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Remediation Plan

Prepared for Oxy USA

Nagooltee Peak 5 Fed #3 Eddy County, NM

RP#

Prepared by **Elke Environmental, Inc.**

P.O. Box 14167 Odessa, TX 79768 Phone (432) 366-0043 Fax (432) 366-0884 * Attach Additional Sheets If Necessary

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back

Revised October 10, 2003

Form C-141

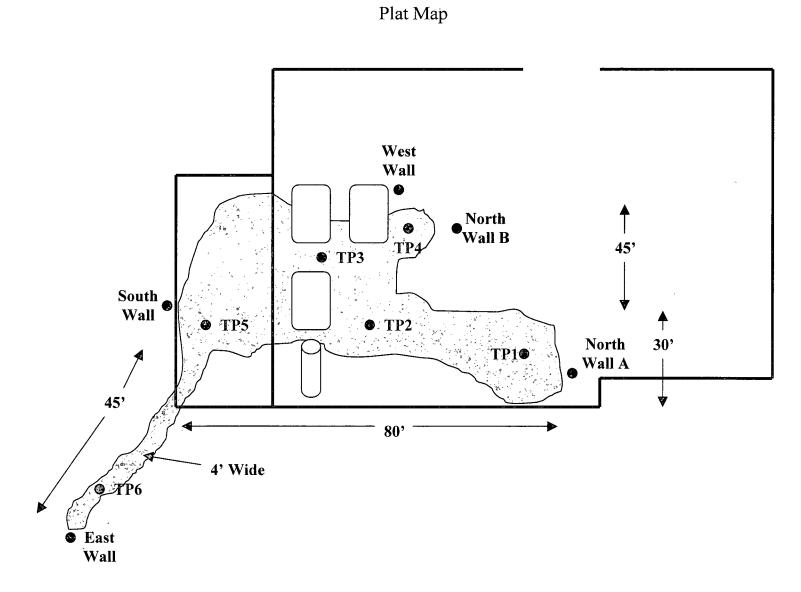
side of form

Release Notification and Corrective Action

						OPERA	TOR			l Report		Fina	al Report
Name of Co				/		Contact Ke	Iton Beaird	_					
Address 150	02 W. Con	nmerce Carls	sbad, NM	I 88220		Telephone N	No. (O) 575-628	-4100		Lease No. 3001529900 st Line County EDDY Volume Recovered 5 Date and Hour of Discovery -9-10 1:00pm Course. Course. Course Course			
Facility Nar	ne Nagoo	oltee peak 5-	3			Facility Type Satellite							
Surface Ow	ner BLM			Mineral (Owner I	BLM	<u></u>		Lease N	o. 3001529	900		
				LOC	TIO	N OF DEI							
Unit Letter	Section	Township	Range	Feet from the		N OF REI	Feet from the	Fact/\	West Line	County			
Omit Letter	Section	Township	Range	Teet from the	North	South Ellic	Teet from the	Last	West Line	County			
M	5	22S	24E					<u> </u>		EDDY			
			La	titude		Longitud	le						
				NAT	URE	OF RELI	EASE						
Type of Rele	ase Crude	Oil & Produced Water Volume of Release 10 bbls oil/ 30 Volume Recovered 5 bbls water											
Source of Re	lease Bypa	ss line				Date and H	Iour of Occurrence	1-9-10 1:00pm OCD					
Was Immedi	ate Notice (Yes 🗌	No 🗌 Not Re	equired	If YES, To Mike Brate	Whom? cher-NMOCD	?					
By Whom?	Kelton Bea	ird - HES Spe	ecialist - C)xv	<u> </u>	Date and F	Iour See above						
··· a Water				<u></u>				he Wate	ercourse.				
			Yes 🗵] No									
11 a Watercou	ırse was Im	pacted, Descr	ibe Fully.	*		_ 							
Victaulic cla		em and Reme	dial Actio	n Taken.*									
Victadile Cia	inp broke												
D 11-4	A CC 1	1.01	A .: 70.1										
		and Cleanup A			is O noin	ts. Denth to s	proundwater is >1	00' hos	Oxy prop	oses to remo	ve 3 f	feet @	TPI
				v concentration le	vels. Cl	ean native so	il will be backfille	ed into t	he excavati	on. A final	eport	will b	e
submitted at	the complet	tion of the pro	ject.										
should their	operations h	ave failed to a	adequately	investigate and i	emediat	e contaminati	ion that pose a thr	eat to g	round water	, surface wa	ter, hı	ıman l	nealth
				otance of a C-141	report d	loes not reliev	e the operator of	respons	ibility for co	ompliance w	ith an	y othe	r
rederal, state.	or local lay	ws and/or regu	ilations.				OIL CON	CEDV	ATION	DIVICIO	NI.		
							OIL CON	OLK V	ATION	DIVISIO	<u>1</u>		
Signature:	_												
Printed Name	e: Kelton B	seaird				Approved by	District Supervis	or:					
<u># HES S</u>	pecialist					Approval Dat	te:		Expiration 1	Date:			
E-mail Addre	ess: kelton	beaird@oxy.o	com			Conditions of	f Approval:			Attached			
Date: 3-24-1	0										_		

Oxy USA Nagooltee Peak 5 Fed #3





Elke Environmental, Inc.

P.O. Box 14167 Odessa, TX 79768

Field Analytical Report Form

Client Oxy USA Analyst Bobby Steadham

Site Nagooltee Peak 5 Fed #3

Sample ID	Date	Depth	418.1 TPH / PPM	CI / PPM	PID / PPM	GPS
TP1	2-9-10	3"	12,110	539	433	32° 24.956' N 104° 31.577' W
TP1	2-10-10	1'	4,390	625	130	32° 24.956' N 104° 31.577' W
TP1	2-10-10	2'		2,039	23.1	32° 24.956' N 104° 31.577' W
TP1	2-12-10	3'	20	121	7.0	32° 24.956' N 104° 31.577' W
TP2	2-9-10	3"	11,410	511	321	32° 24.950' N 104° 31.577' W
TP2	2-10-10	1'	7,987	150	64.5	32° 24.950' N 104° 31.577' W
TP2	2-10-10	2'	142	112	49.6	32° 24.950' N 104° 31.577' W
TP3	2-9-10	3"	8,990	382	321	32° 24.950° N 104° 31.581° W
TP3	2-10-10	1'	2,340	629	340	32° 24.950° N 104° 31.581° W
TP3	2-10-10	2'		884	210	32° 24.950' N 104° 31.581' W
TP3	2-10-10	3'		754	122	32° 24.950' N 104° 31.581' W
TP3	2-10-10	4'	46	287	16.7	32° 24.950' N 104° 31.581' W
TP4	2-9-10	3"	11,890	532	231	32° 24.953' N 104° 31.583' W
TP4	2-10-10	1'	3,430	613	255	32° 24.953' N 104° 31.583' W
TP4	2-12-10	2'	968	216	264	32° 24.953' N 104° 31.583' W
TP4	2-12-10	3'			188	32° 24.953' N 104° 31.583' W
TP4	2-12-10	4'			155	32° 24.953' N 104° 31.583' W

Analyst Notes

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

Field Analytical Report Form

Client Oxy USA				Analyst ₋	Bobby Ste	eadham
Site Nagooltee	Peak 5 Fed	#3				
Sample ID	Date	Depth	418.1 TPH / PPM	Cl / PPM	PID / PPM	GPS
TP4	2-15-10	5'	1,044	189	27.1	32° 24.953' N 104° 31.583' W
TP5	2-9-10	3"	6,120	297	267	32° 24.944' N 104° 31.577' W
TP5	2-10-10	1'	198	382	288	32° 24.944' N 104° 31.577' W
TP5	2-10-10	2'		149	142	32° 24.944' N 104° 31.577' W
TP5	2-15-10	3'	90	129	23.5	32° 24.944' N 104° 31.577' W
TP6	2-15-10	6"	139	119	6.4	32° 24.939' N 104° 31.572' W
North Wall A	2-1.5-10	2'	4	168	4.3	32° 24.957' N 104° 31.573' W
North Wall B	2-15-10	2.5'	2	129	2.1	32° 24.954' N 104° 31.589' W
East Wall	2-15-10	6"	1	179	9.7	32° 24.938' N 104° 31.571' W
South Wall	2-15-10	1,	1	129	6.9	32° 24.941' N 104° 31.587' W
West Wall	2-15-10	2.5'	25	151	4.8	32° 24.953' N 104° 31.585' W

			· · · · · · · · · · · · · · · · · · ·	1		

Analyst Notes	

Analytical Report 362217

for

Elke Environmental, Inc.

Project Manager: Logan Anderson

Oxy USA

Nagooltee Peak 5 Federal #3

16-FEB-10





12600 West I-20 East Odessa, Texas 79765

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Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002) Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054) New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610) Rhode Island (LAO00312), USDA (S-44102)

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Florida(E86240), South Carolina(96031001), Louisiana(04154), Georgia(917)

North Carolina(444), Texas(T104704468-TX), Illinois(002295)

subcontract lab in the analyst ID field, or the complete subcontract report attac

s redu

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. 362217 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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16-FEB-10

Project Manager: Logan Anderson

Elke Environmental, Inc.

P.O. Box 14167 Odessa, TX 79768

Reference: XENCO Report No: 362217

Oxy USA

Project Address: Nagooltee Peak 5 Federal #3

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 362217. 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



Sample Cross Reference 362217



Elke Environmental, Inc., Odessa, TX

Oxy USA

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TP 1 @ 3'	S	Feb-10-10 16:30	3 ft	362217-001
TP 2 @ 2'	S	Feb-10-10 17:30	2 ft	362217-002
TP 3 @ 4'	S	Feb-10-10 17:00	4 ft	362217-003
TP 5 @ 3'	S-	Feb-10-10 18:00	3 ft	362217-004

CASE NARRATIVE



Client Name: Elke Environmental, Inc.

Project Name: Oxy USA



Project ID:

Nagooltee Peak 5 Federal

Work Order Number: 362217

Report Date: 16-FEB-10 Date Received: 02/12/2010

Sample receipt non conformances and Comments:

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-793759 Percent Moisture

None

Batch: LBA-793823 Inorganic Anions by EPA 300

None-

Batch: LBA-793895 TPH By SW8015 Mod

None

Final Ver. 1.000



Certificate of Analy Summary 362217

Elke Environmental, Inc., Odessa, TX

Project Name: Oxy USA

inelac:

Project Id: Nagooltee Peak 5 Federal # 3

Contact: Logan Anderson

Project Location: Nagooltee Peak 5 Federal #3

Date Received in Lab: Fri Feb-12-10 05:00 pm

Report Date: 16-FEB-10

Project Manager: Brent Barron, II

								I Toject Mai	uager.	Brent Barron, II	
	Lab Id:	362217-0	001	362217-0	02	362217-0	03	362217-0	04		
Analysis Requested	Field Id:	TP 1 @	3'	TP 2 @	2'	TP 3 @	4'	TP 5 @	31		
Analysis Requested	Depth:	3 ft		2 ft		4 ft	}	3 ft			
	Matrix:	SOIL		SOIL		SOIL	Section Sect				
	Sampled:	Feb-10-10	16:30	Feb-10-10	7:30	Feb-10-10	7:00	Feb-10-10 1	18:00		
Anions by E300	Extracted:										
	Analyzed:	Feb-15-10	08:40	Feb-15-10 (08:40	Feb-15-10 (08:40	Feb-15-10 (08:40		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		56.3	9.40	61.4	9.53	255	52.2	66.7	10.3		
Percent Moisture	Extracted:										
	Analyzed:	Feb-15-10	08:00	Feb-15-10 (08:00	Feb-15-10 (08:00	Feb-15-10 (08:00		
	Units/RL:	%	RL	%	RL	%	RL	%	RL		
Percent Moisture		10.6	1.00	11.9	1.00	19.5	1.00	18.2	1.00		
TPH By SW8015 Mod	Extracted:	Feb-15-10	09:00	Feb-15-10 (9:00	Feb-15-10 (9:00	Feb-15-10 (09:00		
	Analyzed:	Feb-15-10	15:31	Feb-15-10 1	5:57	Feb-15-10	16:24	Feb-15-10 1	16:51		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
C6-C12 Gasoline Range Hydrocarbons		ND	16.8	17.8	17.0	ND	18.6	ND	18.3		
C12-C28 Diesel Range Hydrocarbons		ND	16.8	103	17.0	18.9	18.6	49.2	18.3		
C28-C35 Oil Range Hydrocarbons		ND	16.8	ND	17.0	ND	18.6	ND	18.3		
Total TPH		ND	16.8	121	17.0	18.9	18.6	49.2	18.3		

Page 5 of 15



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.
- **BRL** Below Reporting Limit.
- **RL** Reporting Limit
- * Outside XENCO's scope of NELAC Accreditation.

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 (361) 884-0371
 (361) 884-9116



Form 2 - Surrogate Recoveries

Project Name: Oxy USA

/ork Orders: 362217,

Project ID: Nagooltee Peak 5 Federal #3

Lab Batch #: 793895

Sample: 550395-1-BKS/BKS

Matrix: Solid Batch: 1

Units: mg/kg Date Analyzed: 02/15/10 14:10	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		ļ
1-Chlorooctane	90.2	100	90	70-135	
o-Terphenyl .	56.8	50.0	114	70-135	

Lab Batch #: 793895

Sample: 550395-1-BSD/BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 02/15/10 14:37	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1-Chlorooctane	80.8	100	81	70-135			
o-Terphenyl	36.9	50.0	74	70-135			

Lab Batch #: 793895

Sample: 550395-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 02/15/10 15:03	SU	RROGATE RI	ECOVERY S	Control Limits %R 70-135 70-135	
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Limits	Flags
1-Chlorooctane	70.5	100	71	70-135	
o-Terphenyl	40.2	50.0	80	70-135	

Lab Batch #: 793895

Sample: 362217-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 02/15/10 15:31	SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.7	100	71	70-135	
o-Terphenyi	41.5	50.0	83	70-135	

Lab Batch #: 793895

Sample: 362217-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 02/15/10 15:57	SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctanc	70.0	100	70	70-135	
o-Terphenyl	40.9	50.0	82	70-135	

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

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

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Form 2 - Surrogate Recoveries

Project Name: Oxy USA

/ork Orders: 362217,

Project ID: Nagooltee Peak 5 Federal #3

Lab Batch #: 793895

Sample: 362217-003 / SMP

Batch: | Matrix: Soil

Units: mg/kg Date Analyzed: 02/15/10 16:24	SU	RROGATE R	ECOVERY	Control Limits %R 70-135 70-135	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Limits	Flags
Analytes		'.	[D]		
1-Chlorooctane	70.8	100	71	70-135	
o-Terphenyl	41.1	50.0	82	70-135	

Lab Batch #: 793895

Sample: 362217-004 / SMP

1 Matrix: Soil

Units: mg/kg Date Analyzed: 02/15/10	16:51 SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		1	[D]		
1-Chlorooctane	70.4	100	70	70-135	
o-Terphenyl	41.0	50.0	82	70-135	

Lab Batch #: 793895

Sample: 362217-001 S / MS

Batch: 1

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 02/15/10 19:33	SU	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	82.2	100	82	70-135	
o-Terphenyl	37.9	50.0	76	70-135	

Lab Batch #: 793895

Sample: 362217-001 SD / MSD

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 02/15/10 20:00	SU	RROGATE R	ECOVERY :	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	83.9	100	84	70-135	
o-Terphenyl	39.0	50.0	78	70-135	

Surrogate Recovery [D] = 100 * A / B

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

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Blank Spike Recovery



Project Name: Oxy USA

Work Order #: 362217

Project ID: Nagooltee Peak 5 Federal # 3

Lab Batch #: 793823

Sample: 793823-1-BKS

Matrix: Solid

Date Analyzed: 02/15/2010

Date Prepared: 02/15/2010

Analyst: LATCOR

Reporting Units: mg/kg

Batch #:

BLANK/BLANK SPIKE RECOVERY STUDY

Anions by E300	Blank Result [A]	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits %R	Flags
Analytes		100	[C]	{D}		
Chloride	ND	10.0	9.60	96	75-125	

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BS / BSD Recoveries



Project Name: Oxy USA

Work Order #: 362217

Analyst: BEV

Date Prepared: 02/15/2010

Project ID: Nagooltee Peak 5 Federal #3

Date Analyzed: 02/15/2010

Lab Batch ID: 793895

Sample: 550395-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg		BLAN	K/BLANK S	SPIKE / I	BLANK S	SPIKE DUPL	ICATE 1	RECOVE	ERY STUD	ΟΥ	
TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		(B)	[C]	[D]	{E}	Result [F]	[G]				
C6-C12 Gasoline Range Hydrocarbons	ND	1000	926	93	1000	840	84	10	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	886	89	1000	853	85	4	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 USA



ork Order #: 362217

Lab Batch #: 793823

Date Analyzed: 02/15/2010

QC- Sample ID: 362205-001 S

Date Prepared: 02/15/2010

Project ID: Nagooltee Peak 5 Federal # 3

Analyst: LATCOR

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATI	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes	[A]	[B]		(10)	/•••	
Chloride	133	215	317	86	75-125	

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

BRL - Below Reporting Limit



Form 3 - 1

MSD Recoveries

Project Name: Oxy USA



Work Order #: 362217

Project ID: Nagooltee Peak 5 Federal #3

Lab Batch ID: 793895

QC-Sample ID: 362217-001 S

Batch #:

Matrix: Soil

Date Analyzed: 02/15/2010

Date Prepared: 02/15/2010

Analyst: BEV

Reporting I	Jnits: mg/kg
-------------	--------------

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag			
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD				
C6-C12 Gasoline Range Hydrocarbons	ND	1120	957	85	1120	942	84	2	70-135	35				
C12-C28 Diesel Range Hydrocarbons	ND	1120	985	88	1120	984	88	0	70-135	35				



Sample Duplicate Recovery



Project Name: Oxy USA

Work Order #: 362217

Lab Batch #: 793823

Project ID: Nagooltee Peak 5 Federal # 3

Date Analyzed: 02/15/2010

Date Prepared: 02/15/2010

Analyst: LATCOR

QC-Sample ID: 362205-001 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Chloride	133	126	5	20	

Lab Batch #: 793759

Date Analyzed: 02/15/2010

Date Prepared: 02/15/2010

Analyst: WRU

QC- Sample ID: 362205-001 D

Percent Moisture

Analyte

Batch #:

Matrix: Soil

Reporting Units: %

Percent Moisture

	SAMPLE / Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
•	7.16	7.28	2	20	<u> </u>

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

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

A Xenco Laboratories Company

12600 West I-20 East Odessa, Texas 79765 Phone: 432-563-1800 Fax: 432-563-1713

	Project Manager:	Logan A	nderson																Proj	ect A	lam):	_	ST-S	7			<u> </u>	٧	48			
	Company Name	Elke Env	rironmenta																	Proj	ect i	k											
	Company Address:	P O Box	14167																Pr	ojec	t Loc	:: <u>M</u>	N. C.	<u>م</u>	re e		₽€J	71K-	_5	<u> </u>	<u>عود ا</u>	RA	_#3
	City/State/Zip:	Odessa,	TX 79768	<u> </u>																	PO á	k											
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EAB # (teb use only)		.D CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total 8. of Containers	8	·			NaOH			Other (Specify)	OW-Groundigue S-Sol/Sold	100	(774: 418.7) 8015M 8015B	3 3	Anions (QLSO4, Albuminy)	SAR / ESP / CEC	Metata: As Ag Ba Cd Cr Pb Hg Se	Votaties	Semivolatiles	BTEX 80218/5030 or BTEX 8280	NO.R.M.				Octodate) 24.	Standard IAI
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Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

elient: EIKE ENU.				
Date/ Time: 307717 M				: [
ab ID#: 2 12 · 10 17 · 00				
nitials: AL				
Sample Receipt	Checklist		`	
•	_		Cli	ient Initials
1 Temperature of container/ cooler?	(Vie)	No	-1.1 °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	1
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	- 1
#13 Samples properly preserved?	(Yes)	No	See Below	
f14 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	i
#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?	Tes	No	Not Applicable	
Variance Docu			1 Hot Applicable	
Contact: Contacted by:			D-A-/T	ļ
	_	•	Date/ Time:	
Regarding:				
· · · · · · · · · · · · · · · · · · ·				
Corrective Action Taken:				
				!
		"	•	
Check all that Apply: See attached e-mail/ fax				
Client understands and wou	ild like to prod			:

Analytical Report 363052

for

Elke Environmental, Inc.

Project Manager: Logan Anderson

Oxy USA

Nagooltee Peak 5-003

26-FEB-10



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002) Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054) New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610) Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240), South Carolina(96031001), Louisiana(04154), Georgia(917)

North Carolina(444), Texas(T104704468-TX), Illinois(002295)



26-FEB-10

Project Manager: Logan Anderson Elke Environmental, Inc. P.O. Box 14167 Odessa, TX 79768

Reference: XENCO Report No: 363052

Oxy USA

Project Address: Nagooltee Peak 5-003

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 363052. 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. 363052 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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Houston - Dallas - San Antonio - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America



Sample Cross Reference 363052



Elke Environmental, Inc., Odessa, TX

Oxy USA

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TP4 @ 5'	S	Feb-15-10 12:45	5 ft	363052-001

CASE NARRATIVE



Client Name: Elke Environmental, Inc.

Project Name: Oxy USA

Project ID:

Nagooltee Peak 5-003

Work Order Number: 363052

Report Date: 26-FEB-10

Date Received: 02/22/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-795451 Anions by E300

None

Batch: LBA-795474 Percent Moisture

None

Batch: LBA-795727 TPH By SW8015 Mod

None

Final Ver. 1.000



Certificate of Analy. Summary 363052

Elke Environmental, Inc., Odessa, TX

Project Id: Nagooltee Peak 5-003

Contact: Logan Anderson

Project Location: Nagooltee Peak 5-003

Project Name: Oxy USA

Date Received in Lab: Mon Feb-22-10 09:11 am

Report Date: 26-FEB-10

Project Manager: Brent Barron, II

			Project Manager: Brent Barrol	1, 11
	Lab Id:	363052-001		
Analysis Requested	Field Id:	TP4 @ 5'		
Analysis Requesieu	Depth:	5 ft		
	Matrix:	SOIL		
	Sampled:	Feb-15-10 12:45		
Anions by E300	Extracted:			
	Analyzed:	Feb-24-10 14:12		
	Units/RL:	mg/kg RL		
Chloride		259 10.3		
Percent Moisture	Extracted:			
	Analyzed:	Feb-23-10 12:25		
	Units/RL:	% RL		
Percent Moisture		18.6 1.00		
TPH By SW8015 Mod	Extracted:	Feb-25-10 09:45		
	Analyzed:	Feb-26-10 08:51		
	Units/RL:	mg/kg RL		
C6-C12 Gasoline Range Hydrocarbons		ND 18.4		
C12-C28 Diesel Range Hydrocarbons		ND 18.4		
C28-C35 Oil Range Hydrocarbons		ND 18.4		
Total TPH		ND 18.4		

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 bereby 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, II Odessa Laboratory Manager



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.
- **BRL** Below Reporting Limit.
- **RL** Reporting Limit
- * Outside XENCO's scope of NELAC Accreditation.

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Form 2 - Surrogate Recoveries

Project Name: Oxy USA

Nork Orders: 363052,

Project ID: Nagooltee Peak 5-003

Lab Batch #: 795727

Sample: 551566-1-BKS / BKS

Matrix: Solid Batch: 1

Units: mg/kg Date Analyzed: 02/26/10 0	7:29 SU	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
1-Chlorooctane	96.8	99.7	97	70-135					
o-Terphenyl	46.9	49.9	94	70-135					

Lab Batch #: 795727

Sample: 551566-1-BSD / BSD

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 02/26/10 07:57	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
1-Chlorooctane	99.7	99.5	100	70-135				
o-Terphenyl	48.1	49.8	97	70-135				

Lab Batch #: 795727

Sample: 551566-1-BLK / BLK

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 02/26/10 08:24	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane	81.7	99.8	82	70-135	***				
o-Terphenyl	49.3	49.9	99	70-135					

Lab Batch #: 795727

Sample: 363052-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 02/26/10 08:51	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane	82.8	100	83	70-135					
o-Terphenyl	49.6	50.1	99	70-135					

Lab Batch #: 795727

Sample: 363052-001 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 02/26/10 14:10	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod Analytes	Amount Found {A	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	97.0	99.5	97	70-135				
o-Terphenyl	46.5	49.8	93	70-135				

^{*} Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 * A / B

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

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Form 2 - Surrogate Recoveries

Project Name: Oxy USA

Work Orders: 363052,

Project ID: Nagooltee Peak 5-003

Lab Batch #: 795727

Sample: 363052-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 02/26/10 14:37	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctanc	94.5	99.9	95	70-135				
o-Terphenyl	46.0	50.0	92	70-135				

Surrogate Recovery [D] = 100 * A / B

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

^{*} Surrogate outside of Laboratory QC limits

^{**} Surrogates outside limits; data and surrogates confirmed by reanalysis

^{***} Poor recoveries due to dilution



Blank Spike Recovery



Project Name: Oxy USA

Work Order #: 363052

Project ID:

Nagooltee Peak 5-003

Lab Batch #: 795451

Sample: 795451-1-BKS

Matrix: Solid

Date Analyzed: 02/24/2010

Date Prepared: 02/24/2010

Analyst: LATCOR

Reporting Units: mg/kg	Batch #:	tich #: 1 BLANK/BLANK SPIKE RECOVERY STUI								
Anions by E300	Blank Result	Spike Added [B]	Blank Spike Result	Blank Spike %R	Control Limits Fl	Flags				
Analytes	[A]	(10)	[C]	[D]	/0K					
Chloride	ND	10.0	9.06	91	75-125					

Page 9 of 15



BS / BSD Recoveries



Project Name: Oxy USA

Work Order #: 363052

Analyst: BEV

Date Prepared: 02/25/2010

Project ID: Nagooltee Peak 5-003

Date Analyzed: 02/26/2010

Matrix: Solid

Lab Batch ID: 795727

Batch #: 1

Sample: 551566-1-BKS

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
C6-C12 Gasoline Range Hydrocarbons	ND	997	898	90	995	913	92	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	942	94	995	814	82	15	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 USA



Work Order #: 363052

Lab Batch #: 795451

Date Analyzed: 02/24/2010

Date Prepared: 02/24/2010

Project ID: Nagooltee Peak 5-003

Analyst: LATCOR

QC- Sample ID: 363052-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	MATI	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	259	246	471	86	75-125				

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

BRL - Below Reporting Limit



Form 3 - N

MSD Recoveries



Project Name: Oxy USA

Work Order #: 363052

Project ID: Nagooltee Peak 5-003

Lab Batch ID: 795727

QC-Sample ID: 363052-001 S

Batch #:

Matrix: Soil

Date Analyzed: 02/26/2010

Date Prepared: 02/25/2010

Analyst: BEV

Reporting Units: mg/kg

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
C6-C12 Gasoline Range Hydrocarbons	ND	1220	1110	91	1230	1060	86	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1220	990	81	1230	958	78	3	70-135	35	



Sample Duplicate Recovery

Project Name: Oxy USA

Work Order #: 363052

Lab Batch #: 795451

Project ID: Nagooltee Peak 5-003

Analyst: LATCOR

QC- Sample ID: 363052-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg SAMPLE / SAMPLE DUPLICATE RECOVERY

Anions by E300 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	259	251	3	20	

Lab Batch #: 795474

Date Analyzed: 02/23/2010

Date Prepared: 02/23/2010

Analyst: ASA

QC- Sample ID: 363039-011 D

Percent Moisture

Analyte

Batch #: 1

16.8

Matrix: Soil

Reporting Units: %

Percent Moisture

SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag

16.7

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

Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

A Xenco Laboratories Company

12600 West I-20 East Odessa, Texas 79765 Phone: 432-563-1800 Fax: 432-563-1713

		Project Manager:	Logan Anderson	1											····		Pr	ojec	t Nar	me:_		<u>}</u>		اکال	4						
		Company Name	Elke Environme	ntal														P	rojec	t#:_											
		Company Address:	P O Box 14167														4	Proj	ect L	oc: _	No	تحث	X-X)	275	*	ÈN.	ب ج	<u>5 -</u>	00	<u>,3</u>	
		City/State/Zip:	Odessa, TX 797	'68) #:											
		Telephone No:	432-366-0043				Fax No:		43	32-3	366-	-088	14				Repor	t Fo	mat	:	E SI	lande	ard		D 7	RRF	, ,		NPD	ES	
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Page 14 of 15	AB # (tab use only)		D CODE	legthning Depth	Ending Depth	Date Sampled	Time Sampled	ield Filtered	Total #. of Containers			HC1		Na ₂ S ₂ O ₃		(Specify)	CW - Groundwater S-SoltSolid GW - Groundwater S-SoltSolid NP-Mon-Potatie Specity Other	TPH: 418. (8015) 8015	TPH: TX 1005 TX 1006	Q 1	Anions (C) SO4, Alterinity) SAR / ESP / CEC	Matata: As Ag Ba Cd Cr Pb Hg Se	Voletiles	Semivolatiles	BTEX 80218/5030 or BTEX 8280	N.O.R.M.				RUSH TAT (Pre-Schedule) 24, 4	Sandard (A)
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Emironmental Lab of Texas
Variance/ Corrective Action Report- Sample Log-In

Client: Elke Cnu.						
Date/ Time: 2.77.10 9:11						
Lab ID#: 363057						
Initials:						
			**			
Sample Receipt	Checklist			Sient Init		
in a second	Yes	No	-3.4 °c			
#1 Temperature of container/ cooler?	Ves	No). I		H	٠.
#2 Shipping container in good condition? #3 Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present		\dashv	
	(Yes	No	Not Present	1		
	Yes	No	HOLFIESER	┃ 		
#5 Chain of Custody present? #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)?	res	No	iD written on Cont./ Lid		†-	
#9 Container label(s) legible and intact?	Yes	No	Not Applicable	1 		
#10 Sample matrix/ properties agree with Chain of Custody?	Yes	No		1	+1	
#11 Containers supplied by ELOT?	Yes	No			† †	
#12 Samples in proper container/ bottle?	Ves	No	See Below	† -	1	
#13 Samples properly preserved?	1/200	No	See Below	 		
#14 Sample bottles intact?	Yes	No	OCS DOION	 	+-	
#15 Preservations documented on Chain of Custody?	Yes	No	<u> </u>	 	+	
#16 Containers documented on Chain of Custody?	Yes	No	<u> </u>	 	+-1	
#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	1	+	
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Variance Docu	ımentation				<u> </u>	
Contacted by:		_	Date/ Time:		1	
Regarding:		_				
						
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Corrective Action Taken:					!	
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Check all that Apply: See attached e-mail/ fax					•	
Client understands and wo						
Cooling process had begun	n shortly after	sampling	event	•		