documents/7C_spill.pdf)

Notify OCD 48 hours prior to obtaining samples where analyses are to be presented to OCD

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

State of New Mexico  
Energy Minerals and Natural Resources

JUN 26 2009

Form C-141  
Revised October 10, 2003

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

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

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company	Fairway Resources Operating, LLC	Contact	Jay Pulte
Address	538 Silicon Drive, Ste. 101, Southlake, Texas 76092	Telephone No.	(817) 416-1946
Facility Name	South Red Lake II Unit #43	Facility Type	Oil Well
Surface Owner	State of New Mexico	Mineral Owner	State of New Mexico
		Lease No.	NM10695X

3001523913

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
"K"	36	17S	27E	1,650'	South	1,650'	West	Eddy

Latitude 32.7877800° North

Longitude 104.2350200° West

**NATURE OF RELEASE**

Type of Release	Produced Water and Crude Oil	Volume of Release	25 bbls (est.)	Volume Recovered	20 bbls (est.)
Source of Release	Flowline Release Near Wellhead	Date and Hour of Occurrence	06/16/08 @ unknown time	Date and Hour of Discovery	06/17/08 - 0800 hours
Was Immediate Notice Given?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required <input type="checkbox"/>	If YES, To Whom?			
By Whom?	Date and Hour				
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken:

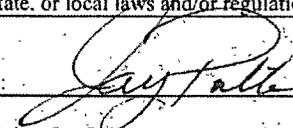
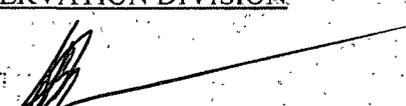
A steel nipple failed at the wellhead flowline connection. Free liquids were recovered and transported to the central facility using a vacuum truck. Following mitigation of the release, the nipple was replaced.

Describe Area Affected and Cleanup Action Taken:

Approximately 2,830 cubic yards of impacted soil was excavated, stockpiled and transported to Lea Land Landfill (Permit #NM-01-0035) for disposal. Confirmation soil samples were collected and submitted to the laboratory for analysis. With NMOCD Artesia Office approval a risk-based site closure was employed, utilizing a polyethylene liner. Following the installation of the liner, the excavation was backfilled with locally purchased native soil. A Remediation Summary and Site Closure Request dated May 2009 was submitted to the NMOCD Artesia Office and contains additional details and documentation not contained in this document.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases, which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

**OIL CONSERVATION DIVISION**

Signature: 	Approved by District Supervisor: 	
Printed Name: Jay Pulte	Approval Date: 6-29-09	Expiration Date: N/A
Title: Operations Engineer	Conditions of Approval: N/A	
E-mail Address: jpulte@fairwayresources.com	2RP-0188	
Date: 6/24/09	Phone: (817) 416-1946	