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

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.

For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application
Type of action:  Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method  Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method  Modification to an existing permit  Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method
Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request  Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.
I. Operator: Forest Oil Address: 3504 NW County Rd Hobbs, NM 88240 Facility or well name: Skelly Unit #89
API Number: 30-015-05429 OCD Permit Number:  U/L or Qtr/Qtr B Section 28 Township 17S Range 31E County: Eddy  Center of Proposed Design: Latitude Longitude NAD: 1927 1983  Surface Owner: Federal State Private Tribal Trust or Indian Allotment
2.   Pit: Subsection F or G of 19.15.17.11 NMAC     Temporary:
3.  Closed-loop System: Subsection H of 19.15.17.11 NMAC  Type of Operation: P&A Drilling a new well Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)  Drying Pad Above Ground Steel Tanks Haul-off Bins Other  Lined Unlined Liner type: Thickness mil LLDPE HDPE PVC Other  Liner Seams: Welded Factory Other
Below-grade tank: Subsection I of 19.15.17.11 NMAC   Volume:
5.  Alternative Method: Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

Anal Closure DATE 1/16/09

Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks)  Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, histitution or church)  Four foot height, four strands of barbed wire evenly spaced between one and four feet  Alternate. Please specify	nospital,
7.	
Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)  Screen Netting Other  Monthly inspections (If netting or screening is not physically feasible)	
8.	
Signs: Subsection C of 19.15.17.11 NMAC	
12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers	
☐ Signed in compliance with 19.15.3.103 NMAC	
9,	
Administrative Approvals and Exceptions:	
Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.  Please check a box if one or more of the following is requested, if not leave blank:	
Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau of	office for
consideration of approval.	
Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.	
Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of accept material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate of fice or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of a Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to dryitabove-grade tanks associated with a closed-loop system.	priate district pproval. ing pads or
Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank.  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).  - Topographic map; Visual inspection (certification) of the proposed site	Yes No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.  (Applies to temporary, emergency, or cavitation pits and below-grade tanks)  - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No ☐ NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.  (Applies to permanent pits)	☐ Yes ☐ No ☐ NA
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.  - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.  - Written confirmation or verification from the municipality; Written approval obtained from the municipality	Yes No
Within 500 feet of a wetland US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within the area overlying a subsurface mine Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
Within an unstable area.  - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	Yes No
Within a 100-year floodplain FEMA map	☐ Yes ☐ No

Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC  Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.  Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC  Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC  Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC  Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC  Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC  Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC  Previously Approved Design (attach copy of design) API Number:  or Permit Number:
12. Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.
Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9  Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC  Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC  Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC  Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
Previously Approved Design (attach copy of design) API Number:
☐ Previously Approved Operating and Maintenance Plan API Number:(Applies only to closed-loop system that use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)
above ground steet tanks or natit-off oths and propose to implement waste removal for closure)
Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC  Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.    Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC   Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC   Climatological Factors Assessment   Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC   Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC   Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC   Quality Control/Quality Assurance Construction and Installation Plan   Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC   Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC   Nuisance or Hazardous Odors, including H <sub>2</sub> S, Prevention Plan   Emergency Response Plan   Oil Field Waste Stream Characterization   Monitoring and Inspection Plan   Erosion Control Plan   Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
Proposed Closure: 19.15.17.13 NMAC Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.  Type: Drilling Workover Emergency Cavitation P&A Permanent Pit Below-grade Tank Closed-loop System Alternative  Proposed Closure Method: Waste Excavation and Removal Waste Removal (Closed-loop systems only) On-site Closure Method (Only for temporary pits and closed-loop systems) In-place Burial On-site Trench Burial Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.  Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC  Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC  Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)  Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC  Re-vegetation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

r e i i								
Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if n facilities are required.								
Disposal Facility Name: Disposal Facility Permit Number:								
Disposal Facility Name: Disposal Facility Permit Number:								
Will any of the proposed closed-loop system operations and associated activities occur on or in areas that will not be used for future serv  Yes (If yes, please provide the information below) No	vice and operations?							
Required for impacted areas which will not be used for future service and operations:  Soil Backfill and Cover Design Specifications based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC  Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC  Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC	2							
Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable sour provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate distriction considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justif demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.	rict office or may be							
Ground water is less than 50 feet below the bottom of the buried waste.  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	Yes No							
Ground water is between 50 and 100 feet below the bottom of the buried waste  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA							
Ground water is more than 100 feet below the bottom of the buried waste.  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA							
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).  - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No							
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.  - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No							
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.  - Written confirmation or verification from the municipality; Written approval obtained from the municipality	Yes No							
Within 500 feet of a wetland.  - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No							
Within the area overlying a subsurface mine Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No							
Within an unstable area.  - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☐ No							
Within a 100-year floodplain FEMA map	☐ Yes ☐ No							
Dn-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan by a check mark in the box, that the documents are attached.  Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC  Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC  Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC  Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.13 NMAC  Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC  Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC  Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC  Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC  Re-vegetation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC	15.17.11 NMAC							

Operator Application Certification:
I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.
Name (Print): Title:
Signature: Date:
e-mail address: Telephone:
20. OCD Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment)
OCD Representative Signature: Approval Date:
Title: OCD Permit Number:
21. Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.
☐ Closure Completion Date: 1-16-2009
22. Closure Method: Waste Excavation and Removal On-Site Closure Method Alternative Closure Method Waste Removal (Closed-loop systems only) If different from approved plan, please explain.
Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.  Disposal Facility Name: Disposal Facility Permit Number:  Disposal Facility Name: Disposal Facility Permit Number:  Were the closed-loop system operations and associated activities performed on or in areas that will not be used for future service and operations? Yes (If yes, please demonstrate compliance to the items below) No  Required for impacted areas which will not be used for future service and operations:
☐ Site Reclamation (Photo Documentation) ☐ Soil Backfilling and Cover Installation ☐ Re-vegetation Application Rates and Seeding Technique
Closure Report Attachment Checklist: Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.    Proof of Closure Notice (surface owner and division)   Proof of Deed Notice (required for on-site closure)   Plot Plan (for on-site closures and temporary pits)   Confirmation Sampling Analytical Results (if applicable)   Waste Material Sampling Analytical Results (required for on-site closure)   Disposal Facility Name and Permit Number   Soil Backfilling and Cover Installation   Re-vegetation Application Rates and Seeding Technique   Site Reclamation (Photo Documentation)   On-site Closure Location: Latitude
25.  Operator Closure Certification:  I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.  Name (Print): Rick Rickman  Title: HSE Specialist  1-28-09  Date:
e-mail address: rdrickman@forestoil.com  Telephone: 575-392-9797

Accepted for record NMOCD

FEB 0 3 2009

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

			Rele	ease Notific	cation	and Co	rrective A	ctioi	1						
						OPERATOR									
Name of Co	mpany – I	orest Oil			(	Contact – Rick Rickman									
Address - 3			obbs, NM	1 88240		Telephone No. – 575-392-9797									
Facility Nar	<u>ne – Skell</u>	y Unit #89				Facility Typ	e – Workover P	it							
Surface Ow	ner - State			Mineral C	)wner -	State			Lease N	lo. API # 3	0-015	-05429			
				LOCA	ATION	OF REI	LEASE								
Unit Letter B	Section 28	Township 17S	Range 31E	Feet from the		South Line	Feet from the	East/	West Line	County Eddy Cou	nty				
			La	<del></del>		Longitud OF REL	e_103° 52.356' EASE	<u>W_</u>		I					
Type of Rele							Release - Unkno	wn	Volume F	Recovered -	Unkno	wn			
Source of Re							lour of Occurrenc	e - ?	Date and	Hour of Dis	covery	<b>- 12-24-08</b>			
Was Immedi	ate Notice (		Yes [	No ⊠ Not R	equired	If YES, To	Whom?								
By Whom?						Date and H									
Was a Water	course Read		Yes 🗵	No		If YES, Vo	olume Impacting t	he Wa	tercourse.						
Describe Cau were above the			dial Action	n Taken.* After d	rilling c	ontents and li	ner were hauled t	o Disp	osal. Bottor	ns and walls	s were t	tested and			
Describe Are soil above the and disposal	e RAL's we	re hauled to the	Action Tak he Disposa	cen.* The site was	s delinea e soil wa	ted vertically is backfilled i	and horizontally nto the excavation	to the l	RAL's of th lat map, fiel	e pit closure d analytical	plan. , lab co	All impacted nfirmations			
regulations a public health should their of	Il operators or the environerations had need to be operations had need to be	are required to comment. The ave failed to a ddition, NMC	o report ar acceptance adequately OCD accep	nd/or file certain reports of a C-141 report investigate and reports of the control of the contr	elease ne ort by the emediate	otifications are NMOCD m contaminati	knowledge and und perform correct arked as "Final R on that pose a three the operator of	tive ac eport" eat to g	tions for rel does not rel round water	eases which ieve the ope r, surface wa	may en rator of ater, hu	ndanger f liability man health			
Signature:		[/				OIL CONSERVATION DIVISION  Approved by Bland Stipe Albert's Brances									
Printed Name Title: HSE S		man				Approval Dat		a	Expiration	Dota:					
1100.1101.0	70V141101					approvat Dat	<u></u>		Pyhramon	Date. M	7	<del></del>			
E-mail Addre	ss: rdrickn	nan@foresto	il.com		(	Conditions of	Approval:			Attached					

Date:

<sup>-2809</sup> Phone: 575-392-9797 Attach Additional Sheets If Necessary

# Forest Oil Corporation 3504 NW County RD

Hobbs, NM 88240

FEB - 2 2009

# **Closure Report**

**Skelly Unit #89** Eddy County, NM

Prepared by

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

Ph 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

January 21, 2009

NMOCD Attn: Mike Bratcher 1301 W Grand Ave Artesia, NM 88210

Re: Closure Report for Forest Oil - Skelly Unit #89

Mr. Bratcher,

The enclosed closure report is for the waste excavation and removal of the workover pit. All excess fluids were removed and disposed at a division-approved facility. The drilling mud and liner were excavated and hauled to Lea Land, Inc. (Permit # WM-1-035). After all drilling mud and liner was removed, the pit bottoms and walls were sampled for TPH, total BTEX, Benzene, Chlorides and the DRO and GRO combined fractions. The sample points that exceeded the levels of the closure plan were delineated to the standards in the closure plan and the impacted material was excavated and hauled to the disposal. The levels in the closure plan were 0.2 mg/kg of Benzene, 50 mg/kg of total BTEX, 2,500 mg/kg of TPH, 500 mg/kg of combined fraction GRO/DRO, 1,000 mg/kg of Chlorides. A C-141 is attached.

After the impacted material was excavated and removed the site was backfilled with clean native soil and a minimum of 1' of topsoil was placed on the site to promote revegetation. The site was reseeded with BLM Seed Mixture #3. If there are any questions about this report please call the office.

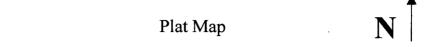
Thanks,

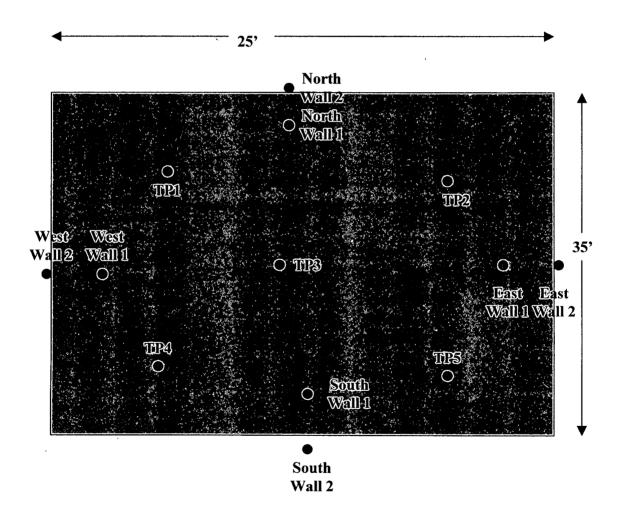
Curtis Elam

# Attachment A

Plat Map, Field Analytical and Pictures

# **Forest Oil Corporation** Skelly Unit #89





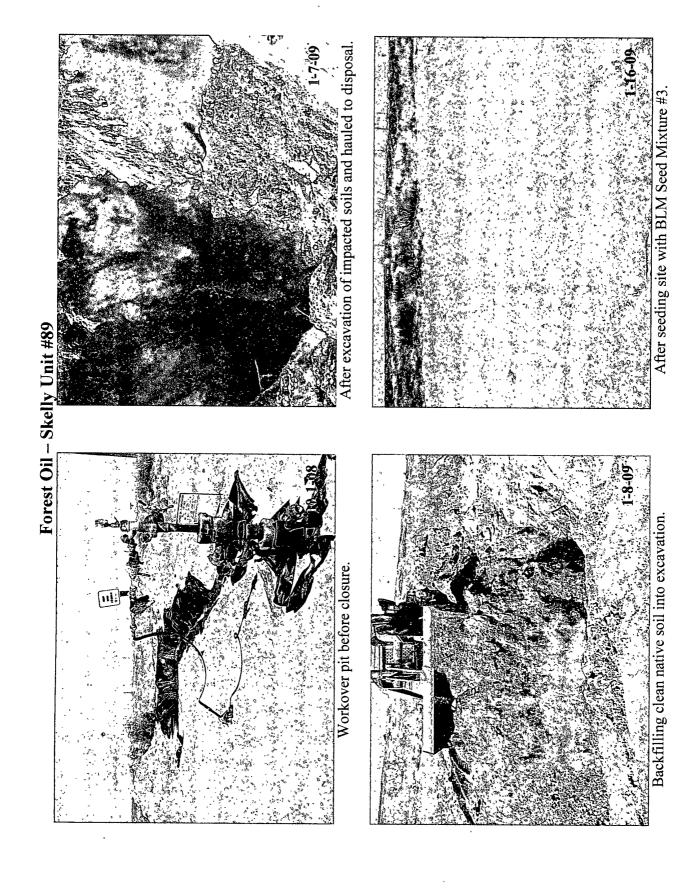
# Elke Environmental, Inc. P.O. Box 14167 Odessa, TX 79768

## Field Analytical Report Form

Client.	Forest Oil	Analyst	Curtis Elam
Site	Skelly Unit #89		

Sample ID	Date	Depth	TPH / PPM	Cl/PPM	PID / PPM	GPS
Bottom Composite	12-24-08	6'		2,012		
TP1	1-7-09	8'		325		32° 48.666' N 103° 52.356' W
TP2	1-7-09	8'		562		32° 48.665' N 103° 52.353' W
TP3	1-7-09	8'		473		32° 48.664' N 103° 52.354' W
TP4	1-7-09	8'		533		32° 48.662' N 103° 52.352' W
TP5	1-7-09	8'		602		32° 48.662' N 103° 52.356' W
South Wall 1	12-24-08	2'		1,301		32° 48.661' N 103° 52.354' W
South Wall 2	1-7-09	2'		612		32° 48.660' N 103° 52.354' W
West Wall 1	12-24-08	2'	,	1,265		32° 48.663' N 103° 52.358' W
West Wall 2	1-7-09	2'		330		32° 48.663' N 103° 52.359' W
North Wall 1	12-24-08	2'		1,452		32° 48.666' N 103° 52.353' W
North Wall 2	1-7-09	2'		357		32° 48.667' N 103° 52.353' W
East Wall 1	12-24-08	2'		2,620		32° 48.663' N 103° 52.352' W
East Wall 2	1-7-09	2'		498		32° 48.663' N 103° 52.351' W

Analyst Notes
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**Attachment B** 

Lab Reports

## **Analytical Report 321911**

for

Elke Environmental, Inc.

**Project Manager: Logan Anderson** 

**Forrest** 

20-JAN-09





12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215-08B-TX - Odessa/Midland, TX T104704400-08-TX

Florida certification numbers:

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

Norcross(Atlanta), GA E87429

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

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

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





20-JAN-09

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

Reference: XENCO Report No: 321911

**Forrest** 

Project Address: Skelly 89

#### 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 321911. 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. 321911 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 321911**



#### Elke Environmental, Inc., Odessa, TX

Forrest

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
TP1 @ 8'	S	Jan-07-09 10:15	8 ft	321911-001
TP2 @ 8'	S	Jan-07-09 10:00	8 ft	321911-002
TP3 @ 8'	S	Jan-07-09 09:00	8 ft	321911-003
TP4 @ 8'	S	Jan-07-09 09:15	8 ft	321911-004
TP5 @ 8'	S	Jan-07-09 08:30	8 ft	321911-005



Project Id:

Project Location: Skelly 89

Contact: Logan Anderson

#### Certificate of Analysis Summary 321911

Elke Environmental, Inc., Odessa, TX

Project Name: Forrest

Date Received in Lab: Wed Jan-07-09 04:20 pm

Report Date: 20-JAN-09

Project Manager: Brent Barron, II

								Froject Ma	mager:	Brent Barron,	, 11	
	Lab Id:	321911-	001	321911-	002	321911-	003	321911-	004	321911-	005	
Analysis Requested	Field Id:	TP1 @ 8'		TP2 @ 8'		TP3 @	8'	TP4 @	8'	TP5 @	8'	
Anutysis Requesieu	Depth:	8 ft		8 ft		8 ft		8 ft		8 ft		
	Matrix:	SOIL	,	SOIL		SOIL	,	SOIL		SOIL		
	Sampled:	Jan-07-09	10:15	Jan-07-09	10:00	Jan-07-09	09:00	Jan-07-09	09:15	Jan-07-09	08:30	
Anions by EPA 300	Extracted:			W-201								
22	Analyzed:	Jan-08-09	14:29	Jan-08-09	14:29	Jan-08-09	14:29	Jan-08-09	14:29	Jan-08-09	14:29	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Chloride		309	10.0	317	10.0	314	10.0	302	10,0	281	10.0	
BTEX by EPA 8021B	Extracted:	Jan-09-09	12:15	Jan-09-09	12:15	Jan-09-09	12:15	Jan-09-09	12:15	Jan-09-09	12:15	
21211, 2111, 00212	Analyzed:	Jan-11-09	04:05	Jan-11-09	04:26	Jan-11-09 (	04:46	Jan-11-09	05:07	Jan-11-09	05:28	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Benzene		ND	0.0010		0.0010		0.0010		0.0010		0.0010	
Toluene		ND	0.0020		0.0020		0.0020		0.0020		0.0020	
Ethylbenzene			0.0010		0.0010		0.0010		0.0010		0.0010	
m,p-Xylenes			0.0020		0.0020		0.0020		0.0020		0.0020	
o-Xylene			0.0010		0.0010		0.0010		0.0010		0.0010	
Total Xylenes		ND	0.0020	ND	0.0020		0.0020		0.0020		0.0020	
Total BTEX		ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	ND	0.0010	
Percent Moisture	Extracted:											
	Analyzed:	Jan-08-09	17:00	Jan-08-09	17:00	Jan-08-09 1	17:00	Jan-08-09	17:00	Jan-08-09	17:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	
Percent Moisture		2.12	1.00	2.08	1.00	1.99	1.00	1.17	1.00	2.24	1.00	
TPH By SW8015 Mod	Extracted:	Jan-08-09	09.30	Jan-08-09 (	9.30	Jan-08-09 09:30		Jan-08-09 (	09:30	Jan-08-09 (	9:30	
	Analyzed:	Jan-08-09	16:01	Jan-08-09	16:26	Jan-08-09 16:51		Jan-08-09 17:39		Jan-08-09	18:04	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
C6-C12 Gasoline Range Hydrocarbons		ND	15.3	ND	15.3	ND	15.3	ND	15.2	ND	15.3	
C12-C28 Diesel Range Hydrocarbons		23.1	15.3	ND	15.3	ND	15.3	ND	15.2	ND	15.3	
C28-C35 Oil Range Hydrocarbons		ND	15.3	ND	15.3	ND	15.3	ND	15.2	ND	15.3	
Total TPH		23.1	15.3	ND	15.3	ND	15.3	ND	15.2	ND	15.3	

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

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Odessa Laboratory Director



#### Certificate of Analysis Summary 321911

Elke Environmental, Inc., Odessa, TX

Project Name: Forrest

Project Id:

Contact: Logan Anderson

Project Location: Skelly 89

Date Received in Lab: Wed Jan-07-09 04:20 pm

Report Date: 20-JAN-09

Project Manager: Brent Barron, II

										27777 25427 0223		 
	Lab Id:	321911-0	321911-001		321911-002		321911-003		321911-004		05	
Analysis Requested	Field Id:	TP1 @	TP1 @ 8'		TP2 @ 8'		TP3 @ 8'		TP4 @ 8'		3'	
Anuiysis Requesieu	Depth:	8 ft		8 ft		8 ft		8 ft		8 ft		
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		
	Sampled:	Jan-07-09 1	Jan-07-09 10:15		Jan-07-09 10:00		Jan-07-09 09:00		Jan-07-09 09:15		8:30	
TPH by EPA 418.1	Extracted:											
TI II by Early violi	Analyzed: Jan-19-09 15:00		5:08	Jan-19-09 1	5:08							
<u> </u>	Units/RL:	mg/kg	mg/kg RL		RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	 
TPH, Total Petroleum Hydrocarbons	ND 10.2		10.2	ND	10.2	ND	10.2	ND	10.1	ND	10.2	

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Brent Barron Odessa Laboratory Director



#### **Flagging Criteria**



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the MQL and above the SQL.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte.

  The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \* Outside XENCO's scope of NELAC Accreditation.

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Project Name: Forrest

Work Orders: 321911,

Project ID:

Lab Batch #: 746155

Sample: 321906-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0274	0.0300	91	80-120		
4-Bromofluorobenzene	0.0262	0.0300	87	80-120		

Lab Batch #: 746155

Sample: 321906-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg	SU	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1,4-Difluorobenzene	0.0264	0.0300	88	80-120			
4-Bromofluorobenzene	0.0264	0.0300	88	80-120			

Lab Batch #: 746155

Sample: 321911-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg	SU	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	,		
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	,		

Lab Batch #: 746155

Sample: 321911-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes		-,	[D]			
1,4-Difluorobenzene	0.0306	0.0300	102	80-120		
4-Bromofluorobenzene	0.0304	0.0300	101	80-120		

Lab Batch #: 746155

55 **San** 

Sample: 321911-003 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	SU	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1,4-Difluorobenzene	0.0308	0.0300	103	80-120			
4-Bromofluorobenzene	0.0301	0.0300	100	80-120			

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

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

<sup>\*\*\*</sup> Poor recoveries due to dilution



**Project Name: Forrest** 

Work Orders: 321911,

Project ID:

Lab Batch #: 746155

Sample: 321911-004 / SMP

Batch:

Matrix: Soil

Units: mg/kg	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0306	0.0300	102	80-120		
4-Bromofluorobenzene	0.0302	0.0300	101	80-120		

Lab Batch #: 746155

Sample: 321911-005 / SMP

Batch:

Matrix: Soil

Units: mg/kg	SU	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
			[D]				
1,4-Difluorobenzene	0.0307	0.0300	102	80-120			
4-Bromofluorobenzene	0.0294	0.0300	98	80-120			

Lab Batch #: 746155

Sample: 522716-1-BKS/BKS

Batch: 1

Matrix: Solid

Units: mg/kg	SU	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes	11	[,2]	[D]	/ / /			
1,4-Difluorobenzene	0.0274	0.0300	91	80-120			
4-Bromofluorobenzene	0.0285	0.0300	95	80-120			

Lab Batch #: 746155

Sample: 522716-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0311	0.0300	104	80-120		
4-Bromofluorobenzene	0.0314	0.0300	105	80-120		

Lab Batch #: 746155

Sample: 522716-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg	SU	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0269	0.0300	90	80-120		
4-Bromofluorobenzene	0.0284	0.0300	95	80-120		

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

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

<sup>\*\*\*</sup> Poor recoveries due to dilution



**Project Name: Forrest** 

Work Orders: 321911,

Project ID:

Lab Batch #: 745966

Sample: 321755-015 S/MS

Batch: 1 Matrix: Soil

Units: mg/kg	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1-Chlorooctane	99.5	100	100	70-135		
o-Terphenyl	39.8	50.0	80	70-135		

Lab Batch #: 745966

**Sample:** 321755-015 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1-Chlorooctane	101	100	101	70-135		
o-Terphenyl	40.6	50.0	81	70-135		

Lab Batch #: 745966

Sample: 321911-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
1-Chlorooctane	94.5	100	95	70-135				
o-Terphenyl	50.6	50.0	101	70-135	·····			

Lab Batch #: 745966

Sample: 321911-002 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes	,	,	[D]	/ / / /				
1-Chlorooctane	96.2	100	96	70-135				
o-Terphenyl	51.3	50.0	103	70-135				

Lab Batch #: 745966

Sample: 321911-003 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane	96.0	100	96	70-135					
o-Terphenyl	51.3	50.0	103	70-135	<u></u>				

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

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

<sup>\*\*\*</sup> Poor recoveries due to dilution



**Project Name: Forrest** 

Work Orders: 321911,

Project ID:

Lab Batch #: 745966

Sample: 321911-004 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
1-Chlorooctane	93.2	100	93	70-135					
o-Terphenyl	48.6	50.0	97	70-135					

Lab Batch #: 745966

Sample: 321911-005 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
1-Chlorooctane	94.5	100	95	70-135					
o-Terphenyl	50.2	50.0	100	70-135					

Lab Batch #: 745966

Sample: 522620-1-BKS / BKS

Batch: 1

Matrix: Solid

Units: mg/kg	SU	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes		, ,	[D]						
1-Chlorooctane	104	100	104	70-135					
o-Terphenyl	43.7	50.0	87	70-135					

Lab Batch #: 745966

**Sample:** 522620-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane	89.1	100	89	70-135					
o-Terphenyl	49.1	50.0	98	70-135					

Lab Batch #: 745966

Sample: 522620-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg	SU	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane	106	100	106	70-135					
o-Terphenyl	44.9	50.0	90	70-135					

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

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

<sup>\*\*\*</sup> Poor recoveries due to dilution



## Blank Spike Recovery



**Project Name: Forrest** 

Work Order #: 321911

Project ID:

Lab Batch #: 745936

Sample: 745936-1-BKS

Matrix: Solid

**Date Analyzed:** 01/08/2009

Date Prepared: 01/08/2009

Analyst: LATCOR

Reporting Units: mg/kg

Datab # 1

1 RIANK/BLANK SPIKE RECOVERY STUDY

Keporting Omes. mg/kg	Datch #: 1	BLAIN BLAIN STIRE RECOVERT STUDI						
Anions by EPA 300	Blank Result	Spike Added	Blank Spike	Blank Spike	Control Limits	Flags		
Analytes	[A]	[B]	Result [C]	%R [D]	%R			
Chloride	ND	10.0	9.51	95	90-110			

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



#### **BS / BSD Recoveries**



Project Name: Forrest

Work Order #: 321911

Analyst: ASA

Date Prepared: 01/09/2009

Project ID:

Date Analyzed: 01/10/2009

Lab Batch ID: 746155

Sample: 522716-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY									
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	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]				
Benzene	ND	0.1000	0.1024	102	0.1	0.1048	105	2	70-130	35	
Toluene	ND	0.1000	0.0971	97	0.1	0.0993	99	2	70-130	35	
Ethylbenzene	ND	0.1000	0.0998	100	0.1	0.1020	102	2	71-129	35	
m,p-Xylenes	ND	0.2000	0.1949	97	0.2	0.1986	99	2	70-135	35	
o-Xylene	ND	0.1000	0.0955	96	0.1	0.0970	97	2	71-133	35	

Analyst: ASA

**Date Prepared:** 01/19/2009

Date Analyzed: 01/19/2009

Lab Batch ID: 746919

Sample: 746919-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
TPH by EPA 418.1	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	(E)	Result [F]	[G]				
TPH, Total Petroleum Hydrocarbons	ND	2500	2320	93	2500	2280	91	2	65-135	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



#### **BS / BSD Recoveries**



Project Name: Forrest

Work Order #: 321911

Analyst: BHW

Date Prepared: 01/08/2009

Project ID:

Date Analyzed: 01/08/2009

Lab Batch ID: 745966

Sample: 522620-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod  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	1060	106	1000	1060	106	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1010	101	1000	1020	102	1	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: Forrest** 



Work Order #: 321911

Lab Batch #: 745936

Date Analyzed: 01/08/2009

Project ID:

**Date Prepared:** 01/08/2009

Analyst: LATCOR

**QC-Sample ID:** 321906-001 S

Matrix: Soil Batch #:

Reporting Units: mg/kg	MAIRIX / MAIRIX SPIKE RECOVERY STUDY											
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag						
Analytes	[A]	[B]		(D)	/61							
Chloride	530	200	675	73	80-120	х						

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: Forrest** 

Work Order #: 321911

Project ID:

Lab Batch ID: 746155

**QC- Sample ID:** 321906-001 S

Batch #:

Matrix: Soil

Date Analyzed: 01/11/2009

**Date Prepared:** 01/09/2009

Analyst: ASA

Penarting Units: mg/kg

keporting Units: mg/kg		N	1ATRIX SPIK	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Result	Spiked 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						
Benzene	ND	0.1101	0.0896	81	0.1101	0.1015	92	13	70-130	35						
Toluene	ND	0.1101	0.0843	77	0.1101	0.0943	86	11	70-130	35						
Ethylbenzene	ND	0.1101	0.0832	76	0.1101	0.0947	86	12	71-129	35						
m,p-Xylenes	ND	0.2201	0.1589	72	0.2201	0.1836	83	14	70-135	35						
o-Xylene	ND	0.1101	0.0778	71	0.1101	0.0890	81	13	71-133	35						

Lab Batch ID: 746919

QC-Sample ID: 321906-001 S

Batch #: Matrix: Soil

Date Analyzed: 01/19/2009

**Date Prepared:** 01/19/2009

Analyst: ASA

Reporting Units: mg/kg

Reporting Outs: hig/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH by EPA 418.1	Parent Sample	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample		RPD	Control Limits	Control Limits	Flag	
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD		
TPH, Total Petroleum Hydrocarbons	ND	2750	2540	92	2750	2650	96	4	65-135	35		

Lab Batch ID: 745966

QC- Sample ID: 321755-015 S

Matrix: Soil Batch #: 1

**Date Analyzed:** 01/08/2009

**Date Prepared:** 01/08/2009

Analyst: BHW

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	•	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	1010	992	98	1010	1020	101	3	70-135	35			
C12-C28 Diesel Range Hydrocarbons	ND	1010	973	96	1010	1000	99	3	70-135	35			

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



#### **Sample Duplicate Recovery**



**Project Name: Forrest** 

Work Order #: 321911

Lab Batch #: 745936 Date Analyzed: 01/08/2009 Project ID:

Date Prepared: 01/08/2009 Analyst: LATCOR

QC- Sample ID: 321906-001 D

Batch #: 1

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY

reporting outes. mg/kg	SAMI DE	SAMI DE	DUILIC	ALE REC	OVEKI
Anions by EPA 300	Parent Sample Resuit [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte	, ,	[B]			
Chloride	530	533	· 1	20	

 Lab Batch #: 745941

 Date Analyzed: 01/08/2009
 Date Prepared: 01/08/2009
 Ol/08/2009
 Analyst: BEV

 QC- Sample ID: 321906-001 D
 Batch #: 1
 Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY Reporting Units: % **Percent Moisture** Sample Control Parent Sample RPD Result Duplicate Limits Flag Result %RPD [A] [B] Analyte Percent Moisture 9.15 8.91 3 20

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

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	Project Manager: L	ogan Anderson			_		_		_				_			Pro	ject R	lame	·		E	0145	+					
	Company Name _	Elke environment	al								_						Proj	ect f	ı									
	Company Address:	4817 andrews high	hway													P	rojeci	Loc	<b>:</b>	SI	41	1/2	8	9				
	City/State/Zip	odessa Tx 79762													•			PO 4			,	7						
	Telephone No	432-366-0043				Fax No		432	386	3-0884						nort	Form		17	Star	whom			TR			ΠNE	PDE
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(Ajuo esn			Depth	1	Sampled	payde		ntainers						144	Mar StStudge	e Specify Other		ξ δ	1	li	take As Ag Ba Cd Cr Pb		030 av BTEX					RUSH TAT (Pre-Schwoser)
(AB # (lab	FIELD	CODE	Beginning Depth	Ending Dopth	Date	Time Sampled	Field Filtered	Total & of Con	5	T P	4,50.	E S	Mone	Other (Specify)	PAN-CHARGE	9		100		SAR / ESP /	Metals: As A	Volunties Secularities	of x each	ű	NO R			RUSH TAT
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Environmental Lab of Texas
Vanance/ Corrective Action Report- Sample Log-In

EIKR EW.
17.09 16.20
321911
aL

#### Sample Receipt Checklist

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				Client initia
<del>†</del> 1	Temperature of container/ cooler?	<b>(66)</b>	No	3.5 °C
<b>‡</b> 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	Mot Present
#5	Chain of Custody present?	Yes	No	
<del>#</del> 6	Sample instructions complete of Chain of Custody?	Yes	No	
<b>#7</b>	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 Regarding.	<del>,</del>	Contacted by:	Date/ Time:
Regarding.			
Corrective Action Taken			
Check all that Apply:	000	See attached e-mail/ fax Client understands and would like to proceed with Cooling process had begun shortly after sampling	

Attachment C

**Disposal Manifests** 

# LEA LAND DISPOSAL SITE NEW MEXICO

٠, ،	MILE MARKER #64 US H	WY 62/180 • 30 MILES E	AST OF CARLSBAD	, NM • Pl	HONE (50	5) 887-4048	· · · ·	
	1300 WEST MAIN	LEA LAI STREET • OKLAHOMA		HONE (4	05) 236-42	57 BAL	tFIZA)	R
(1)	HENAZÁNEKO GERSENAK ERENTÁNAK	и канк	066359	1. PAC	SÉOF_	2. TRAIL	ER NO.	7
G	3. COMPANY NAME Forest Oil Corporation PHONE NO.	4. ADDRESS 350 NW Count	, ,			ICK-UP DATE 1/8/2000 NRCC LD. NO		
E	(506) 392-9797	Hobbs	NM	88	240			
•	7. NAME OR DESCRIPTION OF WASTE SH	IPPED:		8. CON	TAINERS Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
N	a Non-Regulated, Non Hazardous V	Vanie 5(47/3		1	CM		,	
	b					,		· .
E	c.	e e e e e e e e e e e e e e e e e e e						
R	39220°384	t20	Andrewson and appropriate				٠.	
A	12. COMMENTS OR SPECIAL INSTRUCTION Skelly Unit #89	ONS:				13. WASTE F	ROFILE N	O.
	14. <b>IN</b>	CASE OF EMERG	ENCY OR SPIL	L. COI	TACT	. ·	· . · . · . · . · . · . · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
T	NAME Kin Slaughter	PHONE NO 575-887-4048		<del> </del>	•		REMERGE	NCY NO.
O	15.GENERATOR'S CERTIFICATION shipping name and are classified, packed, marked international and national government regulation	ed, and labeled, and are in a	ll respects in proper co	ondition f	or transpor	t by highway ac	cording to	applicable
R	PRINTED/TYPED NAME		SIGNATURE				`,	DATE
T	16. TRANSPORTER (	1)	17.	TI	RANSPO	ORTER (2)		
R A	NAME: ELK ENVIRONA	MENTAL	NAME:	,				
N	TEXAS I.D. NO.		TEXAS I.D. NO.	•				•
S P	IN CASE OF EMERGENCY CONTACT:		IN CASE OF EMI	ERGENC	Y CONTA	CT:	,	
0	EMERGENCY PHONE:		EMERGENCY PE	IONE:				
R T	18. TRANSPORTER (1): Acknowledge	ment of receipt of material	19. TRANSPO	RTER	(2): Ackn	owledgment of	receipt of n	naterial
E :	PRINTED/TYPED NAME		PRINTED/TYPEI	O NAME			.,	
S	SIGNATURE BALLON THE PROPERTY	DATE - FO	SIGNATURE			]	DATE	
		ADDRESS:	<u> </u>			PHONE		<del></del>
D F	Lea Land, LLC		e Marker 64, U Miles East of C		•	80,.	.505-88	37-4048
I A S C P I O L	PERMIT NO. WM-01-035 - New I		20. COMMENTS					
S I	24 DISPOSAL FACILITY'S CERT fatility is authorized and permitted to receive s		certify that the above	describe	d wastes w	ere delivered to	this facilit	y, that the
A T L Y	AUTHORIZED SIGNATURE	ucii wasies.	CELLNO		D.ia	W.		
	MUMPHURACO SPUNATURA (	Barrer & P	CELL NO.		DAT	E	1 T	IME .

GENERATOR: COPIES 1 & 6

DISPOSAL SITE: COPIES 2 & 3

TRANSPORTERS: COPIES 4 & 5

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (505) 887-4048

#### LEA LAND, LLC

,	1300 WEST MAIN S	IKEET OKETHK	MA CIT 1, OK 73100 • P		350-1257	10	* 42	
SON	HAZARDOUS WASHE MANG	LSI NO	066360	1. PAGE_	_OF	2. TRAII	ER NO.	-
	3. COMPANY NAME	4. ADDRESS	·	-	5. PICI	C-UP DATE	Ħ	
G	Forest Oil Corporation	350 NW Co	unty Road		1	/8/2009		i
·	PHONE NQ	CITY	STATE	ZIP	6 TNR	CC I.D. NO	) .	<u>-</u>
	THOREM	CIT T	·	2.11	0		٠,	
E	(505) 352-9797	Hobbs	NA `	96240			·	, <u>.</u>
	7. NAME OR DESCRIPTION OF WASTE SHIPP	ED:	,	8. CONTAIN		. TOTAL	10. UNIT	11. TEXAS
			1.5	No. Ty	/pe Q	UANTITY	Wt/Vol.	WASTE ID #
N	a. Non-Regulated, Non Hazardous Wa	uta .	•	1 1 6	JM			1
	b.		· · · · · · · · · · · · · · · · · · ·	<u>-</u> -				<del>                                     </del>
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R	1068 40						<u> </u>	
	12. COMMENTS OR SPECIAL INSTRUCTIONS	S: .	•	- Patinganies	13	3. WASTE I	PROFILE N	io.
<b>A</b> .	Shelly Limi #89					<i>J</i> 4		
A.			· · · · · · · · · · · · · · · · · · ·					
4	14. IN C		RGENCY OR SPIL	L, CONTA	CT_		, r	:
T	NAME	PHONE NO		•		24-HOUI	R EMERGE	NCY NO.
1	Kin Warighter	575-867-40		*				
Ä.	15.GENERATOR'S CERTIFICATION	J. I Haraby declars	"that the dontante of this a	óncionment em	fully on	d occurretely	described	hove by proper
Ö	shipping name and are classified, packed, marked,	and labeled, and are	in all respects in proper c	ondition for tra	insport by	highway a	cording to	applicable
11	international and national government regulations,							
7 (A)	DDD THE THE THE TOTAL AND THE		GIGNIATITAL					XD AFFE
Ŗ	PRINTED/TYPED NAME	•	SIGNATURE					DATE
			* *					
T	16. TRANSPORTER (1)		17.	TRAN	ISPOR	TER (2)	`,	
R		*				,		·
Α	NAME: ELK ENVIRONME	HTAL	NAME:					
N	TEXAS I.D. NO.		TEXAS I.D. NO.					,
S								
P	IN CASE OF EMERGENCY CONTACT:		IN CASE OF EMI	ERGENCY CO	DNTACT			
0	EMERGENCY PHONE:		EMERGENCY PH	HONE:				
R	18. TRANSPORTER (1): Acknowledgmen	t of receipt of mate	rial 19. TRANSPO	RTER (2):	Acknow	ledgment of	receipt of	material ,
T E	1.							
R	PRINTED/TYPED NAME ( )	tu tj	PRINTED/TYPE	D NAME				<del></del>
S	XX To The state of	1.						
	MONATURE 1050 BELINAVO	DATE IS	SIGNATURE				<u>ĎATE</u>	
		ADDRESS:	ż		". · ·	PHONE	:	
	Lea Land, LLC	1	Mile Marker 64, U	S Hwy 6	(2/1 <u>R</u> A			87-4048
D F	- Commonwealth and a common of the common of	i i		•		,	- 505-0	U1-7040***
I A			0 Miles East of C	arisbad, N	1IVI			
s c	PERMIT NO.		20. COMMENTS					
PΙ	WM-01-035 - New Me	exico	A <sup>2</sup>					
O L			<u>_</u>	<del></del>				
S I	21.DISPOSAL FACILITY'S CERTIF	ICATION: I He	reby certify that the above	described wa	stes were	delivered t	o this facili	ty, that the
A T	facility is authorized and permitted to receive such	ı wastes.	j.				<i>.</i>	
LY	AUTHORIZED SIGNATURE		CELL NO.		DATE		. Т	IME
	I I MININ YEAR	lulaine	NA THE THE PERSON OF THE PERSO	1	1. 0	100	1	1100
1	上上 れれ は わ (ブリ)	1111/1/1/1/	<b>)</b> †		- 1' 7	SU / /		1 10

GENERATOR: COPIES 1 & 6

DISPOSAL SITE: COPIES 2 & 3 CODV E

TRANSPORTERS: COPIES 4 & 5

# LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (505) 887-4048									
LEA LAND, LLC  1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257									
No N	HAZARDGUSAVASTI MANIE	IS NO	066358	1. PAC	GEOF_	2. TRAIL	ER NO.	A-96	
G	3. COMPANY NAME  Forest Oil Corporation PHONE NO.	4. ADDRESS  350 NW Cou	5. PICK-UP DATE ## 1/8/2009 ZIP 6. TNRCC I.D. NO.						
E	(505) 392-2797 7. NAME OR DESCRIPTION OF WASTE SHIPPE	*			8. CONTAINERS   9. TOTAL   10. UNIT   11. TEXAS   No.   Type   QUANTITY   Wt/Vol.   WASTE ID #				
N	a. Non-Regüisted, Non Hazardous Wast b.	Non-Regüisted, Non Hazardous Waste			CM		-		
E	с.	voc. cin. Debt. vo.					,	,	
R	38440@35	760			, where the		¥		
A	12. COMMENTS OR SPECIAL INSTRUCTIONS: Skelly Unit #89				13. WASTE PROFILE NO.				
Т	14. IN CASE OF EMERGENCY OR SPILL, CONTACT  NAME PHONE NO 24-HOUR EMERGENCY NO.  Kin Slaughter 575-967-4048								
.0.	15.GENERATOR'S CERTIFICATION: I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC								
R	PRINTED/TYPED NAME	SIGNATURE	SIGNATURE DATE						
T	16. TRANSPORTER (1)		17.	17. TRANSPORTER (2)					
R A	NAME: ELK ENVIRONMEN	NAME:	San Company						
N S	TEXAS I.D. NO.						1		
P	IN CASE OF EMERGENCY CONTACT:				Y CONTAC	CT:			
O R	EMERGENCY PHONE:  18 TRANSPORTER (1): Acknowledgment	of raccine of	EMERGENCY PH		(2)	nules.	Page 1	nata-i-1	
T E	18. TRANSPORTER (1): Acknowledgment of receipt of material  PRINTED/TYPED NAME Raman Sdlif			19. TRANSPORTER (2): Acknowledgment of receipt of material PRINTED/TYPED NAME					
R S	12	MIGNATURE STATE				I	* DATE		
D F	Lea Land, LLC	4	ile Marker 64, U Miles East of C		•	PHONE:		87-4048	
I A S C P I O L			20. COMMENTS						
S I A T	21.DISPOSAL FACILITY'S CERTIFIC facility is authorized and permitted to receive such v		by certify that the above	describe	d wastes w	ere delivered to	this facilit	y, that the	
LY	AUTHORIZED SIGNATURE	-/	CELL NO.		DAT	E	т	ME . //\	

TRANSPORTERS: COPIES 4 & 5

Form C-144 State of New Mexico July 21, 2008 District I 1625 N. French Dr., Hobbs, NM 88240 Energy Minerals and Natural Resources For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office. Department 1301 W. Grand Avenue, Artesia, NM 88210 District III
1000 Rio Brazos Road, Aztec, NM 87410
DEC 16 2008
Ull Collise Value 11 220 South St. Francis Dr. Oil Conservation Division For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and 1220 S. St. Francis Dr., Santa Fe, NM 87505 CD-ARTESIAS anta Fe, NM 87505 provide a copy to the appropriate NMOCD District Office. Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method Type of action: Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method Modification to an existing permit Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances. OGRID #: 8041 Operator: Forest Oil Address: 3504 NW County Rd Hobbs, NM 88240 Facility or well name: Skelly Unit #89 API Number: 30-015-05429 OCD Permit Number: \_\_\_ U/L or Qtr/Qtr B Section 28 Township 17S Range 31E County: Eddy \_\_\_\_Longitude \_\_\_ \_\_\_\_\_ NAD: 🔲 1927 🖾 1983 Center of Proposed Design: Latitude Surface Owner: Federal State Private Tribal Trust or Indian Allotment Pit: Subsection F or G of 19.15.17.11 NMAC Temporary: ☐ Drilling ☒ Workover Permanent Emergency Cavitation P&A ☑ Lined ☐ Unlined Liner type: Thickness 12 mil ☑ LLDPE ☐ HDPE ☐ PVC ☐ Other \_\_\_\_\_ ☐ String-Reinforced Liner Seams: Welded Factory Other bbl Dimensions: L 15' x W 15' x D 5' Closed-loop System: Subsection H of 19.15.17.11 NMAC Type of Operation: P&A Drilling a new well Workover or Drilling (Applies to activities which require prior approval of a permit or notice of ☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other \_\_\_ ☐ Lined ☐ Unlined Liner type: Thickness \_\_\_\_\_ mil ☐ LLDPE ☐ HDPE ☐ PVĈ ☐ Other Liner Seams: Welded Factory Other

Alternative Method:

Liner type: Thickness

Tank Construction material:

Below-grade tank: Subsection I of 19.15.17.11 NMAC

☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other

\_\_\_\_bbl Type of fluid:

Secondary containment with leak detection Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off

mil HDPE PVC Other

Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks)						
Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, hospital,						
institution or church)  [ Four foot height, four strands of barbed wire evenly spaced between one and four feet	į					
Alternate. Please specify	,					
7.						
Netting: Subsection E of 19.15,17.11 NMAC (Applies to permanent pits and permanent open top tanks)						
Screen Netting Other  Monthly inspections (If netting or screening is not physically feasible)						
B.						
Signs: Subsection C of 19.15.17.11 NMAC						
12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers						
Signed in compliance with 19.15.3.103 NMAC						
9. Administrative Approvals and Exceptions:						
Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.						
Please check a box if one or more of the following is requested, if not leave blank:  Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau	office for					
consideration of approval.  Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.						
16.						
Siting Criteria (regarding permitting): 19.15.17.10 NMAC						
Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of accematerial are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appro-	ptable source					
office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of a	pproval.					
Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.						
Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank.	☐ Yes ☑ No					
- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	C 2 57 57					
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).	☐ Yes ☑ No					
- Topographic map; Visual inspection (certification) of the proposed site						
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.  (Applies to temporary, emergency, or cavitation pits and below-grade tanks)	☐ Yes ☑ No ☐ NA					
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image						
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.  (Applies to permanent pits)	☐ Yes ☐ No ☐ NA					
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image						
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.	Yes 🛛 No					
- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site						
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.	☐ Yes ⊠ No					
- Written confirmation or verification from the municipality; Written approval obtained from the municipality						
Within 500 feet of a wetland US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☑ No					
Within the area overlying a subsurface mine Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ⊠ No					
Within an unstable area.	☐ Yes ☑ No					
<ul> <li>Engineering measures incorporated into the design; NM Bureau of Geology &amp; Mineral Resources; USGS; NM Geological Society; Topographic map</li> </ul>						
Within a 100-year floodplain FEMA map	☐ Yes ⊠ No					

(

* · · · · · · · · · · · · · · · · · · ·				
ii. Temporary Pits, Emergency Pits, and Below-grade Tan Instructions: Each of the following items must be attache	ks Permit Application Atta	achment Checklist e indicate, by a cho	t: Subsection B of 19.15.17.9 NMAC eck mark in the box, that the documents are	
attached.				
Hydrogeologic Report (Below-grade Tanks) - based				
<ul> <li>☒ Hydrogeologic Data (Temporary and Emergency Pits</li> <li>☒ Siting Criteria Compliance Demonstrations - based up</li> </ul>	s) - based upon the requirem	ents of Paragraph (	2) Of Subsection B of 19.13.17.9 NNIAC	
Design Plan - based upon the appropriate requiremen		ircuts of 19.13.17.1	OWNE	
Operating and Maintenance Plan - based upon the ap		.15.17.12 NMAC		
☐ Closure Plan (Please complete Boxes 14 through 18, and 19.15.17.13 NMAC	if applicable) - based upon t	the appropriate requ	uirements of Subsection C of 19.15.17.9 NMA	AC
Previously Approved Design (attach copy of design)	API Number:	OI	r Permit Number:	
12. Closed-loop Systems Permit Application Attachment C Instructions: Each of the following items must be attache	hecklist: Subsection B of 1 ed to the application. Pleas	19.15.17.9 NMAC e indicate, by a ch	eck mark in the box, that the documents are	
attached.  Geologic and Hydrogeologic Data (only for on-site				
☐ Siting Criteria Compliance Demonstrations (only for ☐ Design Plan - based upon the appropriate requirement	nts of 19.15.17.11 NMAC	•••	•	
Operating and Maintenance Plan - based upon the ap				
Closure Plan (Please complete Boxes 14 through 18, and 19.15.17.13 NMAC	, if applicable) - based upon	the appropriate rec	quirements of Subsection C of 19.15.17.9 NA	AAC
Previously Approved Design (attach copy of design)	API Number:			
Previously Approved Operating and Maintenance Plan			(Applies only to closed-loop system that use	
above ground steel tanks or haul-off bins and propose to it	mplement waste removal for	closure)		
Permanent Pits Permit Application Checklist: Subsect Instructions: Each of the following items must be attach attached.  Hydrogeologic Report - based upon the requirement Siting Criteria Compliance Demonstrations - based of Climatological Factors Assessment  Certified Engineering Design Plans - based upon the Dike Protection and Structural Integrity Design - based Leak Detection Design - based upon the appropriate  Liner Specifications and Compatibility Assessment  Quality Control/Quality Assurance Construction and Operating and Maintenance Plan - based upon the appropriate of Preeboard and Overtopping Prevention Plan - based  Nuisance or Hazardous Odors, including H <sub>2</sub> S, Prevention Plan - based upon the appropriate requirements of the proposed Closure: 19.15.17.13 NMAC	ts of Paragraph (1) of Subset upon the appropriate require e appropriate requirements of used upon the appropriate rece requirements of 19.15.17.1 - based upon the appropriate d Installation Plan ppropriate requirements of 1 I upon the appropriate require ention Plan	te indicate, by a charaction B of 19.15.17. Thements of 19.15.17.  of 19.15.17.11 NMA. quirements of 19.15.17.  1 NMAC the requirements of 19.15.17.12 NMAC cements of 19.15.17.	7.9 NMAC .10 NMAC AC 5.17.11 NMAC 9.15.17.11 NMAC C 7.11 NMAC	
<u>Proposed Closure</u> : 19.15.17.13 NMAC  Instructions: Please complete the applicable boxes, Boxe			· ·	
Type: Drilling Workover Emergency Cavi		nent Pit 🔲 Belov	w-grade Tank Closed-loop System	
Proposed Closure Method: Waste Excavation and Rei Waste Removal (Closed-l				
On-site Closure Method (0	oup systems utily) Only for temporary pite and	closed-loon eveter	ne)	
☐ In-place Buria	only for temporary pits and I On-site Trench Buria	d d	way.	
☐ Alternative Closure Metho	od (Exceptions must be subr	nitted to the Santa	Fe Environmental Bureau for consideration)	
Waste Excavation and Removal Closure Plan Checklist closure plan. Please Indicate, by a check mark in the box Protocols and Procedures - based upon the appropria Confirmation Sampling Plan (if applicable) - based Disposal Facility Name and Permit Number (for liqu Soil Backfill and Cover Design Specifications - based	t: (19.15.17.13 NMAC) Ins.  t, that the documents are as ate requirements of 19.15.17 upon the appropriate require uids, drilling fluids and drill ed upon the appropriate required.	structions: Each of ttached. 7.13 NMAC coments of Subsection cuttings) uirements of Subse	of the following items must be attached to the on F of 19.15.17.13 NMAC	?
Re-vegetation Plan - based upon the appropriate req	purements of Subsection I o	1 19.15.17.13 NM/	AC	
Site Reclamation Plan - based upon the appropriate	requirements of Subsection	G of 19.15.17.13 N	NMAC	

16.		3.D. ( 4. ( )				
Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Instructions: Please indentify the facility or facilities for the disposal of liquids, of facilities are required.	Steel Tanks or Haul-off Bins Only: (19.15.17.13.D) drilling fluids and drill cuttings. Use attachment if m	NMAC) nore than two				
Disposal Facility Name:	Disposal Facility Permit Number:					
Disposal Facility Name:	ility Name: Disposal Facility Permit Number:					
Will any of the proposed closed-loop system operations and associated activities of Yes (If yes, please provide the information below) ☐ No	ccur on or in areas that will not be used for future serv	ice and operations?				
Required for impacted areas which will not be used for future service and operatio  Soil Backfill and Cover Design Specifications based upon the appropriate Re-vegetation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection	e requirements of Subsection H of 19.15.17.13 NMAC I of 19.15.17.13 NMAC					
17. Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the provided below. Requests regarding changes to certain siting criteria may require considered an exception which must be submitted to the Santa Fe Environmenta demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC.	re administrative approval from the appropriate distr I Bureau office for consideration of approval.  Justij	ict office or may be				
Ground water is less than 50 feet below the bottom of the buried waste.  - NM Office of the State Engineer - iWATERS database search; USGS; Dat	a obtained from nearby wells	Yes No				
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Database search; USGS;	a obtained from nearby wells	Yes No				
Ground water is more than 100 feet below the bottom of the buried waste.  - NM Office of the State Engineer - iWATERS database search; USGS; Dat	a obtained from nearby wells	☐ Yes ☐ No ☐ NA				
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other signake (measured from the ordinary high-water mark).  - Topographic map; Visual inspection (certification) of the proposed site	gnificant watercourse or lakebed, sinkhole, or playa	Yes No				
Within 300 feet from a permanent residence, school, hospital, institution, or church - Visual inspection (certification) of the proposed site; Aerial photo; Satellit		☐ Yes ☐ No				
Within 500 horizontal feet of a private, domestic fresh water well or spring that les watering purposes, or within 1000 horizontal feet of any other fresh water well or spring that less watering purposes, or within 1000 horizontal feet of any other fresh water well or spring that less watering purposes, or within 1000 horizontal feet of any other fresh water well or spring that less watering purposes, or within 1000 horizontal feet of any other fresh water well or spring that less watering purposes, or within 1000 horizontal feet of any other fresh water well or spring that less watering purposes, or within 1000 horizontal feet of any other fresh water well or spring that less watering purposes, or within 1000 horizontal feet of any other fresh water well or spring that less watering purposes, or within 1000 horizontal feet of any other fresh water well or spring that less watering purposes, or within 1000 horizontal feet of any other fresh water well or spring that less water	spring, in existence at the time of initial application.	Yes No				
Within incorporated municipal boundaries or within a defined municipal fresh wat adopted pursuant to NMSA 1978, Section 3-27-3, as amended.  - Written confirmation or verification from the municipality; Written approx	•	Yes No				
Within 500 feet of a wetland US Fish and Wildlife Wetland Identification map; Topographic map; Visu	al inspection (certification) of the proposed site	Yes No				
Within the area overlying a subsurface mine.  - Written confirmation or verification or map from the NM EMNRD-Mining	g and Mineral Division	☐ Yes ☐ No				
<ul> <li>Within an unstable area.</li> <li>Engineering measures incorporated into the design; NM Bureau of Geolog Society; Topographic map</li> </ul>	ry & Mineral Resources; USGS; NM Geological	☐ Yes ☐ No				
Within a 100-year floodplain FEMA map		☐ Yes ☐ No				
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the by a check mark in the box, that the documents are attached.  Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of Construction/Design Plan of Burial Trench (if applicable) based upon the a Construction/Design Plan of Temporary Pit (for in-place burial of a drying protocols and Procedures - based upon the appropriate requirements of 19.1 Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Disposal Facility Name and Permit Number (for liquids, drilling fluids and design of the superior o	quirements of 19.15.17.10 NMAC f Subsection F of 19.15.17.13 NMAC ppropriate requirements of 19.15.17.11 NMAC pad) - based upon the appropriate requirements of 19. 5.17.13 NMAC quirements of Subsection F of 19.15.17.13 NMAC Subsection F of 19.15.17.13 NMAC drill cuttings or in case on-site closure standards cannot	15.17.11 NMAC				
Soil Cover Design - based upon the appropriate requirements of Subsection  Re-vegetation Plan - based upon the appropriate requirements of Subsection  Site Reclamation Plan - based upon the appropriate requirements of Subsection	H of 19.15.17.13 NMAC LI of 19.15.17.13 NMAC					

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19. Operator Application Certification:
I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.
Name (Print): Rick Rickman Title: HSE Specialist
0.606
Signature: Rick Rickman Date: 12-15-08
e-mail address: rdrickman@forestoil.com Telephone: 575-392-9797
OCD Approval: Permit Application (including closure plan) (Closure Plan (only) (OCD Conditions (see attachment)
OCD Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment)  OCD Representative Signature: Signed By Mile Brance Approval Date: DEC 1 7 2008
Title:OCD Permit Number: NA
Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC  Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.
Closure Completion Date:
Closure Method:  Waste Excavation and Removal On-Site Closure Method Alternative Closure Method Waste Removal (Closed-loop systems only)  H different from approved plan, please explain.
23.  Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more the two facilities were utilized.
Disposal Facility Name: Disposal Facility Permit Number:
Disposal Facility Name: Disposal Facility Permit Number:
Were the closed-loop system operations and associated activities performed on or in areas that will not be used for future service and operations?  Yes (If yes, please demonstrate compliance to the items below) \( \subseteq \) No
Required for impacted areas which will not be used for future service and operations:
Site Reclamation (Photo Documentation) Soil Backfilling and Cover Installation
Re-vegetation Application Rates and Seeding Technique
24.  Closure Report Attachment Checklist: Instructions: Each of the following items must be attached to the closure report. Please indicate, by a checklist in the box, that the documents are attached.
Proof of Closure Notice (surface owner and division)
Proof of Deed Notice (required for on-site closure)  Plot Plan (for on-site closures and temporary pits)
Confirmation Sampling Analytical Results (if applicable)
Waste Material Sampling Analytical Results (required for on-site closure)  □ Disposal Facility Name and Permit Number
Soil Backfilling and Cover Installation
Re-vegetation Application Rates and Seeding Technique
Site Reclamation (Photo Documentation) On-site Closure Location: LatitudeLongitudeNAD: ☐ 1927 ☐ 1983
25.
Operator Closure Certification:  I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.
Name (Print): Title:
Signature: Date:
Date.

Telephone:

e-mail address:

# New Mexico Energy, Minerals and Natural Resources Department

#### **Bill Richardson**

Governor

Joanna Prukop Cabinet Secretary Reese Fullerton Deputy Cabinet Secretary Mark Fesmire
Division Director
Oil Conservation Division



## Conditions of approval for closure of a drilling or workover pit

Notify OCD District 2 office 48 hours prior to commencement of closure activities.

Notify OCD District 2 office 48 hours prior to obtaining samples where analyses of samples obtained are to be submitted to OCD.

Sampling requirements are listed in 19.15.17.13 [NMAC] (Pit Rule)

Final closure report is to be submitted to OCD not later than 60 days after completion of closure.



## Elke Environmental, Inc.

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

December 15, 2008

NMOCD Attn: Larry Johnson 1625 N. French Dr. Hobbs, NM 88240

Re: Closure Plan for Forest Oil - Skelly Unit #89

Mr. Larry Johnson

The proposed closure for the above well is waste excavation and removal. All excess fluids will be removed and disposed at a division-approved facility. The drilling mud and liner will be excavated and hauled to Controlled Recovery Inc. (Permit # R9166). After all drilling mud and liner have been removed, the pit bottoms and walls will be sampled with a minimum 5 point composite for TPH 418.1, total BTEX, Benzene, Chlorides and the DRO and GRO combined fractions. The levels will not exceed 0.2 mg/kg of Benzene; 50 mg/kg of total BTEX; 2,500 mg/kg of TPH 418.1; 500 mg/kg of combined fraction GRO/DRO; 1,000 mg/kg of Chlorides. If samples exceed these levels a C-141 will be submitted.

Once backfill is approved the site will be backfilled with clean native soil and a minimum of 1' of topsoil will be placed on the site to promote revegetation. The site will be reseeded with BLM Seed Mixture #3. A final report will be attached to the Final C-144 once closure is commenced.

Thanks, Curtis Elam Field Supervisor

New Mexico Office of the State Engineer POD Reports and Downloads
Township: 17S Range: 31E Sections:
NAD27 X: Y: Zone: Search Radius:
County: Basin: Number: Suffix:
Owner Name: (First) (Last) C Non-Domestic C Domestic
ROD/Surface Data Report Avg Depth to Water Report Water Column Report
Clear Form iWATERS Menu Help
AVERAGE DEPTH OF WATER REPORT 12/15/2008  (Depth Water in Feet)  Bsn Tws Rng Sec Zone X Y Wells Min Max Avg  No Records found, try again

# New Mexico Office of the State Engineer POD Reports and Downloads

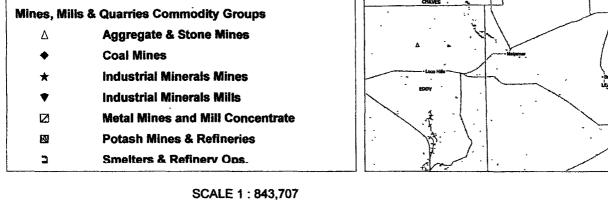
-					
Township: 16S Range: 31E Sections:					
NAD27 X: Y: Zone: Search Radius:					
County: Basin: Number: Suffix:					
Owner Name: (First) (Last) O Non-Domestic O Domestic					
POD / Surface Data Report Avg Depth to Water Report Water Column Report					
Clear Form IWATERS Menu Help					

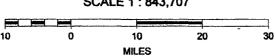
### AVERAGE DEPTH OF WATER REPORT 12/15/2008

								(nebru	water in	reet)
Bsn	Tws	Rng	Sec	Zone	x	Y	Wells	Min	Маж	Avg
L	16S	31E	12				2	288	288	288

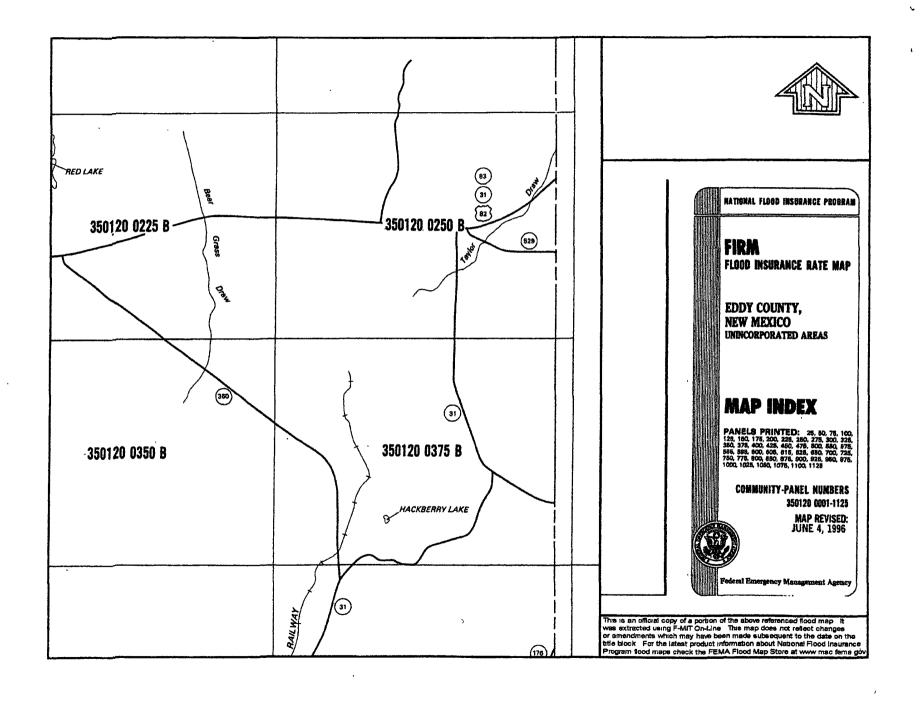
Record Count: 2

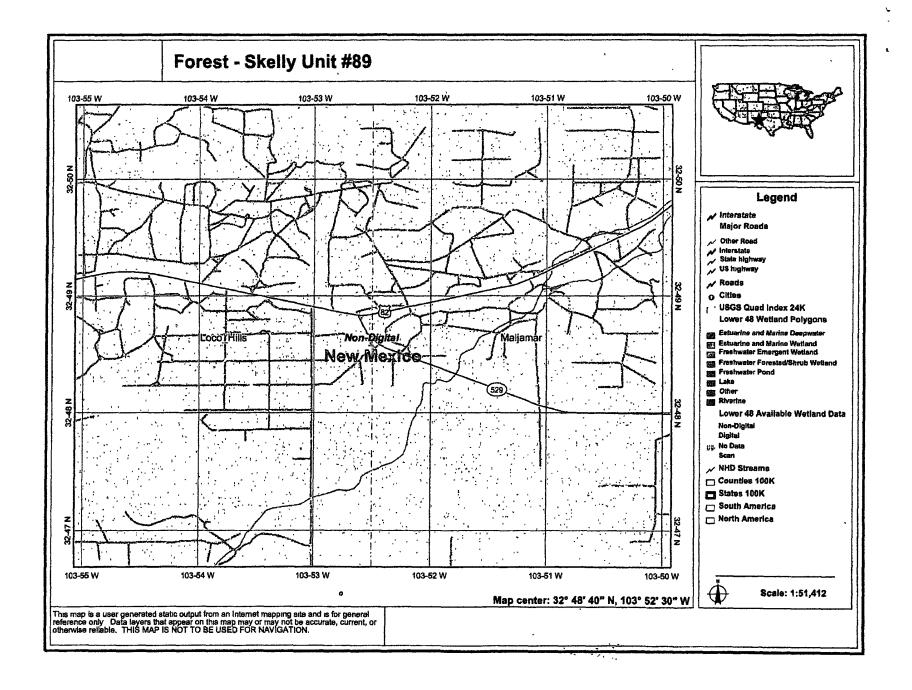
# Forest - Skelly Unit #89

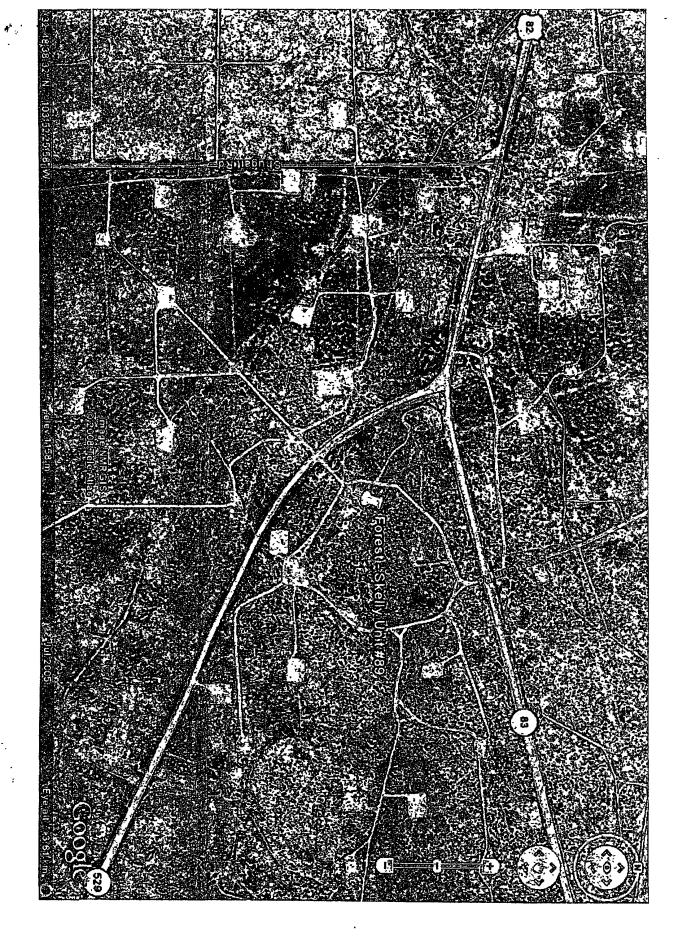












Attachment E

**Initial & Final C-141** 

Final C-144