

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

Form C-144  
June 1, 2004

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

For drilling and production facilities, submit to  
appropriate NMOCD District Office.  
For downstream facilities, submit to Santa Fe  
office

**Pit or Below-Grade Tank Registration or Closure**

Is pit or below-grade tank covered by a "general plan"? Yes ☒ No ☐

**Final Report**

Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

Operator: <u>Tandem Energy Corporation</u> Telephone: <u>432-686-7136</u> e-mail address: <u>tscott@tandem-energy.com</u>		
Address: <u>P O Box 1559 Midland, TX 79702</u>		
Facility or well name: <u>Ballard Grayburg San Andres #235</u> API #: <u>30-015-35970</u> U/L or Qtr/Qtr <u>N</u> Sec <u>5</u> T <u>18S</u> R <u>29E</u>		
County: <u>Eddy</u> Latitude <u>32.7724208</u> Longitude <u>104.1002034</u> NAD: 1927 <input checked="" type="checkbox"/> 1983 <input type="checkbox"/>		
Surface Owner: Federal <input checked="" type="checkbox"/> State <input type="checkbox"/> Private <input type="checkbox"/> Indian <input type="checkbox"/>		
<b>Pit</b> Type: Drilling <input checked="" type="checkbox"/> Production <input type="checkbox"/> Disposal <input type="checkbox"/> Workover <input type="checkbox"/> Emergency <input type="checkbox"/> Lined <input checked="" type="checkbox"/> Unlined <input type="checkbox"/> Liner type: Synthetic <input checked="" type="checkbox"/> Thickness <u>12</u> mil Clay <input type="checkbox"/> Pit Volume _____ bbl	<b>Below-grade tank</b> Volume: _____ bbl Type of fluid: _____ Construction material: _____ Double-walled, with leak detection? Yes <input type="checkbox"/> If not, explain why not: _____	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet	(20 points)
	50 feet or more, but less than 100 feet	(10 points)
	100 feet or more	( 0 points) XXX
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes	(20 points)
	No	( 0 points) XXX
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet	(20 points)
	200 feet or more, but less than 1000 feet	(10 points)
	1000 feet or more	( 0 points) XXX
<b>Ranking Score (Total Points)</b>		<b>0 points</b>

**If this is a pit closure:** (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if you are burying in place) onsite ☒ offsite ☐ If offsite, name of facility \_\_\_\_\_. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☒ Yes ☐ If yes, show depth below ground surface \_\_\_\_\_ ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments: All excess drilling fluids were removed. A burial pit was constructed and lined with a 12 mil poly liner. The drilling mud was mixed with dry soil to stiffen then placed in the burial pit. After all mud and drilling liner was removed the pit bottoms were sampled per NMOCD Guidelines. The samples did not meet NMOCD Standards and a delineation was performed. All contamination above 1,000 ppm chlorides was excavated and deep buried in a second burial trench constructed inside the old drilling pit that was lined with a new 12 mil poly liner. Both burial pits were capped with a 20 mil poly liner overlapping 3' in all directions. The site was then backfilled with clean native soil and contoured to the surrounding area. The site was seeded with BLM Seed Mixture #2.
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I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Date: 7/15/08  
Printed Name/Title: Brandi Barthels / Env. & Reg. Affairs Mgr. Signature: Brandi Barthels  
Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Accepted for record  
Printed Name/Title: \_\_\_\_\_ Signature: NMOCD JUL 28 2008

# Closure Report

Prepared for  
Tandem Energy

JUL 21 2008  
OCD-ARTESIA

**Ballard Grayburg San Andres #235**  
**API # 30-015-35970**  
**Eddy County, NM**

Prepared by  
***Elke Environmental, Inc.***

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

## ***Elke Environmental, Inc.***

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

July 2, 2008

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

Re: Drilling Pit Closure of Tandem Energy – Ballard Grayburg #235  
UL 'N' Sec. 5 T18S R29E Eddy County  
API# 30-015-35970

Mr. Mike Bratcher,

Elke Environmental was contracted by Tandem Energy to complete the closure of the Ballard Grayburg San Andres #235 drilling pit. The initial C-144 was filed and signed by Mike Bratcher on 6-4-08. Work started on 6-10-08, a burial pit was constructed and lined with a 12 mil liner. The drilling mud was mixed with dry soil to stiffen then placed in the burial pit. After all mud and liner was removed the pit bottoms were sampled per NMOCD Guidelines. The samples did not meet NMOCD Standards for this site. As per the conversation between Mike Bratcher and Robert Spangler (Elke) on 6-18-08, a delineation was performed and all chloride contamination above 1,000 ppm was excavated. A second burial pit was constructed inside the old drilling pit area and the contaminated soil was placed in that burial pit. The burial pits were capped with a 20 mil poly liner overlapping 3' in all directions and then the site was backfilled with clean native soil and contoured to the surrounding area. The site was seeded with BLM Seed Mixture #2. If you have any questions about the enclosed report please contact me at the office.

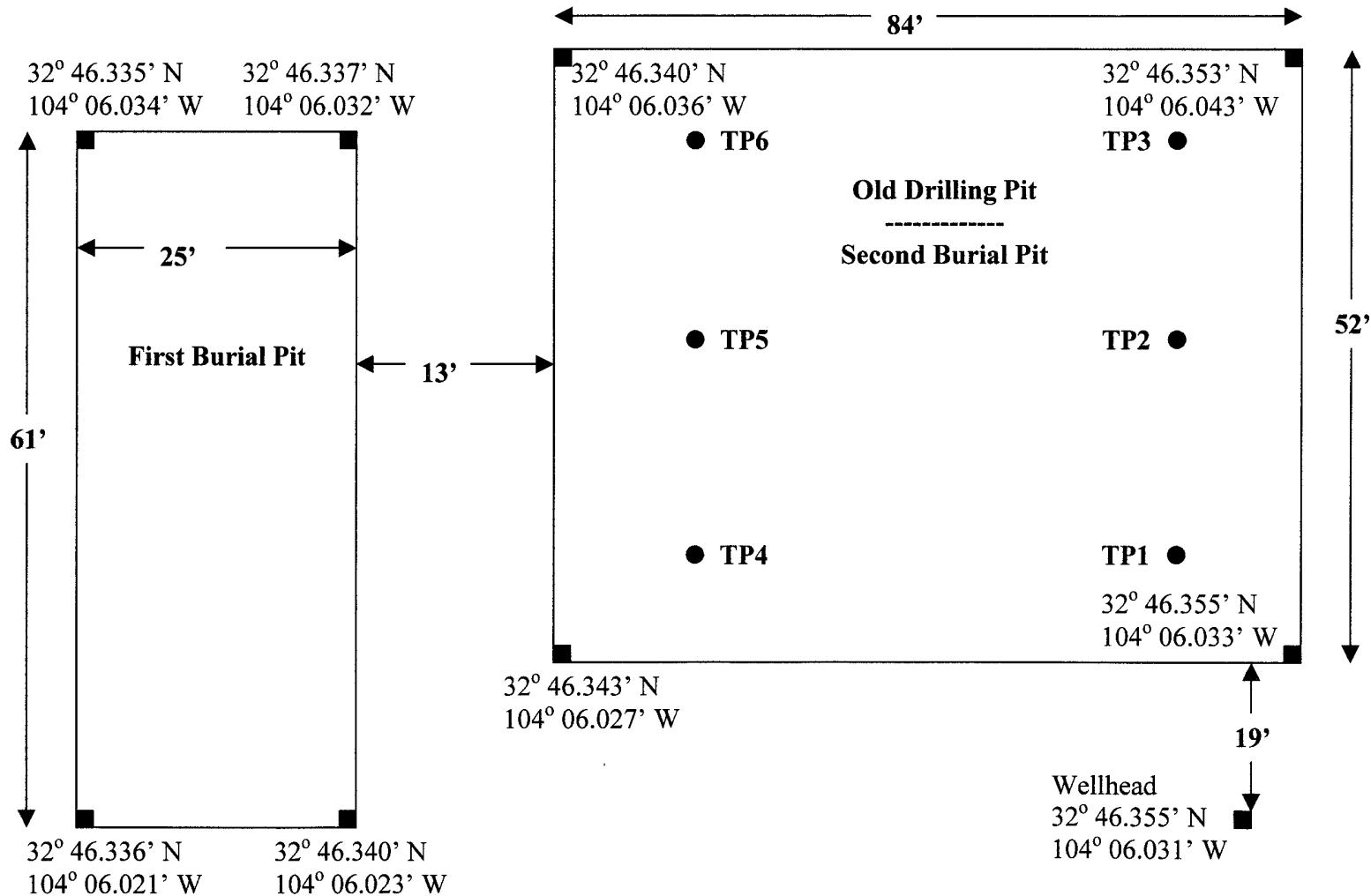
Sincerely,



Logan Anderson

Tandem Energy – Ballard Grayburg Unit #23-5

Plat Map



**Elke Environmental, Inc.**

P.O. Box 14167 Odessa, TX 79768

**Field Analytical Report Form****Client** Tandem Energy **Analyst** Robert Spangler**Site** Ballard Grayburg Unit #23-5

Sample ID	Date	Depth	TPH / PPM	CI / PPM	PID / PPM	GPS
TP1	6-17-08	5'		21,650		32° 46.351' N 104° 06.037' W
TP1	6-17-08	12'		2,181		32° 46.351' N 104° 06.037' W
TP1	6-17-08	14'		9,417		32° 46.351' N 104° 06.037' W
TP1	6-17-08	16'		3,410		32° 46.351' N 104° 06.037' W
TP1	6-17-08	18'		2,621		32° 46.351' N 104° 06.037' W
TP1	6-17-08	20'		1,660		32° 46.351' N 104° 06.037' W
TP1	6-17-08	22'		1,581		32° 46.351' N 104° 06.037' W
TP1	6-17-08	24'		238	14.5	32° 46.351' N 104° 06.037' W
TP2	6-17-08	5'		15,860		32° 46.350' N 104° 06.039' W
TP2	6-17-08	12'		5,398		32° 46.350' N 104° 06.039' W
TP2	6-17-08	14'		2,504		32° 46.350' N 104° 06.039' W
TP2	6-17-08	16'		7,823		32° 46.350' N 104° 06.039' W
TP2	6-17-08	18'		1,261		32° 46.350' N 104° 06.039' W
TP2	6-17-08	20'		300	19.1	32° 46.350' N 104° 06.039' W
TP3	6-17-08	5'		17,717		32° 46.349' N 104° 06.041' W
TP3	6-17-08	12'		5,429		32° 46.349' N 104° 06.041' W
TP3	6-17-08	14'		2,167		32° 46.349' N 104° 06.041' W

**Analyst Notes** \_\_\_\_\_

**Elke Environmental, Inc.**

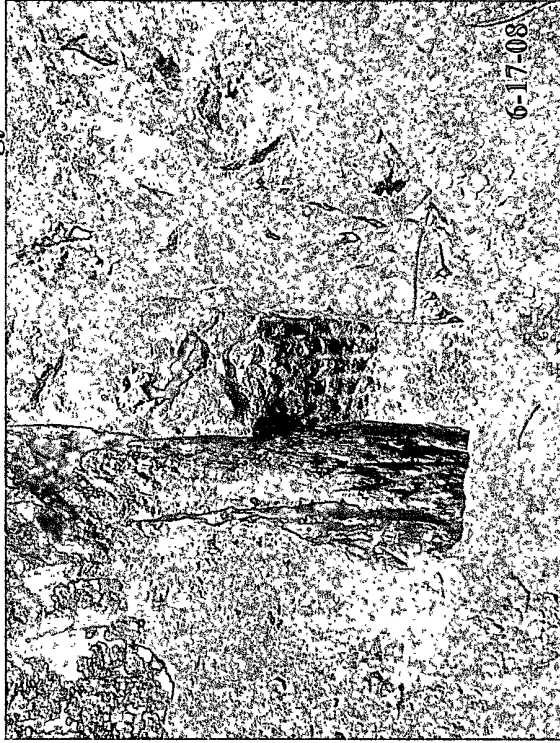
P.O. Box 14167 Odessa, TX 79768

**Field Analytical Report Form****Client** Tandem Energy **Analyst** Robert Spangler**Site** Ballard Grayburg Unit #23-5

Sample ID	Date	Depth	TPH / PPM	CI / PPM	PID / PPM	GPS
TP3	6-17-08	16'		1,951		32° 46.349' N 104° 06.041' W
TP3	6-17-08	18'		241	9.1	32° 46.349' N 104° 06.041' W
TP4	6-17-08	5'		25,218		32° 46.345' N 104° 06.029' W
TP4	6-17-08	12'		12,687		32° 46.345' N 104° 06.029' W
TP4	6-17-08	17'		292	11.9	32° 46.345' N 104° 06.029' W
TP5	6-17-08	5'		24,652		32° 46.344' N 104° 06.031' W
TP5	6-17-08	12'		11,064		32° 46.344' N 104° 06.031' W
TP5	6-17-08	17'		993		32° 46.344' N 104° 06.031' W
TP5	6-18-08	19'		119	15.7	32° 46.344' N 104° 06.031' W
TP6	6-17-08	5'		16,342		32° 46.343' N 104° 06.033' W
TP6	6-17-08	12'		2,124		32° 46.343' N 104° 06.033' W
TP6	6-17-08	14'		1,000		32° 46.343' N 104° 06.033' W
TP6	6-18-08	16'		257	17.3	32° 46.343' N 104° 06.033' W
Background	6-17-08	Surface		179		

**Analyst Notes** \_\_\_\_\_

**Tandem Energy – Ballard Grayburg San Andres #235**



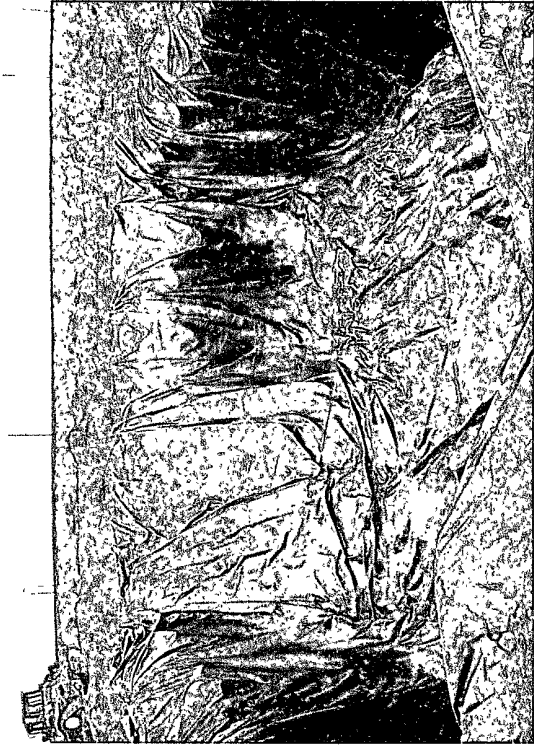
Delineation trench below old drilling pit.



Delineation trench below old drilling pit.



Excavation of contaminated soil below old drilling pit.



Construction of second burial pit inside old drilling pit area.

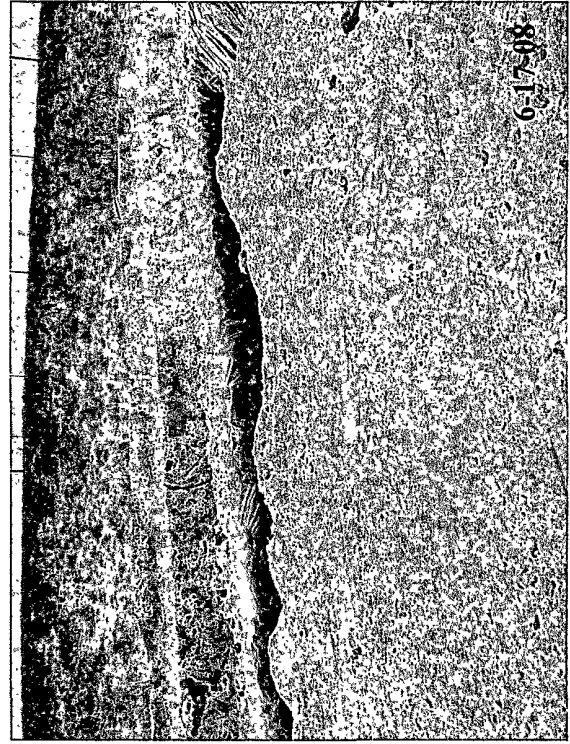
**Tandem Energy – Ballard Grayburg San Andres #235**



Drilling pit before closure.



First burial pit lined with 12 mil poly liner.



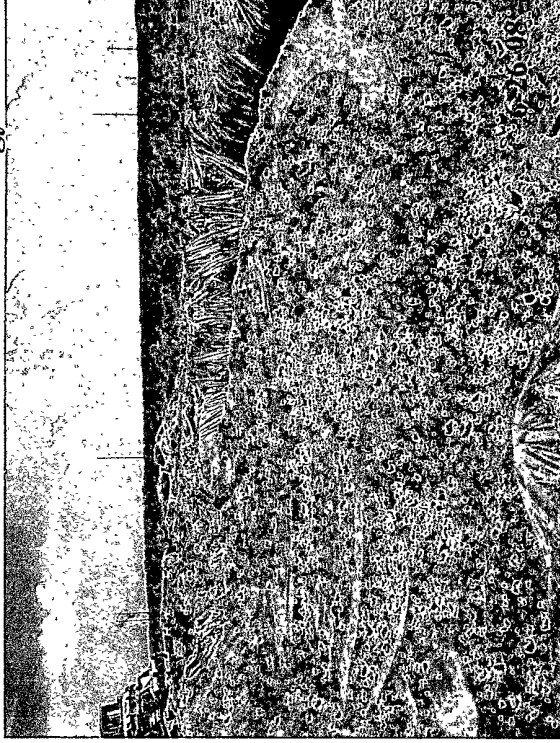
First burial pit filled with stiffened drilling mud.



First burial pit capped with 20 mil poly liner.



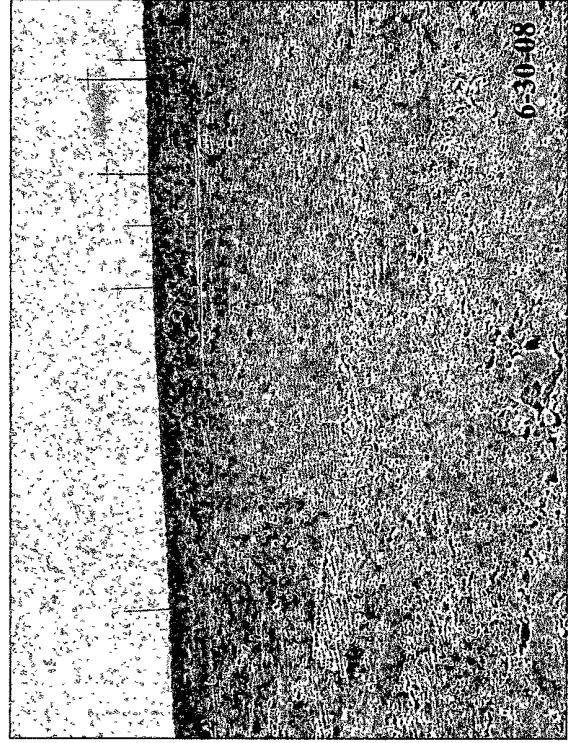
**Tandem Energy – Ballard Grayburg San Andres #235**



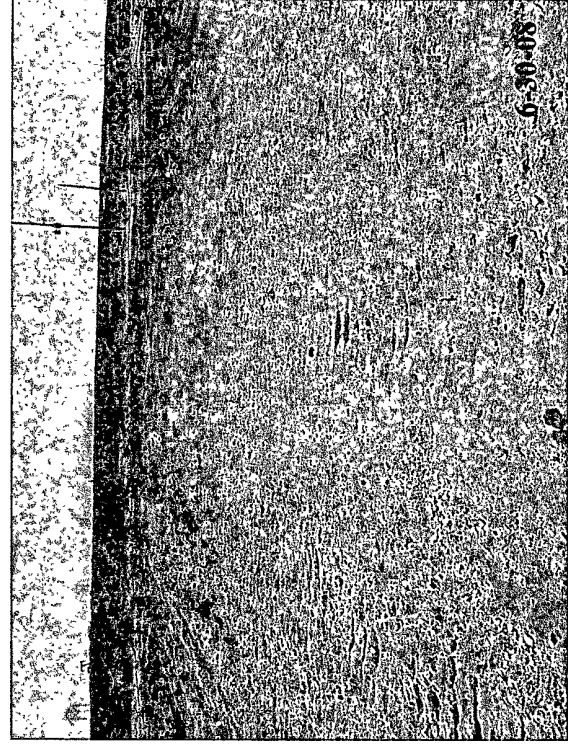
Second burial pit filled with contaminated soil.



Second burial pit capped with 20 mil poly liner.



Site after backfill and contouring of clean soil.



Site after backfill and contouring of clean soil.

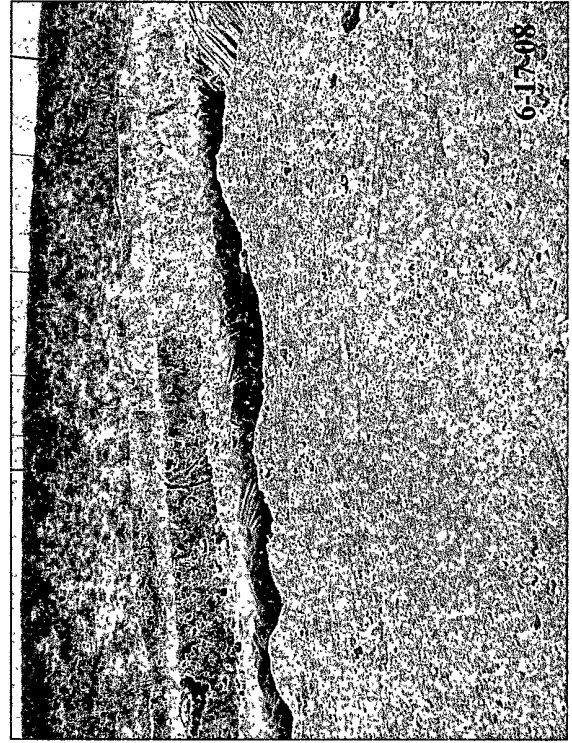
**Tandem Energy – Ballard Grayburg San Andres #235**



Drilling pit before closure.



First burial pit lined with 12 mil poly liner.

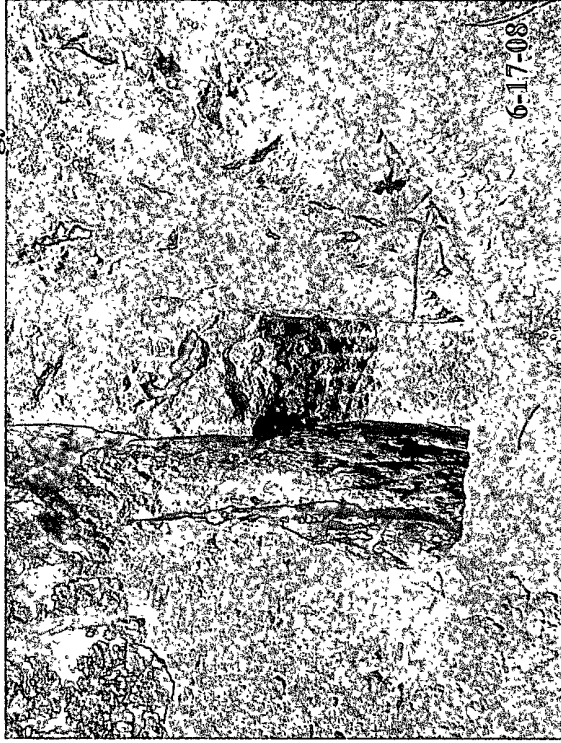


First burial pit filled with stiffened drilling mud.

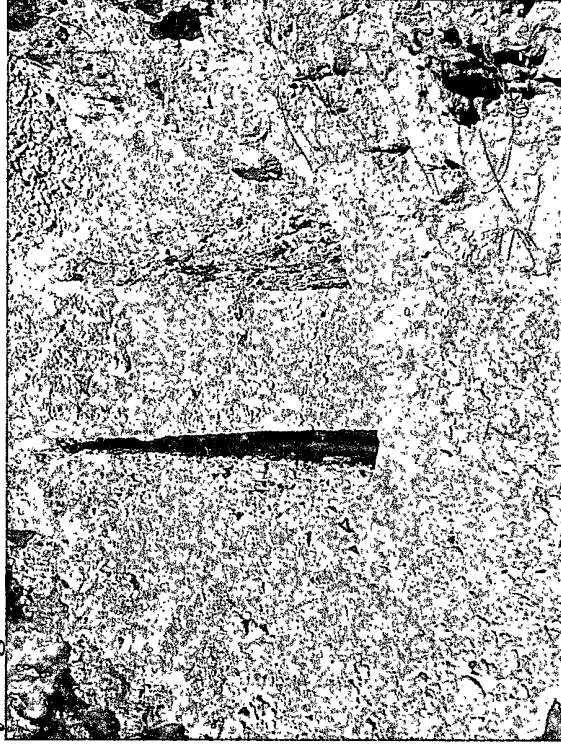


First burial pit capped with 20 mil poly liner.

**Tandem Energy – Ballard Grayburg San Andres #235**



Delineation trench below old drilling pit.



Delineation trench below old drilling pit.



Excavation of contaminated soil below old drilling pit.



Construction of second burial pit inside old drilling pit area.



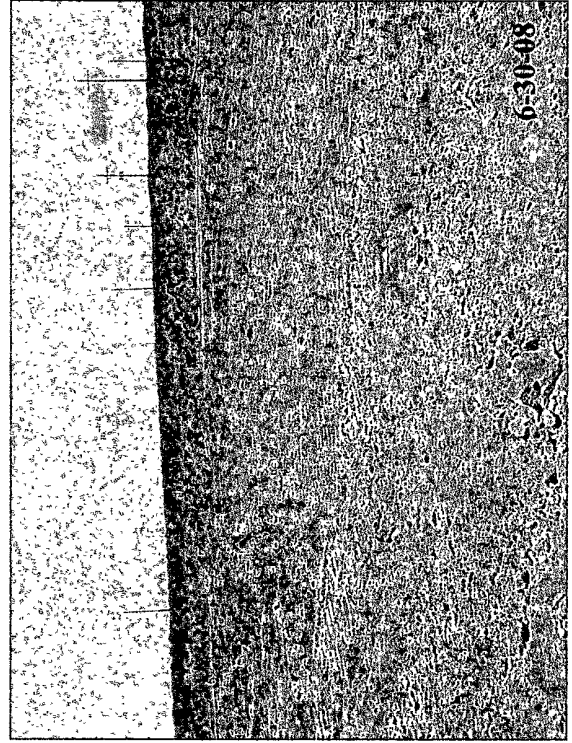
**Tandem Energy – Ballard Grayburg San Andres #235**



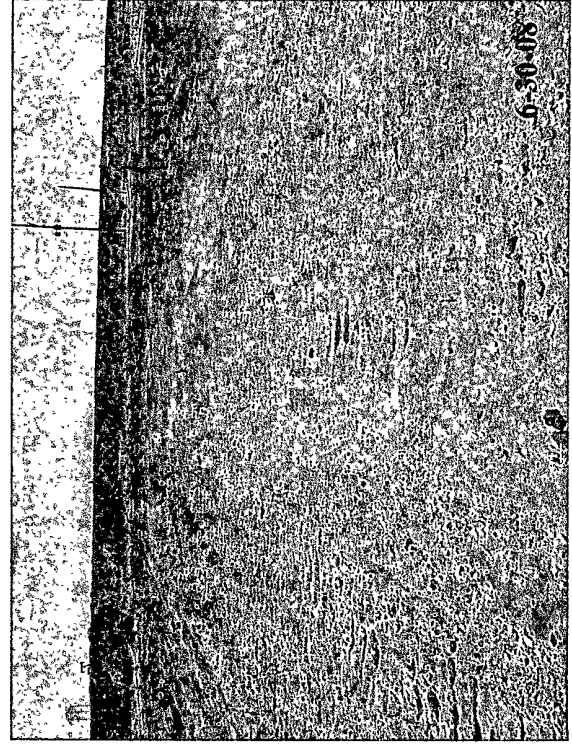
Second burial pit filled with contaminated soil.



Second burial pit capped with 20 mil poly liner.



Site after backfill and contouring of clean soil.



Site after backfill and contouring of clean soil.

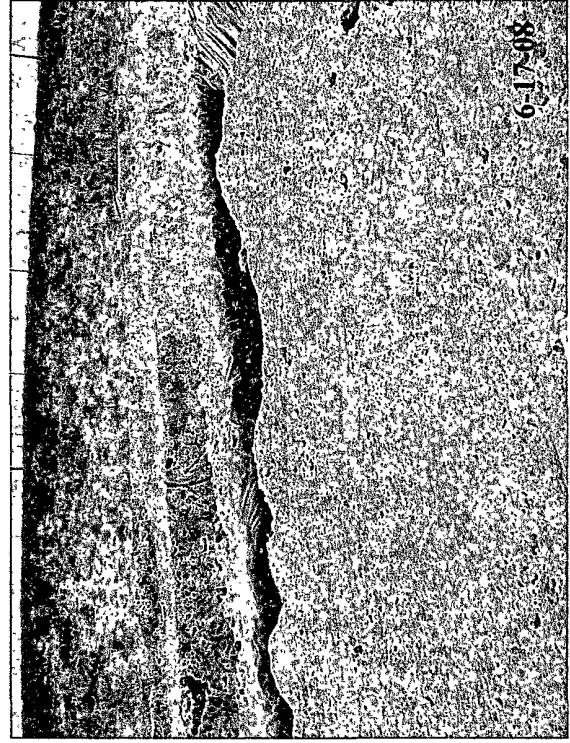
**Tandem Energy – Ballard Grayburg San Andres #235**



Drilling pit before closure.



First burial pit lined with 12 mil poly liner.

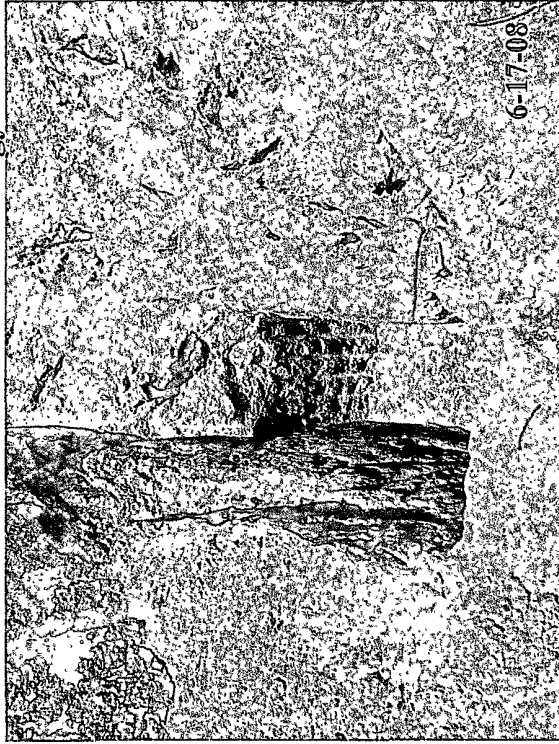


First burial pit filled with stiffened drilling mud.

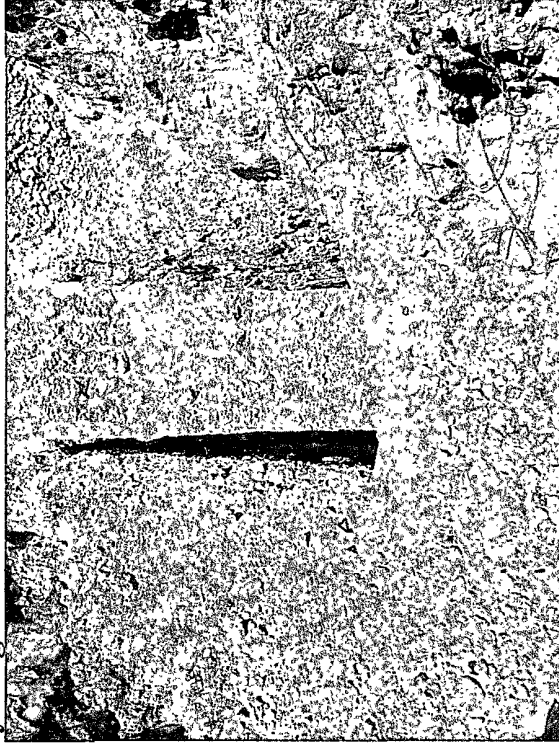


First burial pit capped with 20 mil poly liner.

**Tandem Energy – Ballard Grayburg San Andres #235**



Delineation trench below old drilling pit.



Delineation trench below old drilling pit.



Excavation of contaminated soil below old drilling pit.



Construction of second burial pit inside old drilling pit area.



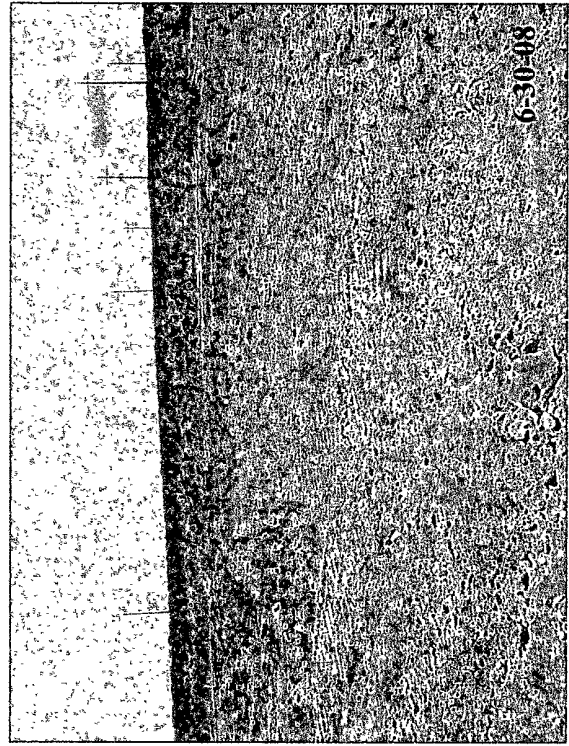
**Tandem Energy – Ballard Grayburg San Andres #235**



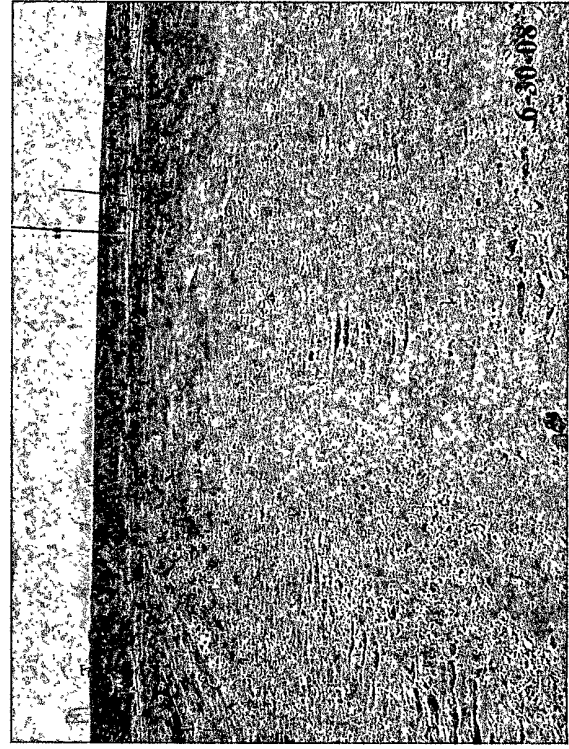
Second burial pit filled with contaminated soil.



Second burial pit capped with 20 mil poly liner.



Site after backfill and contouring of clean soil.

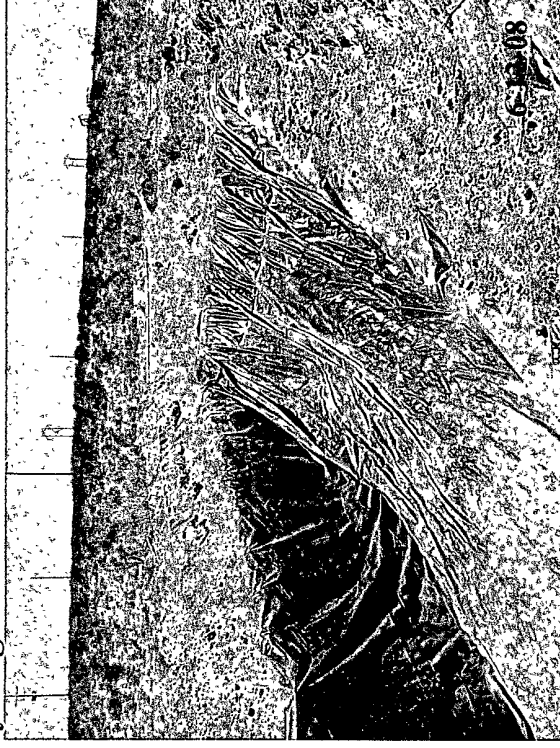


Site after backfill and contouring of clean soil.

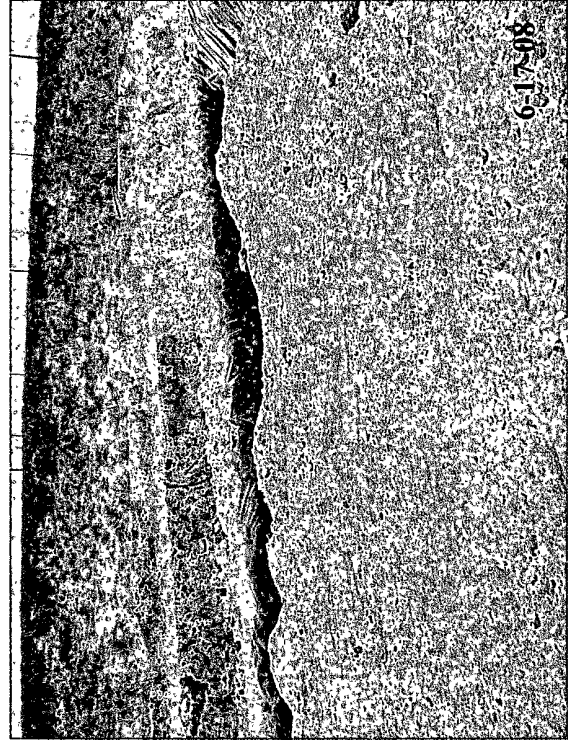
**Tandem Energy – Ballard Grayburg San Andres #235**



Drilling pit before closure.



First burial pit lined with 12 mil poly liner.



First burial pit filled with stiffened drilling mud.



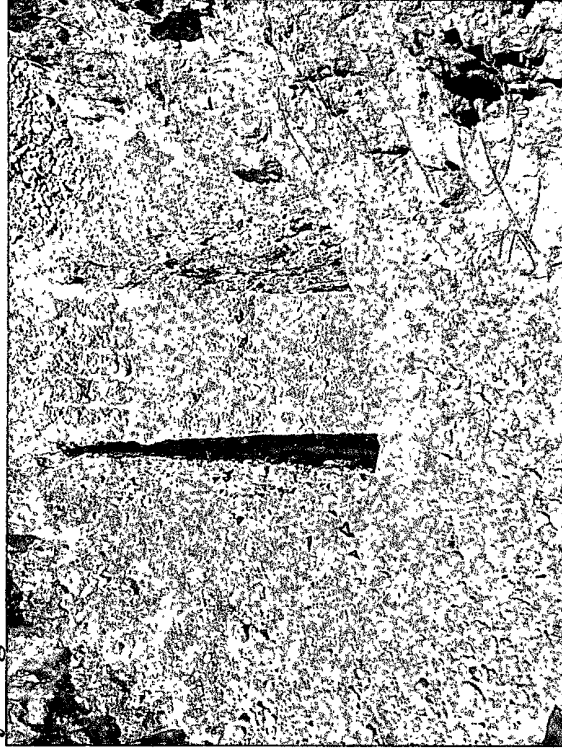
First burial pit capped with 20 mil poly liner.



**Tandem Energy – Ballard Grayburg San Andres #235**



Delineation trench below old drilling pit.



Delineation trench below old drilling pit.

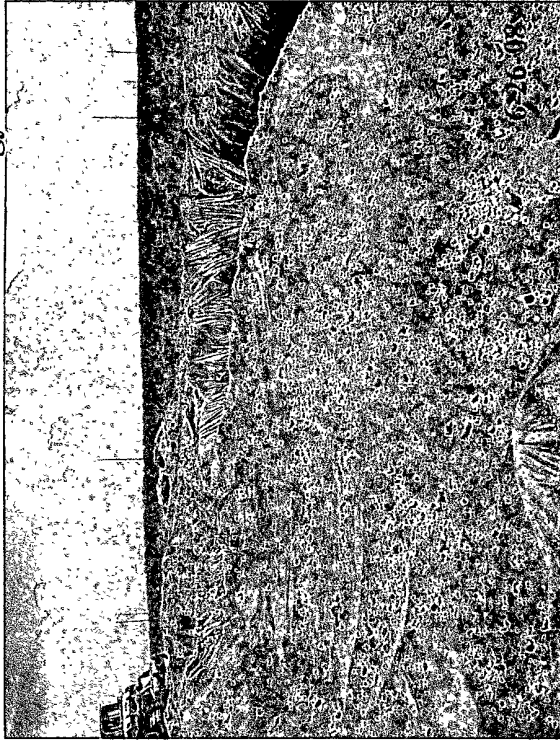


Excavation of contaminated soil below old drilling pit.



Construction of second burial pit inside old drilling pit area.

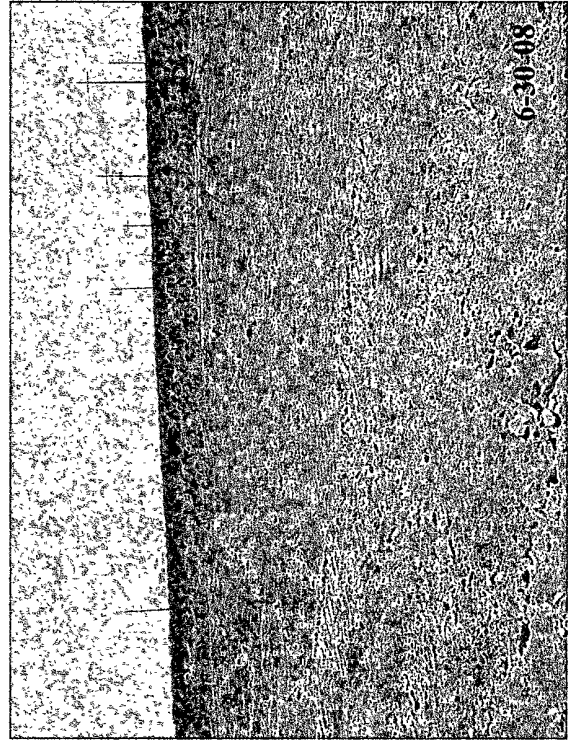
**Tandem Energy – Ballard Grayburg San Andres #235**



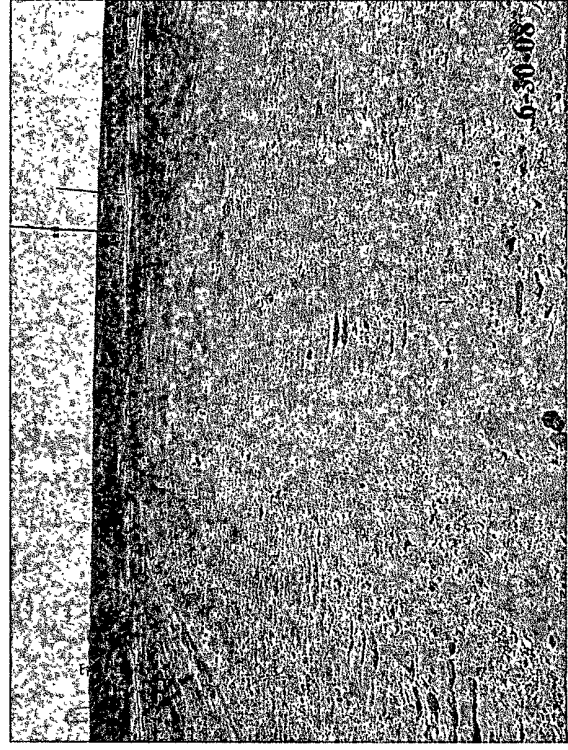
Second burial pit filled with contaminated soil.



Second burial pit capped with 20 mil poly liner.



Site after backfill and contouring of clean soil.



Site after backfill and contouring of clean soil.

# **Analytical Report 306173**

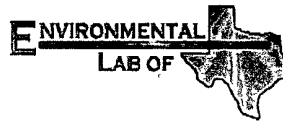
**for**

**Elke Environmental, Inc.**

**Project Manager: Logan Anderson**

**Tandem Energy**

**26-JUN-08**



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

Texas certification numbers:  
Houston, TX T104704215

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

South Carolina certification numbers:  
Norcross(Atlanta), GA 98015

North Carolina certification numbers:  
Norcross(Atlanta), GA 483

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



26-JUN-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: **306173**  
**Tandem Energy**  
Project Address: Ballard Grayburg San Andres # 235

**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 306173. 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. 306173 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

***Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.***

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

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



## Sample Cross Reference 306173



Elke Environmental, Inc., Odessa, TX

Tandem Energy

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TP1 @ 24' BGS	S	Jun-17-08 17:00	24 ft	306173-001
TP2 @ 20' BGS	S	Jun-17-08 16:00	20 ft	306173-002
TP3 @ 18' BGS	S	Jun-17-08 15:30	18 ft	306173-003
TP4 @ 17' BGS	S	Jun-17-08 14:00	17 ft	306173-004
TP5 @ 19' BGS	S	Jun-17-08 16:00	19 ft	306173-005
TP6 @ 16' BGS	S	Jun-17-08 16:15	16 ft	306173-006



# Certificate of Analysis Summary 306173

Elke Environmental, Inc., Odessa, TX

Project Name: Tandem Energy

Project Id:

Contact: Logan Anderson

Project Location: Ballard Grayburg San Andres # 235

Date Received in Lab: Thu Jun-19-08 10:31 am


Report Date: 26-JUN-08

Project Manager: Brent Barron, II

Analysis Requested	Lab Id:	306173-001	306173-002	306173-003	306173-004	306173-005	306173-006
	Field Id:	TP1 @ 24' BGS	TP2 @ 20' BGS	TP3 @ 18' BGS	TP4 @ 17' BGS	TP5 @ 19' BGS	TP6 @ 16' BGS
	Depth:	24 ft	20 ft	18 ft	17 ft	19 ft	16 ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jun-17-08 17:00	Jun-17-08 16:00	Jun-17-08 15:30	Jun-17-08 14:00	Jun-17-08 16:00	Jun-17-08 16:15
Inorganic Anions by EPA 300	Extracted:						
	Analyzed:	Jun-19-08 15:47	Jun-19-08 15:47	Jun-19-08 15:47	Jun-19-08 15:47	Jun-19-08 15:47	Jun-19-08 15:47
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		228 5.00	129 5.00	200 5.00	188 5.00	83.7 5.00	65.5 5.00
Percent Moisture	Extracted:						
	Analyzed:	Jun-25-08 08:20	Jun-20-08 08:20	Jun-20-08 08:20	Jun-20-08 08:20	Jun-20-08 08:20	Jun-20-08 08:20
	Units/RL:	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		6.77 1.00	3.47 1.00	4.73 1.00	6.12 1.00	3.63 1.00	5.97 1.00
TPH by SW8015 Mod	Extracted:	Jun-19-08 16:15	Jun-19-08 16:15	Jun-19-08 16:15	Jun-19-08 16:15	Jun-19-08 16:15	Jun-19-08 16:15
	Analyzed:	Jun-20-08 02:27	Jun-20-08 02:58	Jun-20-08 03:28	Jun-20-08 03:57	Jun-20-08 04:27	Jun-20-08 04:57
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons		ND 11.2	ND 15.5	ND 15.7	ND 16.0	ND 15.6	ND 16.0
C12-C28 Diesel Range Hydrocarbons		12.5 11.2	ND 15.5	ND 15.7	ND 16.0	ND 15.6	ND 16.0
C28-C35 Oil Range Hydrocarbons		ND 11.2	ND 15.5	ND 15.7	ND 16.0	ND 15.6	ND 16.0
Total TPH		12.5	ND	ND	ND	ND	ND

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

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

  
Brent Barron  
Odessa Laboratory Director



## Flagging Criteria

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

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## Form 2 - Surrogate Recoveries

Project Name: Tandem Energy



Work Order #: 306173

Project ID:

Lab Batch #: 726099

Sample: 306173-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	95.6	100	96	70-135	
o-Terphenyl	53.2	50.0	106	70-135	

Lab Batch #: 726099

Sample: 306173-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	56.5	50.0	113	70-135	

Lab Batch #: 726099

Sample: 306173-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	94.4	100	94	70-135	
o-Terphenyl	52.1	50.0	104	70-135	

Lab Batch #: 726099

Sample: 306173-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	94.7	100	95	70-135	
o-Terphenyl	51.9	50.0	104	70-135	

Lab Batch #: 726099

Sample: 306173-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	95.2	100	95	70-135	
o-Terphenyl	52.5	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: Tandem Energy



Work Order #: 306173

Project ID:

Lab Batch #: 726099

Sample: 306173-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.8	100	93	70-135	
o-Terphenyl	51.2	50.0	102	70-135	

Lab Batch #: 726099

Sample: 306173-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	91.1	100	91	70-135	
o-Terphenyl	50.7	50.0	101	70-135	

Lab Batch #: 726099

Sample: 306173-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	94.2	100	94	70-135	
o-Terphenyl	52.0	50.0	104	70-135	

Lab Batch #: 726099

Sample: 510994-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	60.3	50.0	121	70-135	

Lab Batch #: 726099

Sample: 510994-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

SURROGATE RECOVERY STUDY					
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	97.5	100	98	70-135	
o-Terphenyl	54.0	50.0	108	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: Tandem Energy



Work Order #: 306173

Project ID:

Lab Batch #: 726099

Sample: 510994-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	59.8	50.0	120	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: Tandem Energy

Work Order #: 306173

Project ID:

Lab Batch #: 725948

Sample: 725948-1-BKS

Matrix: Solid

Date Analyzed: 06/19/2008

Date Prepared: 06/19/2008

Analyst: LATCOR

Reporting Units: mg/kg

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	11.0	110	75-125	

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

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



## BS / BSD Recoveries



**Project Name:** Tandem Energy

**Work Order #:** 306173

**Analyst:** ASA

**Date Prepared:** 06/19/2008

**Project ID:**

**Date Analyzed:** 06/20/2008

**Lab Batch ID:** 726099

**Sample:** 510994-1-BKS

**Batch #:** 1

**Matrix:** Solid

**Units:** mg/kg

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

TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	857	86	1000	956	96	11	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	860	86	1000	949	95	10	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



# Form 3 - MS Recoveries



Project Name: Tandem Energy

Work Order #: 306173

Lab Batch #: 725948

Project ID:

Date Analyzed: 06/19/2008

Date Prepared: 06/19/2008

Analyst: LATCOR

QC- Sample ID: 306150-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

## MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	6.93	100	136	129	75-125	X

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

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

All Results are based on MDL and Validated for QC Purposes



# Form 3 - MS / MSD Recoveries



Project Name: Tandem Energy

Work Order #: 306173

Project ID:

Lab Batch ID: 726099

QC- Sample ID: 306173-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/20/2008

Date Prepared: 06/19/2008

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	749	643	86	749	605	81	6	70-135	35	
C12-C28 Diesel Range Hydrocarbons	12.5	749	592	77	749	544	71	8	70-135	35	

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

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

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



## Sample Duplicate Recovery



Project Name: Tandem Energy

Work Order #: 306173

Lab Batch #: 725948  
Date Analyzed: 06/19/2008  
QC- Sample ID: 306150-001 D  
Reporting Units: mg/kg

Date Prepared: 06/19/2008  
Batch #: 1

Project ID:  
Analyst: LATCOR  
Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Inorganic Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	6.93	5.57	22	20	F

Lab Batch #: 725954  
Date Analyzed: 06/20/2008  
QC- Sample ID: 306150-001 D  
Reporting Units: %

Date Prepared: 06/20/2008  
Batch #: 1

Analyst: IRO  
Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	10.0	8.99	11	20	

Lab Batch #: 726310  
Date Analyzed: 06/25/2008  
QC- Sample ID: 306435-004 D  
Reporting Units: %

Date Prepared: 06/25/2008  
Batch #: 1

Analyst: IRO  
Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	11.1	10.9	2	20	

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

# Environmental Lab of Texas

A Xenco Laboratories Company

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12000 West I-20 East  
Odessa, Texas 79765

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

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

Sampler Signature [Signature]

Fax No 432-366-0884

e-mail la\_elkeen@yahoo.com

Project Name Tadern Energy

Project #

Project Loc: Wallard Grayburg San Andres #235

PO #

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only)

ORDER #: 3006173

ORDER #:	300173											Preservation & # of Containers										Matrix										TOTAL																																																																																																																																																																																																																																																																																																																																																																																																																																										
LAB # (lab use only)	FIELD CODE										Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> SO <sub>4</sub>	None	Other (Specify)	Time/Date/Temp. of Storage	Time/Date/Temp. of Analysis	TPH	TX 1000	TX 1001	Calcrete (Ca, Mg, Na, K)	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> )	Ammonia (NH <sub>3</sub> 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Special Instructions:

Retrieved by <u>[Signature]</u>	Date <u>6-19-08</u>	Time <u>10:31</u>	Received by <u>[Signature]</u>	Date <u>6-19-08</u>	Time <u>10:31</u>	Laboratory Comments:
Retrieved by <u>[Signature]</u>	Date <u></u>	Time <u></u>	Received by <u></u>	Date <u></u>	Time <u></u>	Sample Containers Intact?
Retrieved by <u></u>	Date <u></u>	Time <u></u>	Received by <u></u>	Date <u></u>	Time <u></u>	VOCs Free of Headspace?
						Labels on container(s)
						Custody seals on container(s)
						Custody seals on cooler(s)
						Sample Hand Delivered
						by Sampler/Client Rep?
						by Courier?
						UPS DHL FedEx Lone Star
						Temperature Upon Receipt



# Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client ELKE Env.  
 Date/ Time 6/19/08 10:31  
 Lab ID # 304173  
 Initials AL

## Sample Receipt Checklist

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

## Variance Documentation

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

Corrective Action Taken

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

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-144  
June 1, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.  
For downstream facilities, submit to Santa Fe office

### Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☒ No ☐

Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

Operator: <u>Tandem Energy Corporation</u> Telephone: <u>432-686-7136</u> e-mail address: <u>tsport@tandem-energy.com</u>				
Address: <u>P.O. Box 1459, Midland, TX 79702</u>				
Facility or well name: <u>Ballard Grayburg San Andres #235 API #: 30-015-35970</u> U/A. or Qtr/Qtr <u>N</u> Sec <u>5</u> T <u>18S</u> R <u>29E</u>				
County: <u>Eddy</u> Latitude <u>32.7724208</u> Longitude <u>104.1002034</u> NAD: 1927 <input checked="" type="checkbox"/> 1983 <input type="checkbox"/>				
Surface Owner: Federal <input checked="" type="checkbox"/> State <input type="checkbox"/> Private <input type="checkbox"/> Indian <input type="checkbox"/>				
<table border="1"> <tr> <td> <b>Pit</b>  Type: Drilling <input checked="" type="checkbox"/> Production <input type="checkbox"/> Disposal <input type="checkbox"/>  Workover <input type="checkbox"/> Emergency <input type="checkbox"/>  Lined <input checked="" type="checkbox"/> Unlined <input type="checkbox"/>  Liner type: Synthetic <input checked="" type="checkbox"/> Thickness <u>12</u> mil Clay <input type="checkbox"/>  Pit Volume <u>      </u> bbl </td> <td> <b>Below-grade tank</b>  Volume: <u>      </u> bbl Type of fluid: <u>      </u>  Construction material: <u>      </u>  Double-walled, with leak detection? Yes <input type="checkbox"/> If not, explain why not. <u>      </u> </td> </tr> </table>			<b>Pit</b> Type: Drilling <input checked="" type="checkbox"/> Production <input type="checkbox"/> Disposal <input type="checkbox"/> Workover <input type="checkbox"/> Emergency <input type="checkbox"/> Lined <input checked="" type="checkbox"/> Unlined <input type="checkbox"/> Liner type: Synthetic <input checked="" type="checkbox"/> Thickness <u>12</u> mil Clay <input type="checkbox"/> Pit Volume <u>      </u> bbl	<b>Below-grade tank</b> Volume: <u>      </u> bbl Type of fluid: <u>      </u> Construction material: <u>      </u> Double-walled, with leak detection? Yes <input type="checkbox"/> If not, explain why not. <u>      </u>
<b>Pit</b> Type: Drilling <input checked="" type="checkbox"/> Production <input type="checkbox"/> Disposal <input type="checkbox"/> Workover <input type="checkbox"/> Emergency <input type="checkbox"/> Lined <input checked="" type="checkbox"/> Unlined <input type="checkbox"/> Liner type: Synthetic <input checked="" type="checkbox"/> Thickness <u>12</u> mil Clay <input type="checkbox"/> Pit Volume <u>      </u> bbl	<b>Below-grade tank</b> Volume: <u>      </u> bbl Type of fluid: <u>      </u> Construction material: <u>      </u> Double-walled, with leak detection? Yes <input type="checkbox"/> If not, explain why not. <u>      </u>			
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) ( 0 points) XXX		
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) ( 0 points) XXX		
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) ( 0 points) XXX		
Ranking Score (Total Points)		0 points		

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks (2) Indicate disposal location: (check the onsite box if you are burying in place) onsite ☒ offsite ☐ If offsite, name of facility        (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☒ Yes ☐ If yes, show depth below ground surface        ft. and attach sample results.

(5) Attach soil sample results and a diagram of sample locations and excavations

Additional Comments: All excess drilling fluids will be removed. A burial pit will be constructed and lined with a 12 mil liner. The drilling mud will be mixed with dry soil to stiffen then placed in the burial pit. After all mud and drilling liner has been removed the pit bottoms will be sampled per NMOCD Guidelines. After samples meet NMOCD Standards and NMOCD gives permission the pit will be backfilled with clean native soil and contoured to the surrounding area. The site will be seeded with Appropriate BLM Seed Mixture.
(23-5)
NMOCD Artesia will be given 48 hrs notice before closure starts and before any sampling.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Date: 5-30-08

Printed Name/Title Logan Anderson - Agent

Signature [Signature]

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:

Printed Name/Title       

Signature [Signature]

Signed By [Signature]

JUN 04 2008

Date

NOTIFY OCD 24 HOURS PRIOR to beginning closure and 24 HOURS PRIOR obtaining samples. Samples are to be obtained from pit area and analyses submitted to OCD prior to back-filling.

If burial trench is to be constructed in pit area, samples are to be obtained and analyses submitted to OCD PRIOR to lining trench.

Closure of this pit may be subject to requirements per NMAC 19.15.17