Closure Report

Prepared for
Oxy USA

Roaring Springs 13 Fed #4 Flowline Leak
Site #1 and Site #2
Eddy County, NM

2RP-259

Prepared by
Elke Environmental, Inc.
P.O. Box 14167 Odessa, TX 79768
Phone (432) 366-0043 Fax (432) 366-0884

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

Form C-141
Revised October 10, 2003

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

30-015-29350

Release Notification and Corrective Action

nSEB 0830232978

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company – Oxy USA 192463	Contact – Kelton Beaird
Address – P O Box 1988 Carlsbad, NM 88220	Telephone No. – off 575-628-4121 cell 575-390-1903
Facility Name – Roaring Springs 13 Fed #4	Facility Type - Flowline

Surface Owner - BLM	Mineral Owner - BLM	Lease No. 30-015-29350

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	13	21S	23E					Eddy

Latitude 32° 28.794' N **Longitude** 104° 33.548' W

NATURE OF RELEASE

Type of Release – Produced Water and Oil	Volume of Release 15bbls Water 1bbls Oil	Volume Recovered – 12 bbls Water 1bbls Oil
Source of Release – Steel Flowline	Date and Hour of Occurrence 10-6-08	Date and Hour of Discovery 10-6-08 @ 4:00pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Sherry Bohnam (NMOCD) Jim Amos (BLM)	
By Whom? Kelton Beaird – HES Oxy	Date and Hour - See above	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Corrosion caused the steel flowline to leak into pasture. The well was shut-in to prevent any further contamination. The steel flowline was replaced with a poly line. There are 2 different visible stains at the surface and will be treated as two leaks. A vertical and horizontal delineation was performed at each site and work-plans were approved for each site.

Describe Area Affected and Cleanup Action Taken.* Site #1 – All impacted soil was excavated to hard rock and hauled to Lea Land Disposal. Clean native soil was backfilled into the excavation and the site was seeded with BLM Seed Mixture #3.

Site #2 – All impacted soil was excavated to 4' bgs and hauled to Lea Land Disposal. A 20 mil poly liner was installed at 4' bgs with 4 oz. Geotextile Liner above and below the poly liner. Clean native soil was backfilled into the excavation and the site was seeded with BLM Seed Mixture #3.

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:

Printed Name: Kelton Beaird

Title: HES Specialist

E-mail Address: kelton_beaird@oxy.com

Date: 7-2-09 Phone: 575-628-4121

OIL CONSERVATION DIVISION

Signed By Mike Bratcher

Approved by District Supervisor:

Approval Date: JUL 24 2009 Expiration Date: N/A

Conditions of Approval: N/A Attached ☐

* Attach Additional Sheets If Necessary

2RP-259

Elke Environmental, Inc.

P.O. Box 14167 Odessa, TX 79768
Phone (432) 366-0043 Fax (432) 366-0884

July 2, 2009

New Mexico Oil Conservation Division
Mr. Mike Bratcher
1301 West Grand Ave.
Artesia, New Mexico 88210

Re: Oxy USA – Roaring Springs 13 Fed #4 Flowline
UL'C' Sec. 13 T21S R23E Eddy County
2RP-259

Mr. Mike Bratcher,

Elke Environmental was contracted by Oxy USA to complete the remediation of the leaks at the Roaring Springs 13 Fed #4 Flowline. A delineation of both sites was completed using a backhoe. At Site #1 during the vertical delineation very hard rock was encountered at 7' depths in the site that was impenetrable by the backhoe. 8' samples were obtained using a pickax. As per the conversation between Sherry Bohnam (NMOCD) and Logan Anderson (Elke) the impacted soil was excavated to the rock and hauled to Lea Land Disposal. Clean Soil was backfilled into the excavation and seeded with BLM Seed Mixture #4.

At Site #2 during the vertical delineation hard rock was encountered at various depths that was impenetrable by the backhoe. A borehole was drilled at the battery of the Roaring Springs 13 Fed #4 which is approximately 900' South of the leak site. The borehole was drilled to 96' deep and encountered a rock formation that was impenetrable by the drill rig at the site. No water bearing formations were encountered within the 96' borehole. As per the conversation between Mike Bratcher (NMOCD) and Logan Anderson (Elke) the impacted soil was excavated to 4' bgs and hauled to Lea Land Disposal. A 20 mil poly liner was installed at 4' bgs with 4 oz. Geotextile Liner above and below the poly liner. Clean native soil was backfilled and the site was seeded with BLM Seed Mixture 3. Attached are plat maps, field analytical, lab confirmations, driller's log, disposal manifests and pictures of the site. If you have any questions about the enclosed report please contact me at the office.

Sincerely,

Logan Anderson

Roaring Springs 13 Fed #4 Flowline Leak

Site #1

Oxy USA

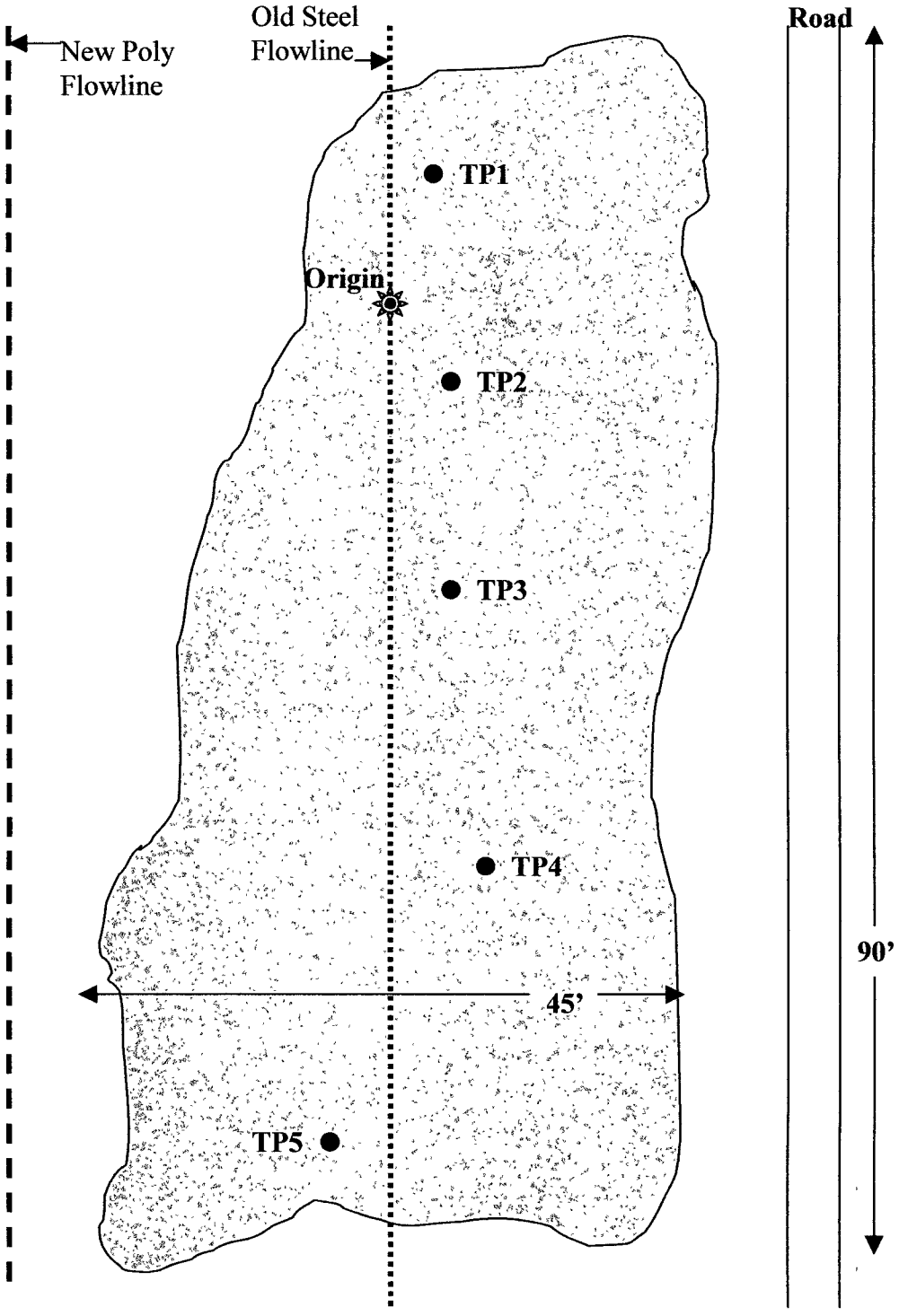
Roaring Springs 13 Fed #4 Flowline (Site #1)

UL 'C' Sec. 13 T21S R23E

Eddy County, NM

N

Plat Map



Elke Environmental, Inc.
P.O. Box 14167 Odessa, TX 79768

Field Analytical Report Form

Client Oxy USA **Analyst** Curtis Elam

Site Roaring Springs 13 Fed #4 Flowline (Site #1)

Sample ID	Date	Depth	TPH / PPM	Cl / PPM	PID / PPM	GPS
TP1	12-10-09	2'	72	1,000	0.0	32° 48.384' N 104° 55.980' W
TP1	12-10-09	4'	53	1,400	0.0	32° 48.384' N 104° 55.980' W
TP1	12-10-09	6'	44	250	0.0	32° 48.384' N 104° 55.980' W
TP2	12-10-09	2'	58	1,200	0.0	32° 48.384' N 104° 55.979' W
TP2	12-10-09	4'	62	800	0.0	32° 48.384' N 104° 55.979' W
TP2	12-10-09	6'	23	80	0.0	32° 48.384' N 104° 55.979' W
TP3	12-10-09	2'	51	1,000	0.0	32° 48.384' N 104° 55.978' W
TP3	12-10-09	4'	47	1,250	0.0	32° 48.384' N 104° 55.978' W
TP3	12-10-09	6'	42	700	0.0	32° 48.384' N 104° 55.978' W
TP3	12-10-09	8'	29	603	0.0	32° 48.384' N 104° 55.978' W
TP4	12-10-09	2'	42	1,200	0.0	32° 48.377' N 104° 55.961' W
TP4	12-10-09	4'	88	1,450	0.0	32° 48.377' N 104° 55.961' W
TP4	12-10-09	6'	63	2,750	0.0	32° 48.377' N 104° 55.961' W
TP4	12-10-09	8'	41	550	0.0	32° 48.377' N 104° 55.961' W
TP5	12-10-09	2'	48	2,700	0.0	32° 48.378' N 104° 55.961' W
TP5	12-10-09	4'	45	1,010	0.0	32° 48.378' N 104° 55.961' W
TP5	12-10-09	6'	37	1,400	0.0	32° 48.378' N 104° 55.961' W

Analyst Notes Hard rock encountered at 7' that is impenetrable by backhoe. Used pickax to obtain 8' samples.

Elke Environmental, Inc.
P.O. Box 14167 Odessa, TX 79768

Field Analytical Report Form

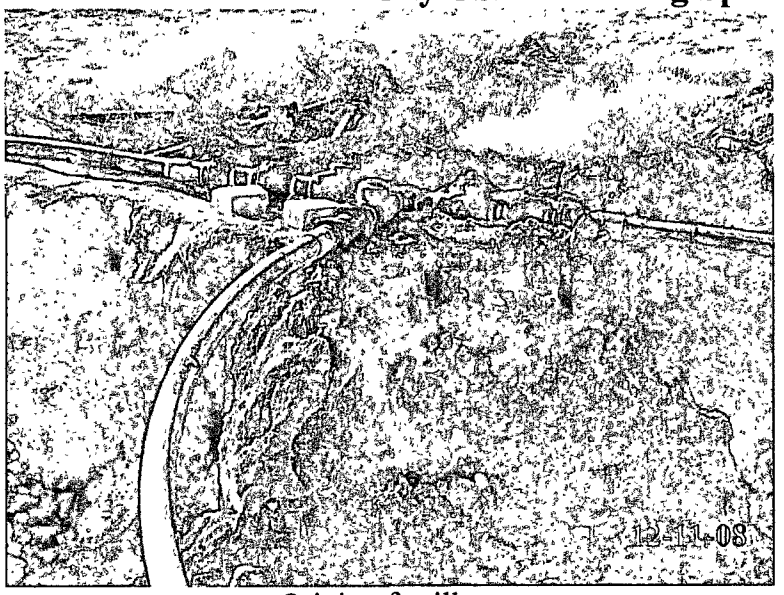
Client Oxy USA **Analyst** Curtis Elam

Site Roaring Springs 13 Fed #4 Flowline (Site #1)

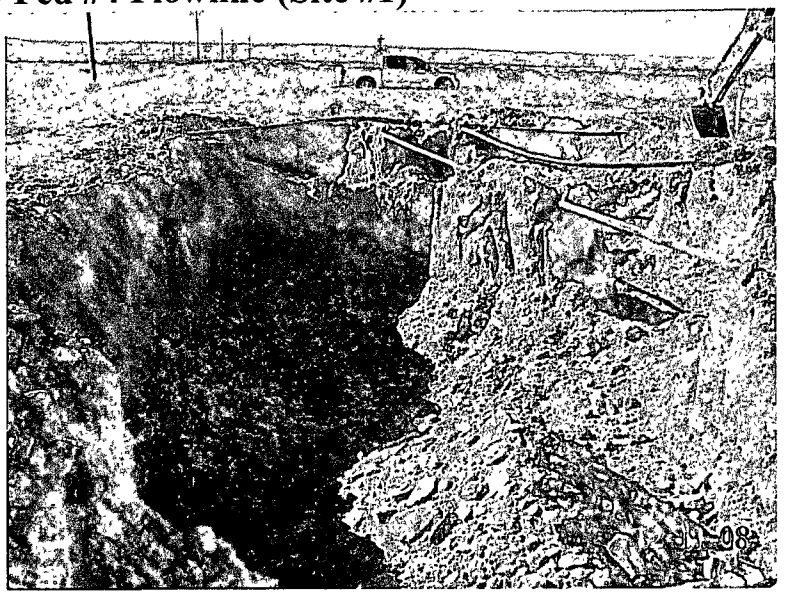
Sample ID	Date	Depth	TPH / PPM	Cl / PPM	PID / PPM	GPS
TP5	12-10-09	8'	51	515	0.0	32° 48.378' N 104° 55.961' W
North Wall	12-10-09	4'	33	147	0.0	32° 48.385' N 104° 55.975' W
South Wall	12-10-09	4'	87	133	0.0	32° 48.375' N 104° 55.975' W
East Wall	12-10-09	4'	46	213	0.0	32° 48.380' N 104° 55.960' W
West Wall	12-10-09	4'	59	199	0.0	32° 48.380' N 104° 55.981' W

Analyst Notes

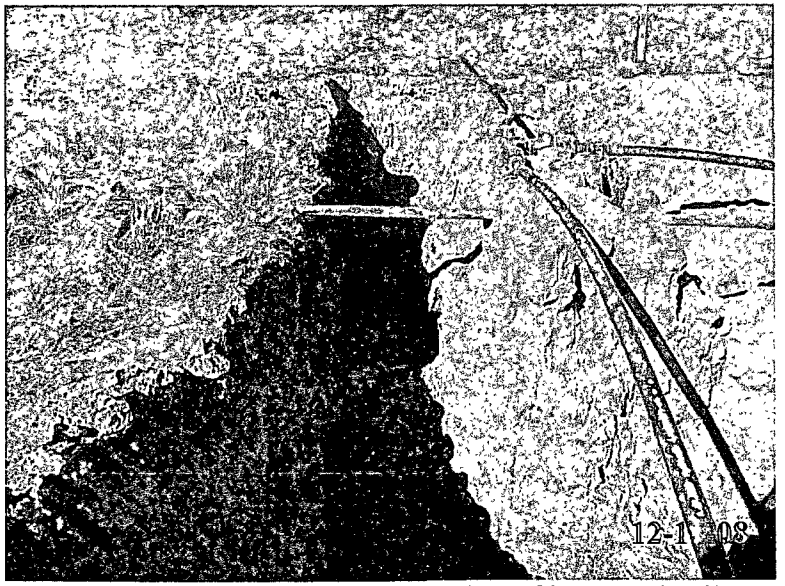
Oxy USA – Roaring Springs 13 Fed #4 Flowline (Site #1)



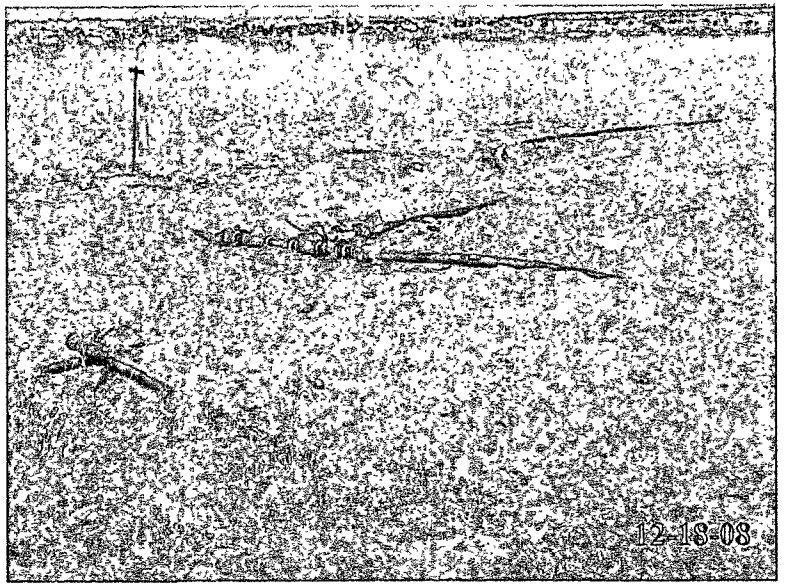
Origin of spill.



TP4 and TP5 after excavation of impacted soil.



TP1, TP2 and TP3 after excavation of impacted soil.



Site after backfill of clean native soil and seeding.

Analytical Report 320896

for

Elke Environmental, Inc.

Project Manager: Logan Anderson

Oxy

24-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

24-DEC-08

Project Manager: **Logan Anderson**
Elke Environmental, Inc.
4817 Andrews Hwy
P.O. Box 14167 Odessa, tx 79768
Odessa, TX 79762

Reference: XENCO Report No: **320896**
Oxy
Project Address: Roaring Spring's 13 Fed # 4 Site # 1

Logan Anderson:

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 320896. 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. 320896 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

Sample Cross Reference 320896

Elke Environmental, Inc., Odessa, TX

Oxy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TP1 @ 6'	S	Dec-10-08 11:00	6 ft	320896-001
TP2 @ 6'	S	Dec-10-08 11:30	6 ft	320896-002
TP3 @ 8'	S	Dec-10-08 12:00	8 ft	320896-003
TP4 @ 8'	S	Dec-10-08 12:30	8 ft	320896-004
TP5 @ 8'	S	Dec-10-08 13:00	8 ft	320896-005

Certificate of Analysis Summary 320896

Elke Environmental, Inc., Odessa, TX

Project Name: Oxy

Project Id:

Contact: Logan Anderson

Project Location: Roaring Spring's 13 Fed # 4 Site # 1

Date Received in Lab: Fri Dec-19-08 01:45 pm

Report Date: 24-DEC-08

Project Manager: Brent Barron, II

Analysis Requested											
	Lab Id:	320896-001		320896-002		320896-003		320896-004		320896-005	
	Field Id:	TP1 @ 6'		TP2 @ 6'		TP3 @ 8'		TP4 @ 8'		TP5 @ 8'	
	Depth:	6 ft		6 ft		8 ft		8 ft		8 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-10-08 11:00		Dec-10-08 11:30		Dec-10-08 12:00		Dec-10-08 12:30		Dec-10-08 13:00	
Anions by EPA 300	*Extracted:*										
	Analyzed:	Dec-20-08 04:31		Dec-20-08 04:31		Dec-20-08 04:31		Dec-20-08 04:31		Dec-20-08 04:31	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		35.9	5.47	6.24	5.61	119	5.32	379	10.5	27.8	5.27
Percent Moisture	*Extracted:*										
	Analyzed:	Dec-19-08 17:00		Dec-19-08 17:00		Dec-19-08 17:00		Dec-19-08 17:00		Dec-19-08 17:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		8.57	1.00	10.86	1.00	6.05	1.00	5.07	1.00	5.08	1.00
TPH By SW8015 Mod	*Extracted:*	Dec-22-08 11:30		Dec-22-08 11:30		Dec-22-08 15:30		Dec-22-08 15:30		Dec-22-08 15:30	
	Analyzed:	Dec-23-08 20:08		Dec-23-08 20:33		Dec-23-08 15:31		Dec-23-08 15:58		Dec-23-08 16:24	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	16.4	ND	16.8	ND	16.0	ND	15.8	ND	15.8
C12-C28 Diesel Range Hydrocarbons		ND	16.4	ND	16.8	ND	16.0	ND	15.8	ND	15.8
C28-C35 Oil Range Hydrocarbons		ND	16.4	ND	16.8	ND	16.0	ND	15.8	ND	15.8
Total TPH		ND	16.4	ND	16.8	ND	16.0	ND	15.8	ND	15.8

Brent Barron
Odessa Laboratory Director

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.

Form 2 - Surrogate Recoveries

Project Name: Oxy

Work Orders : 320896,

Project ID:

Lab Batch #: 744634 **Sample:** 320838-019 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	54.5	50.0	109	70-135	

Lab Batch #: 744634 **Sample:** 320838-019 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	43.8	50.0	88	70-135	

Lab Batch #: 744634 **Sample:** 320896-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

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

Lab Batch #: 744634 **Sample:** 320896-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	57.3	50.0	115	70-135	

Lab Batch #: 744634 **Sample:** 521821-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	52.7	50.0	105	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: Oxy

Work Orders : 320896,

Project ID:

Lab Batch #: 744634 **Sample:** 521821-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	57.1	50.0	114	70-135	

Lab Batch #: 744634 **Sample:** 521821-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	50.9	50.0	102	70-135	

Lab Batch #: 744640 **Sample:** 320896-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	54.1	50.0	108	70-135	

Lab Batch #: 744640 **Sample:** 320896-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	52.5	50.0	105	70-135	

Lab Batch #: 744640 **Sample:** 320896-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	54.3	50.0	109	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: Oxy

Work Orders : 320896,

Project ID:

Lab Batch #: 744640 **Sample:** 320897-005 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	59.9	50.0	120	70-135	

Lab Batch #: 744640 **Sample:** 320897-005 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	61.2	50.0	122	70-135	

Lab Batch #: 744640 **Sample:** 521824-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	57.8	50.0	116	70-135	

Lab Batch #: 744640 **Sample:** 521824-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	54.7	50.0	109	70-135	

Lab Batch #: 744640 **Sample:** 521824-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	63.2	50.0	126	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: Oxy

Work Order #: 320896 **Project ID:**

Lab Batch #: 744262 **Sample:** 744262-1-BKS **Matrix:** Solid

Date Analyzed: 12/20/2008 **Date Prepared:** 12/20/2008 **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	10.1	101	80-120	

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

BS / BSD Recoveries

Project Name: Oxy

Work Order #: 320896 **Project ID:**

Analyst: BHW **Date Prepared:** 12/22/2008 **Date Analyzed:** 12/23/2008

Lab Batch ID: 744634 **Sample:** 521821-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

TPH By SW8015 Mod	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	941	94	1000	947	95	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1110	111	1000	1100	110	1	70-135	35	

Analyst: BHW **Date Prepared:** 12/22/2008 **Date Analyzed:** 12/23/2008

Lab Batch ID: 744640 **Sample:** 521824-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

TPH By SW8015 Mod	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	988	99	1000	964	96	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1050	105	1000	1000	100	5	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: Oxy

Work Order #: 320896

Lab Batch #: 744262

Project ID:

Date Analyzed: 12/20/2008 **Date Prepared:** 12/20/2008 **Analyst:** LATCOR

QC- Sample ID: 320893-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	135	105	240	100	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: Oxy

Work Order # : 320896 **Project ID:**

Lab Batch ID: 744634 **QC- Sample ID:** 320838-019 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/23/2008 **Date Prepared:** 12/22/2008 **Analyst:** BHW

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	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	1040	1000	96	1040	865	83	15	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1040	1150	111	1040	989	95	16	70-135	35	

Lab Batch ID: 744640 **QC- Sample ID:** 320897-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/23/2008 **Date Prepared:** 12/22/2008 **Analyst:** BHW

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	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	1020	959	94	1020	942	92	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1020	1020	100	1020	1010	99	1	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 ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: Oxy

Work Order #: 320896

Lab Batch #: 744262 **Project ID:**

Date Analyzed: 12/20/2008 **Date Prepared:** 12/20/2008 **Analyst:** LATCOR

QC- Sample ID: 320893-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Anions by EPA 300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	135	135	0	20	

Lab Batch #: 744268

Date Analyzed: 12/19/2008 **Date Prepared:** 12/19/2008 **Analyst:** MOV

QC- Sample ID: 320887-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	10.1	10.0	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

A Xenco Laboratories Company

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Logan Anderson

Company Name: Elke Environmental

Company Address: P O Box 14167

City/State/Zip: Odessa, TX 79768

Telephone No: 432-366-0043

Fax No: 432-366-0884

Sampler Signature: [signature]

e-mail: la_elkeenv@yahoo.com

Project Name: Oxy

Project #:

Project Loc: Lowry Spring's 13 Fd #4 site #1

PO #:

Report Format: ☐ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 320856

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix (DW=Drinking Water SL=Sludge, GW=Groundwater S=Soil/Solid, NP=Non-Potable Specify Other)	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.				RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
01	TP1 @ 6'		6'	12-10	11:00AM		1	✓								S	✓			✓												✓
02	TP2 @ 6'		6'	12-10	11:30AM		1	✓								S	✓			✓												✓
03	TP3 @ 8'		8'	12-10	12 PM		1	✓								S	✓			✓												✓
04	TP4 @ 8'		8'	12-10	12:30PM		1	✓								S	✓			✓												✓
05	TP5 @ 8'		8'	12-10	1:00PM		1	✓								S	✓			✓												✓

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	12.14	1:45			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Andrea Perr	12.14.08	1:45

Laboratory Comments:

Sample Containers Intact?	(Y)	N
VOCs Free of Headspace?	Y	(N/A)
Labels on container(s)	(Y)	N
Custody seals on container(s)	(Y)	N
Custody seals on cooler(s)	Y	(N)
Sample Hand Delivered	(Y)	N
by Sampler/Client Rep. ?	(Y)	N
by Courier? UPS DHL FedEx Lone Star		
Temperature Upon Receipt:	4.0	°C

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Elke Env.

Date/ Time: 12-19-08 13:45

Lab ID #: 32683W

Initials: AL

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?	(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

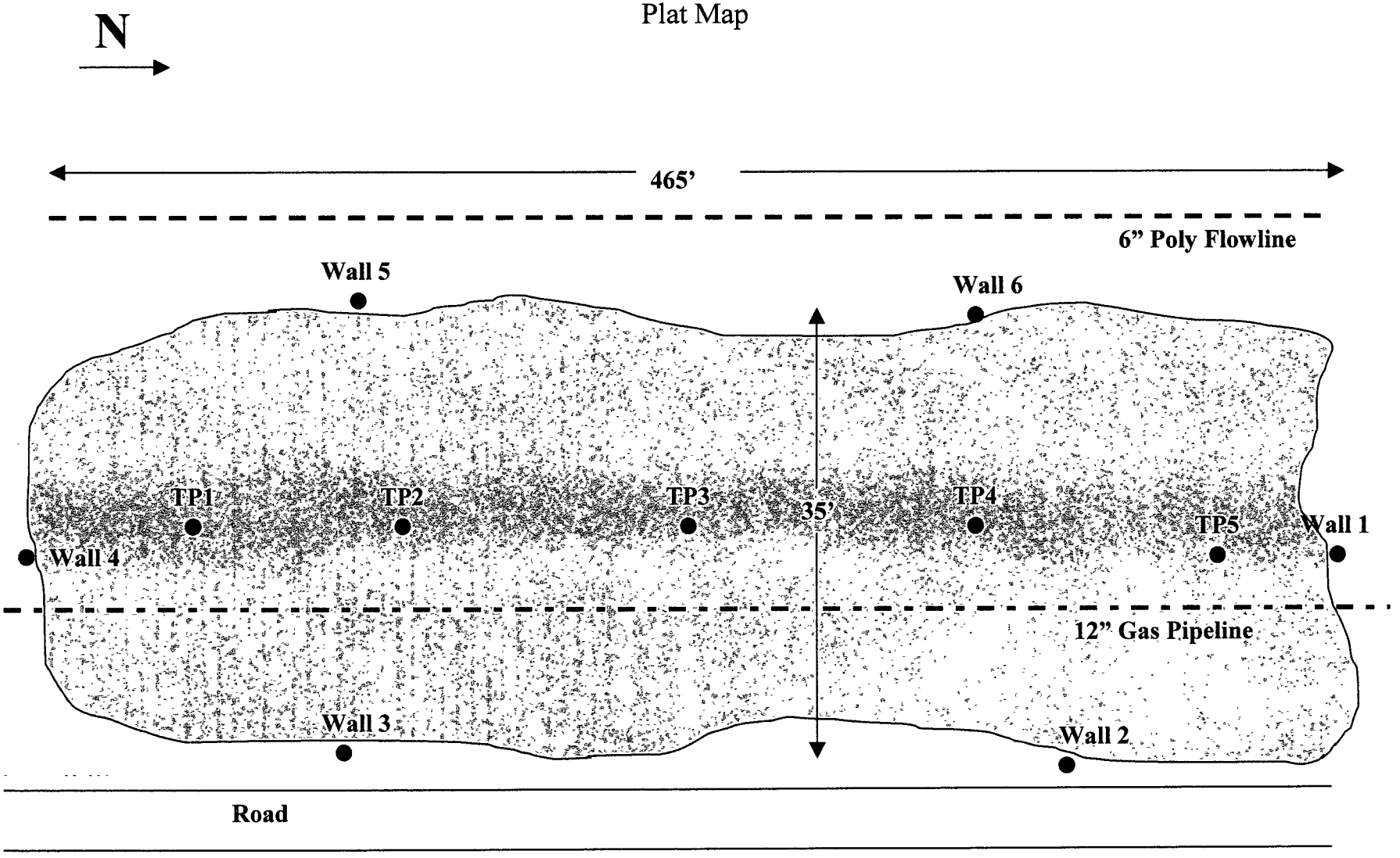
Roaring Springs 13 Fed #4 Flowline Leak

Site #2

Oxy USA

Roaring Springs 13 Fed #4 Flowline Leak (Site #2)

Plat Map



Elke Environmental, Inc.
P.O. Box 14167 Odessa, TX 79768

Field Analytical Report Form

Client Oxy USA **Analyst** Curtis Elam

Site Roaring Springs 13 Fed #4 Flowline Leak (Site #2)

Sample ID	Date	Depth	TPH / PPM	Cl / PPM	PID / PPM	GPS
TP1	12-18-08	2'	59	1,608	11.9	32° 28.794' N 104° 33.548' W
TP1	12-18-08	4'		1,680	0.0	32° 28.794' N 104° 33.548' W
TP1	12-18-08	6'		1,508	0.0	32° 28.794' N 104° 33.548' W
TP1	12-18-08	8'		1,712	0.0	32° 28.794' N 104° 33.548' W
TP1	12-18-08	8.5'	64	910	0.0	32° 28.794' N 104° 33.548' W
TP2	12-18-08	2'	92	2,784	0.0	32° 28.824' N 104° 33.553' W
TP2	12-18-08	4'		1,850	0.0	32° 28.824' N 104° 33.553' W
TP2	12-18-08	6'		1,625	0.0	32° 28.824' N 104° 33.553' W
TP2	12-18-08	8'	47	790	0.0	32° 28.824' N 104° 33.553' W
TP3	12-18-08	2'	88	1,850	12.3	32° 28.840' N 104° 33.556' W
TP3	12-18-08	4'		934	0.0	32° 28.840' N 104° 33.556' W
TP3	12-18-08	6'		890	0.0	32° 28.840' N 104° 33.556' W
TP3	12-18-08	8'		750	0.0	32° 28.840' N 104° 33.556' W
TP3	12-18-08	10'	72	345	0.0	32° 28.840' N 104° 33.556' W
TP4	12-18-08	2'	127	2,300	27.9	32° 28.850' N 104° 33.550' W
TP4	12-18-08	4'	54	1,675	0.0	32° 28.850' N 104° 33.550' W
TP4	12-18-08	6'		1,435	0.0	32° 28.850' N 104° 33.550' W

Analyst Notes Very hard rock encountered at 8' in most areas of site.

Elke Environmental, Inc.
P.O. Box 14167 Odessa, TX 79768

Field Analytical Report Form

Client Oxy USA **Analyst** Curtis Elam

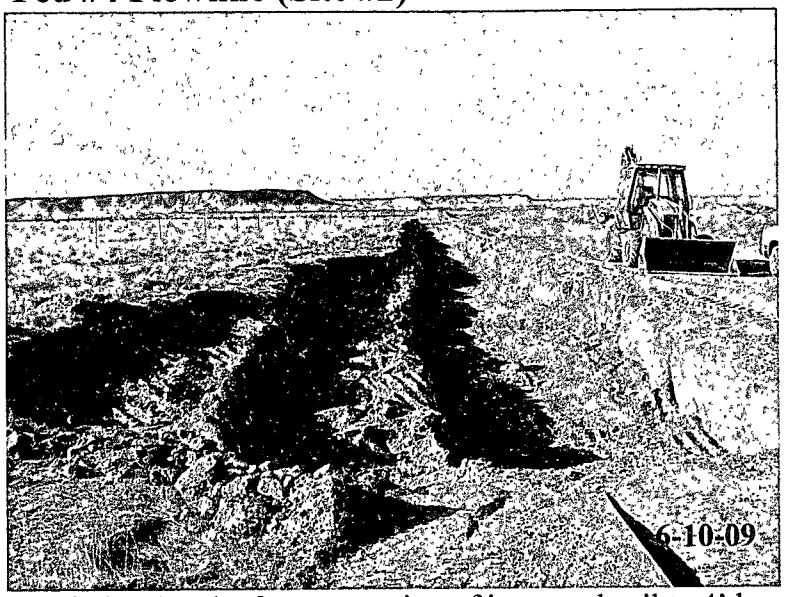
Site Roaring Springs 13 Fed #4 Flowline Leak (Site #2)

Sample ID	Date	Depth	TPH / PPM	Cl / PPM	PID / PPM	GPS
TP4	12-18-08	8'	62	605	0.0	32° 28.850' N 104° 33.550' W
TP5	12-18-08	2'	55	1,980	0.0	32° 28.860' N 104° 33.554' W
TP5	12-18-08	4'		1,750	0.0	32° 28.860' N 104° 33.554' W
TP5	12-18-08	6'		965	0.0	32° 28.860' N 104° 33.554' W
TP5	12-18-08	8'	47	310	0.0	32° 28.860' N 104° 33.554' W
Background	12-18-08	Surface		50		
Wall 1	12-18-08	Surface	98	50	0.0	32° 28.862' N 104° 33.554' W
Wall 2	12-18-08	Surface	82	80	0.0	32° 28.839' N 104° 33.560' W
Wall 3	12-18-08	Surface	84	17	0.0	32° 28.816' N 104° 33.557' W
Wall 4	12-18-08	Surface	86	15	0.0	32° 28.790' N 104° 33.550' W
Wall 5	12-18-08	Surface	78	100	0.0	32° 28.812' N 104° 33.560' W
Wall 6	12-18-08	Surface	54	60	0.0	32° 28.840' N 104° 33.564' W

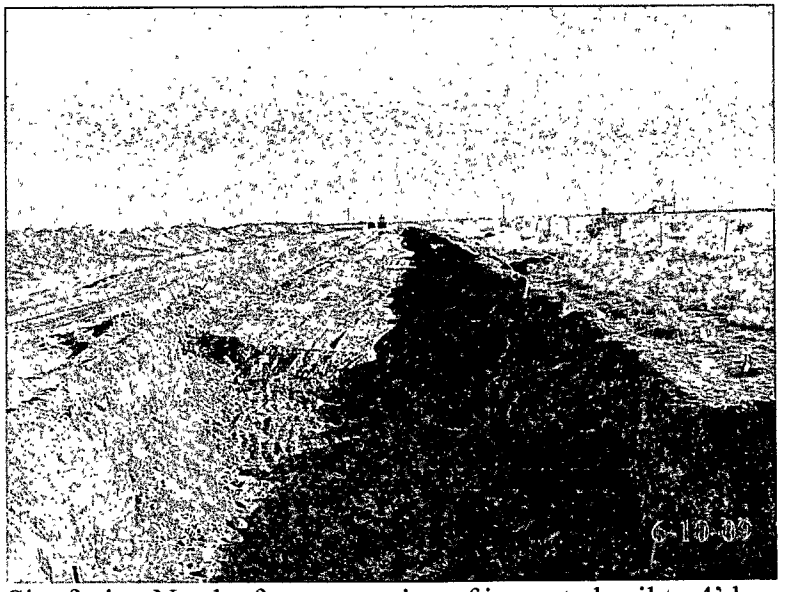
Analyst Notes

Oxy USA – Roaring Springs 13 Fed #4 Flowline (Site #2)

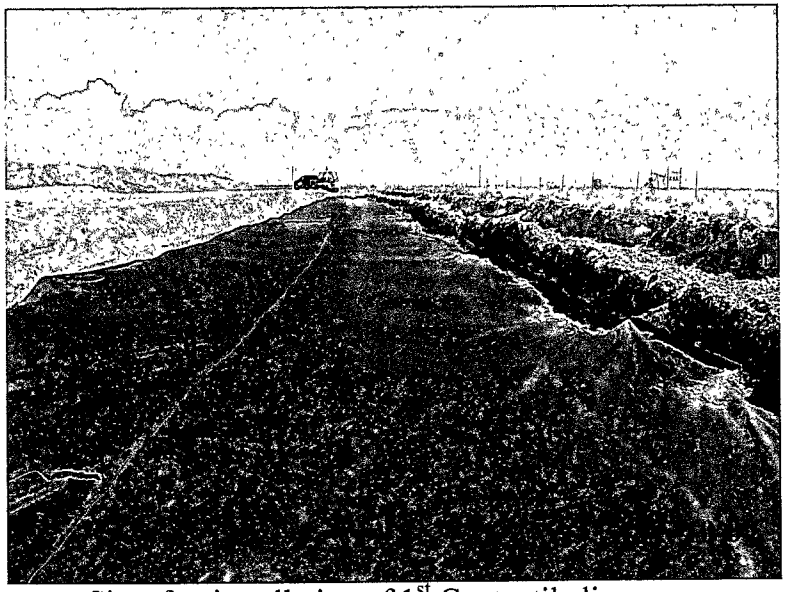
Site after leak from steel flowline.



Site facing South after excavation of impacted soil to 4' bgs.

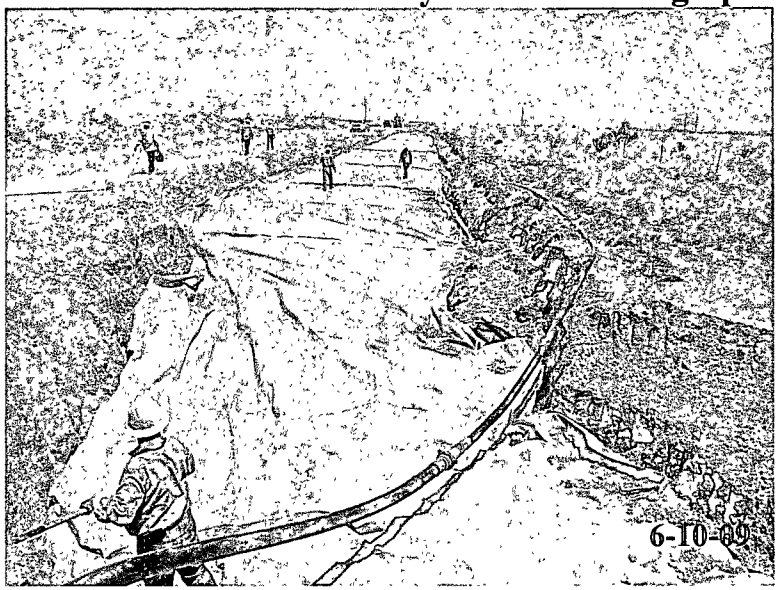


Site facing North after excavation of impacted soil to 4' bgs.

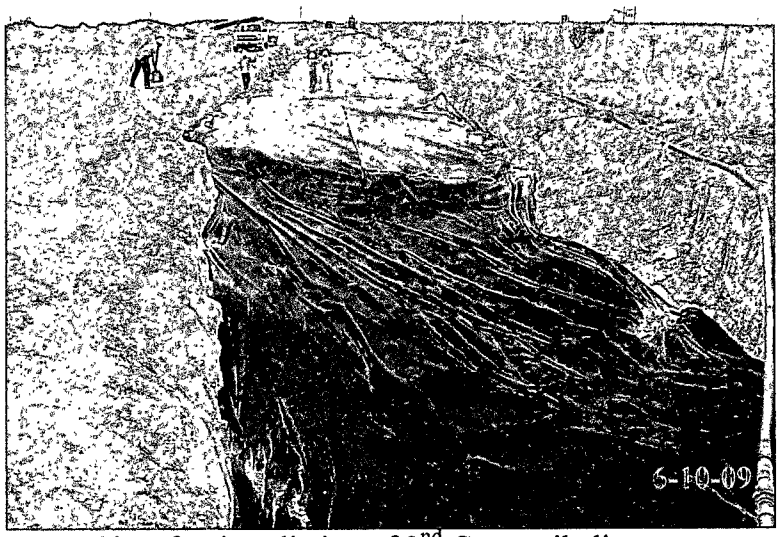


Site after installation of 1st Geotextile liner.

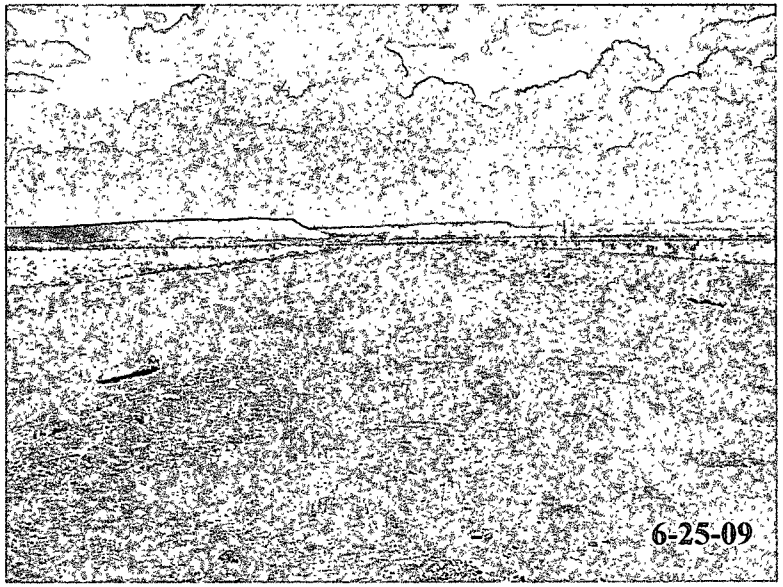
Oxy USA – Roaring Springs 13 Fed #4 Flowline (Site #2)



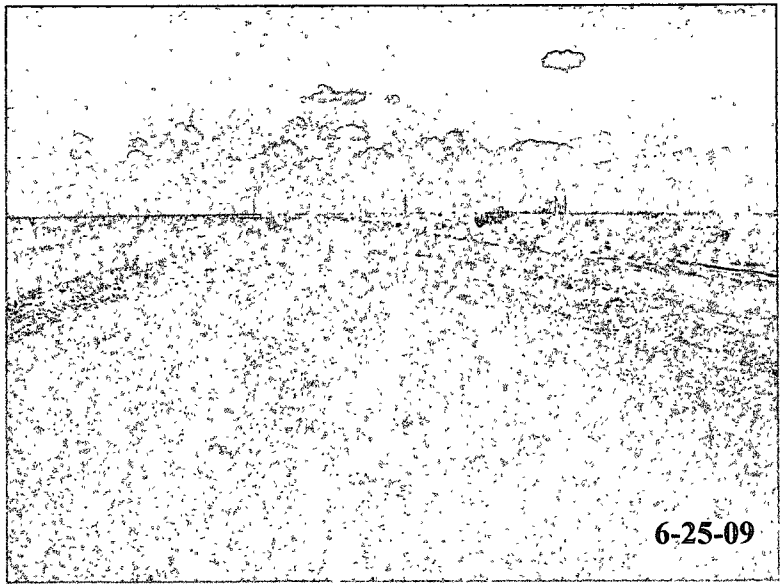
Site after installation of 20 mil poly liner at 4' bgs.



Site after installation of 2nd Geotextile liner.



Site facing South after backfill of clean soil and seeding.



Site facing North after backfill of clean soil and seeding.

Analytical Report 320897

for

Elke Environmental, Inc.

Project Manager: Logan Anderson

Oxy

24-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

24-DEC-08

Project Manager: **Logan Anderson**
Elke Environmental, Inc.
4817 Andrews Hwy
P.O. Box 14167 Odessa, tx 79768
Odessa, TX 79762

Reference: XENCO Report No: **320897**
Oxy
Project Address: Roaring Spring's 13 Fed # 4 Site # 2

Logan Anderson:

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 320897. 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. 320897 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

Sample Cross Reference 320897

Elke Environmental, Inc., Odessa, TX

Oxy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TP1 @ 8.5'	S	Dec-18-08 08:30	8.5 ft	320897-001
TP1 @ 8.5'	S	Dec-18-08 08:30	8.5	320897-001
TP2 @ 8'	S	Dec-18-08 09:15	8	320897-002
TP2 @ 8'	S	Dec-18-08 09:15	8 ft	320897-002
TP3 @ 10'	S	Dec-18-08 10:20	10	320897-003
TP3 @ 10'	S	Dec-18-08 10:20	10 ft	320897-003
TP4 @ 8'	S	Dec-18-08 11:30	8 ft	320897-004
TP4 @ 8'	S	Dec-18-08 11:30	8	320897-004
TP5 @ 8'	S	Dec-18-08 13:30	8	320897-005
TP5 @ 8'	S	Dec-18-08 13:30	8 ft	320897-005

Certificate of Analysis Summary 320897

Elke Environmental, Inc., Odessa, TX

Project Name: Oxy

Project Id:

Contact: Logan Anderson

Project Location: Roaring Spring's 13 Fed # 4 Site # 2

Date Received in Lab: Fri Dec-19-08 01:45 pm

Report Date: 24-DEC-08

Project Manager: Brent Barron, II

Analysis Requested											
	Lab Id:	320897-001		320897-002		320897-003		320897-004		320897-005	
	Field Id:	TP1 @ 8.5'		TP2 @ 8'		TP3 @ 10'		TP4 @ 8'		TP5 @ 8'	
	Depth:	8.5		8		10		8		8	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-18-08 08:30		Dec-18-08 09:15		Dec-18-08 10:20		Dec-18-08 11:30		Dec-18-08 13:30	
Anions by EPA 300	***Extracted:***										
	Analyzed:	Dec-20-08 04:31		Dec-20-08 04.31		Dec-20-08 04:31		Dec-20-08 04:31		Dec-20-08 04:31	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		709	10.7	1090	21.4	201	5.29	404	10.7	241	10.2
Percent Moisture	***Extracted:***										
	Analyzed:	Dec-19-08 17.00		Dec-19-08 17:00		Dec-19-08 17.00		Dec-19-08 17:00		Dec-19-08 17:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		6.52	1.00	6.39	1.00	5.46	1.00	6.37	1.00	2.38	1.00

Brent Barron
Odessa Laboratory Director

Certificate of Analysis Summary 320897

Elke Environmental, Inc., Odessa, TX

Project Name: Oxy

Project Id:

Contact: Logan Anderson

Project Location: Roaring Spring's 13 Fed # 4 Site # 2

Date Received in Lab: Fri Dec-19-08 01:45 pm

Report Date: 24-DEC-08

Project Manager: Brent Barron, II

Analysis Requested											
	Lab Id:	320897-001		320897-002		320897-003		320897-004		320897-005	
	Field Id:	TP1 @ 8.5'		TP2 @ 8'		TP3 @ 10'		TP4 @ 8'		TP5 @ 8'	
	Depth:	8.5 ft		8 ft		10 ft		8 ft		8 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-18-08 08:30		Dec-18-08 09:15		Dec-18-08 10:20		Dec-18-08 11:30		Dec-18-08 13:30	
TPH By SW8015 Mod	***Extracted:***	Dec-22-08 15:30		Dec-22-08 15:30		Dec-22-08 15:30		Dec-22-08 15:30		Dec-22-08 15:30	
	Analyzed:	Dec-23-08 16:51		Dec-23-08 17:17		Dec-23-08 17:44		Dec-23-08 18:11		Dec-23-08 18:39	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	16.0	ND	16.0	ND	15.9	ND	16.0	ND	15.4
C12-C28 Diesel Range Hydrocarbons		ND	16.0	ND	16.0	ND	15.9	ND	16.0	ND	15.4
C28-C35 Oil Range Hydrocarbons		ND	16.0	ND	16.0	ND	15.9	ND	16.0	ND	15 4
Total TPH		ND	16.0	ND	16.0	ND	15 9	ND	16.0	ND	15.4

Brent Barron
Odessa Laboratory Director

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.

Form 2 - Surrogate Recoveries

Project Name: Oxy

Work Orders : 320897,

Project ID:

Lab Batch #: 744640 **Sample:** 320897-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	53.7	50.0	107	70-135	

Lab Batch #: 744640 **Sample:** 320897-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	54.5	50.0	109	70-135	

Lab Batch #: 744640 **Sample:** 320897-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	54.7	50.0	109	70-135	

Lab Batch #: 744640 **Sample:** 320897-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	55.6	50.0	111	70-135	

Lab Batch #: 744640 **Sample:** 320897-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	52.4	50.0	105	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: Oxy

Work Orders : 320897,

Project ID:

Lab Batch #: 744640 **Sample:** 320897-005 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	59.9	50.0	120	70-135	

Lab Batch #: 744640 **Sample:** 320897-005 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	61.2	50.0	122	70-135	

Lab Batch #: 744640 **Sample:** 521824-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	57.8	50.0	116	70-135	

Lab Batch #: 744640 **Sample:** 521824-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	54.7	50.0	109	70-135	

Lab Batch #: 744640 **Sample:** 521824-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	63.2	50.0	126	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: Oxy

Work Order #: 320897 **Project ID:**

Lab Batch #: 744262 **Sample:** 744262-1-BKS **Matrix:** Solid

Date Analyzed: 12/20/2008 **Date Prepared:** 12/20/2008 **Analyst:** LATCOR

Reporting Units: mg/kg **Batch #:** 1

Anions by EPA 300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
	BLANK /BLANK SPIKE RECOVERY STUDY					
Chloride	ND	10.0	10.1	101	80-120	

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

BS / BSD Recoveries

Project Name: Oxy

Work Order #: 320897
Analyst: BHW
Lab Batch ID: 744640
Sample: 521824-1-BKS
Units: mg/kg

Date Prepared: 12/22/2008
Batch #: 1

Project ID:
Date Analyzed: 12/23/2008
Matrix: Solid

TPH By SW8015 Mod	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	988	99	1000	964	96	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1050	105	1000	1000	100	5	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: Oxy

Work Order #: 320897

Lab Batch #: 744262

Project ID:

Date Analyzed: 12/20/2008 **Date Prepared:** 12/20/2008 **Analyst:** LATCOR

QC- Sample ID: 320893-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	135	105	240	100	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: Oxy

Work Order # : 320897 **Project ID:**

Lab Batch ID: 744640 **QC- Sample ID:** 320897-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/23/2008 **Date Prepared:** 12/22/2008 **Analyst:** BHW

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	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	1020	959	94	1020	942	92	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1020	1020	100	1020	1010	99	1	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 ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: Oxy

Work Order #: 320897

Lab Batch #: 744262 **Project ID:**

Date Analyzed: 12/20/2008 **Date Prepared:** 12/20/2008 **Analyst:** LATCOR

QC- Sample ID: 320893-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Anions by EPA 300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	135	135	0	20	

Lab Batch #: 744268

Date Analyzed: 12/19/2008 **Date Prepared:** 12/19/2008 **Analyst:** MOV

QC- Sample ID: 320887-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	10.1	10.0	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

A Xenco Laboratories Company

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Logan Anderson

Company Name: Elke Environmental

Company Address: P O Box 14167

City/State/Zip: Odessa, TX 79768

Telephone No: 432-366-0043

Fax No: 432-366-0884

Sampler Signature: [signature]

e-mail: la_elkeenv@yahoo.com

Project Name: Oxy

Project #:

Project Loc: Remy Springs 13 Fed #4 Site #2

PO #:

Report Format: ☐ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 320917

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix (DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other)	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.				RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
01	TP1 @ 8.5'		8.5'	12-18	8:30		1	✓								S	1			1												1
02	TP2 @ 8'		8'	12-18	9:15		1	✓								S	1			1												1
03	TP3 @ 10'		10'	12-18	10:20		1	✓								S	1			1												1
04	TP4 @ 8'		8'	12-18	11:30		1	✓								S	1			1												1
05	TP5 @ 8'		8'	12-18	1:30		1	✓								S	1			1												1

Analyze For: TCLP: / TOTAL:

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time
[signature]	12 19	1:45			
			Received by ELOT: Undra Lom	12 19 03	10:45

Laboratory Comments:

	Y	N
Sample Containers Intact?	(Y)	N
VOCs Free of Headspace?	Y	(N/A)
Labels on container(s)	(Y)	N
Custody seals on container(s)	(Y)	N
Custody seals on cooler(s)	Y	(N)
Sample Hand Delivered	(Y)	N
by Sampler/Client Rep ?	(Y)	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 4.0 °

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: Elke Env.

Date/ Time: 12.19.08 13:45

Lab ID #: 326577

Initials: AL

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?	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

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

OCT 08 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

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company OXY USA	Contact Kelton Beaird
Address 102 S Main Carlsbad, NM 88220	Telephone No. (O) 505-887-8337 C) 575-390-1903
Facility Name Roaring Springs 13 #4	Facility Type
ROARING SPRINGS 13 FEDERAL 004	
Surface Owner BLM	Mineral Owner / Lease No.

30 015 29350

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	13	21S	23E					Eddy

Latitude_____ Longitude_____

NATURE OF RELEASE

Type of Release Produced water and oil	Volume of Release 15bbls water/ 1bbl oil	Volume Recovered 12bbls water/ 1oil
Source of Release Steel flow-line	Date and Hour of Occurrence 10-6-08	Date and Hour of Discovery 10-6-08 @ 4:00pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Sherry Bohnam NMOCD (left message) Jim Amos BLM (left message)	
By Whom? Kelton Beaird HES Oxy	Date and Hour See above	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Corrosion cause the steel flow-line to leak into pasture. The well was shut-in to prevent any further contamination.

Describe Area Affected and Cleanup Action Taken.*
Area affected is approx 200yards long by approx. 6 to 10 inches wide. The area will be examined and a clean-up plan will be submitted. Chloride levels are approx 1000 ppm in this water.

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:

Printed Name: Kelton Beaird

Title: HES Specialist

E-mail Address: kelton_beaird@oxy.com

Date: 10-7-08

Attach Additional Sheets If Necessary

OIL CONSERVATION DIVISION

Approved by District Supervisor: Terry Gum

Approval Date: 10-28-08

Expiration Date: 12-29-08

Conditions of Approval:
Within 30 days, on or before 11-28-08, completion of a remediation work plan based on delineation should be finalized and submitted for approval to the Division summarizing all actions taken and/or to be taken to mitigate environmental damage

Attached ☐

2RP - 259

Remediation Actions to be completed and Final C-141 submitted with confirmation analyses/documentation on or before the Expiration Date

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