OCD-HOBBS

H-06-55
5/19/06

Form 3160-3
(April 2004)

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. **NM 1410**

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

8. Lease Name and Well No. **Federal #4** (301548)

2. Name of Operator **Range Operating New Mexico, Inc.** (227588)

9. API Well No. 30-025-37963

3a. Address **777 Main St., Ste. 800 Fort Worth, TX 76102**

3b. Phone No. *(include area code)* **817-810-1916**

10. Field and Pool, or Exploratory **Eunice; San Andres Southwest**

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface **2310' FNL & 2310' FEL**
At proposed prod. zone **2310' FNL & 2310' FEL** Unit G

11. Sec., T. R. M. or Blk. and Survey or Area **Sec. 17, T22S, R37E, N.M.P.M.**

14. Distance in miles and direction from nearest town or post office* **2.5 miles SW from Eunice, NM**

12. County or Parish **Lea**

13. State **NM**

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
	40	**40**
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on file
	4400	**NM2399**
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3392	**06/15/2006**	**8 days**

Received
JUN
Hobbs
OCD

Capitan Controlled Water Basin

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature	Name *(Printed/Typed)*	Date
Paula Hale	**Paula Hale**	**05/18/2006**

Title **Sr. Reg. Sp.**

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/S/ Russell E. Sorensen	**/S/ Russell E. Sorensen**	JUN 1 8 2006
Title ACTING **FIELD MANAGER**	Office **CARLSBAD FIELD OFFICE**	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR 1 YEAR

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*(Instructions on page 2)

KZ

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III
1000 Rio Brazos Rd., 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, New Mexico 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
30-025-37963	24180	Eunice; San Andres Southwest

Property Code	Property Name	Well Number
301548	FEDERAL	4

OGRID No.	Operator Name	Elevation
227588	RANGE OPERATING NEW MEXICO, INC.	3392'

Surface Location

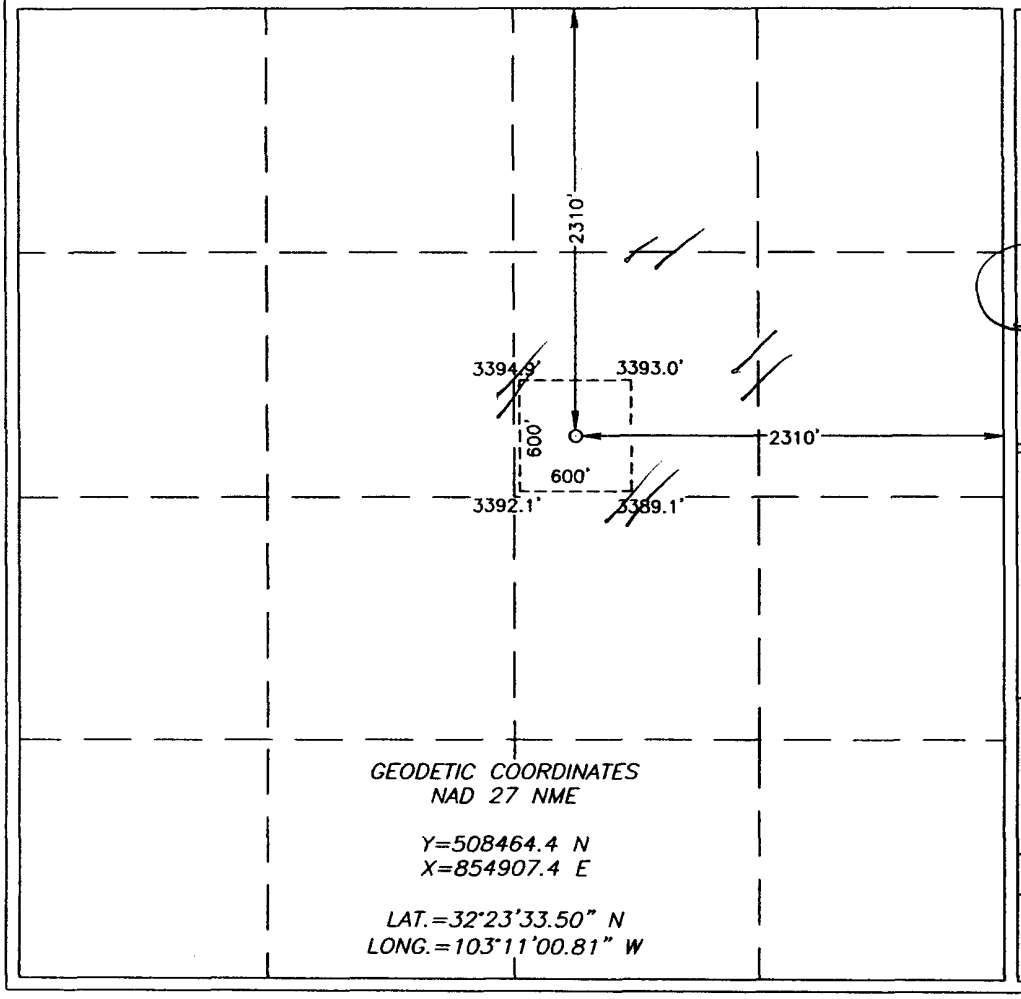
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	17	22-S	37-E		2310	NORTH	2310	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature 5/15/06 Date

Paula Hale
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

MARCH 24, 2006
Date Surveyed MR

Signature & Seal of Professional Surveyor

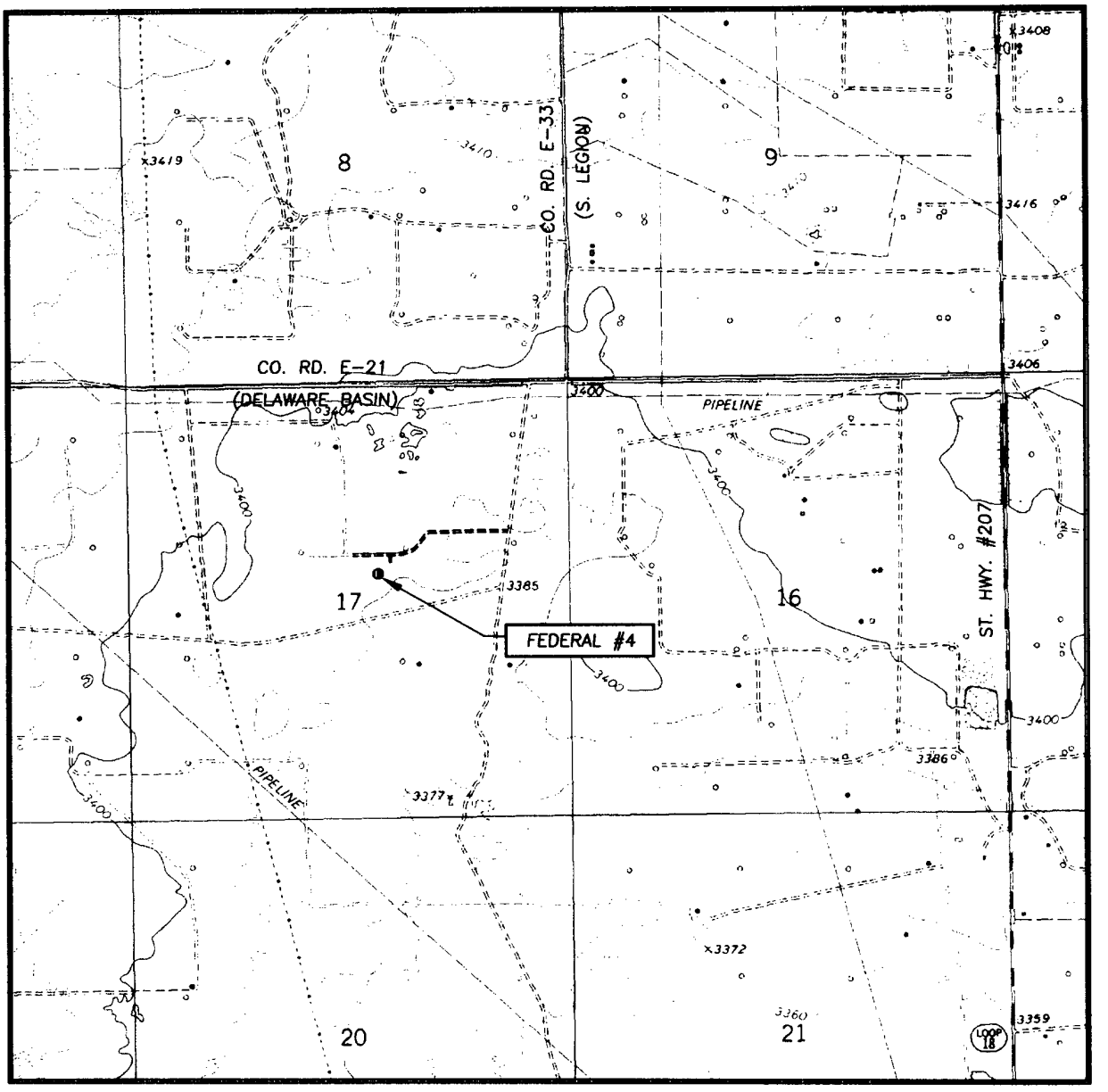
GARY G. EIDSON NEW MEXICO 12641 REGISTERED PROFESSIONAL SURVEYOR

4/4/06

06.11.0531

Certificate No. GARY EIDSON 12641

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
EUNICE, N.M. – 10'

SEC. 17 TWP. 22-S RGE. 37-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 2310' FNL & 2310' FEL

ELEVATION 3392'

OPERATOR RANGE OPERATING NEW MEXICO, INC.

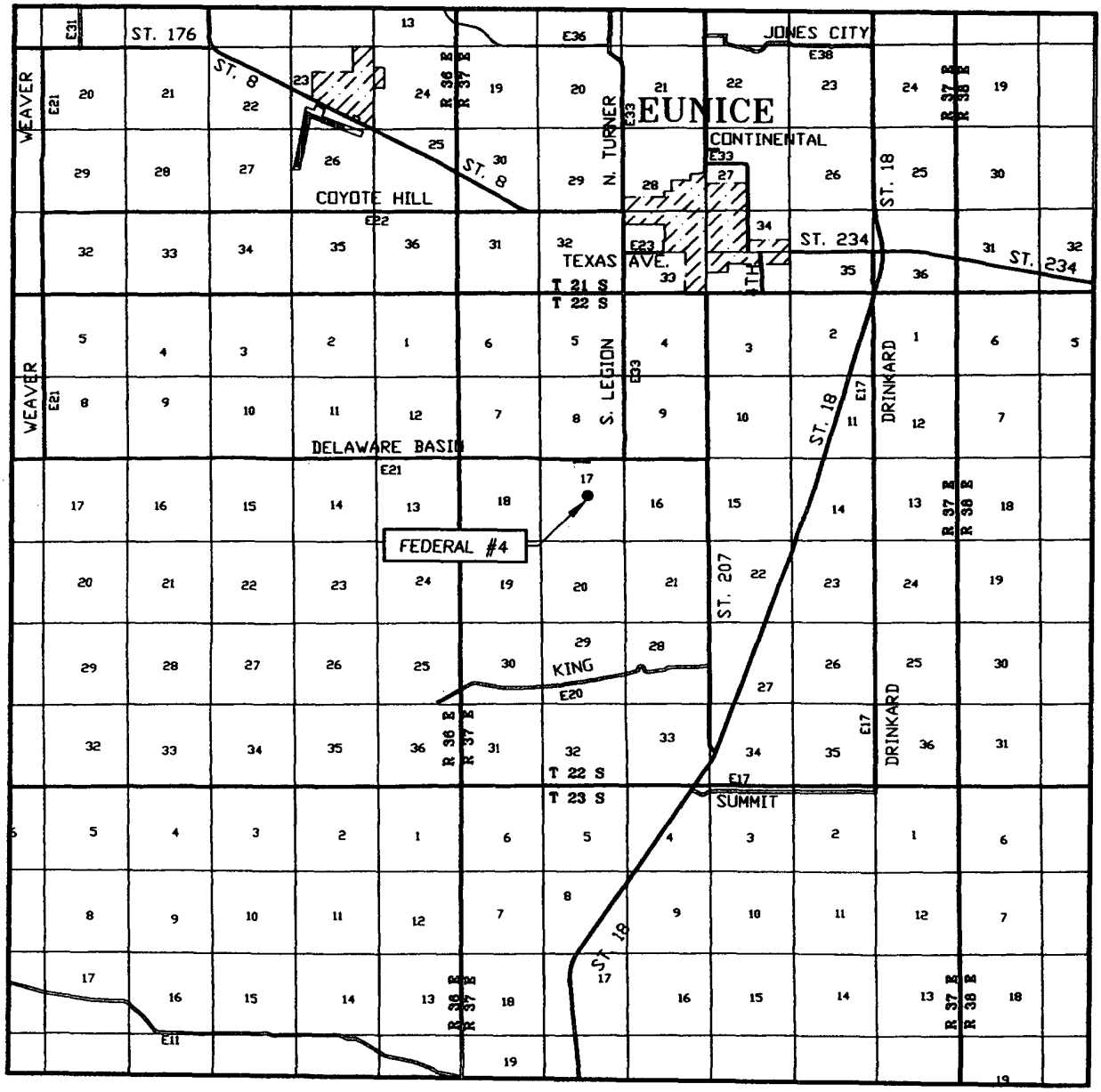
LEASE FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
EUNICE, N.M.

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

EXHIBIT A

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 17 TWP. 22-S RGE. 37-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 2310' FNL & 2310' FEL

ELEVATION 3392'

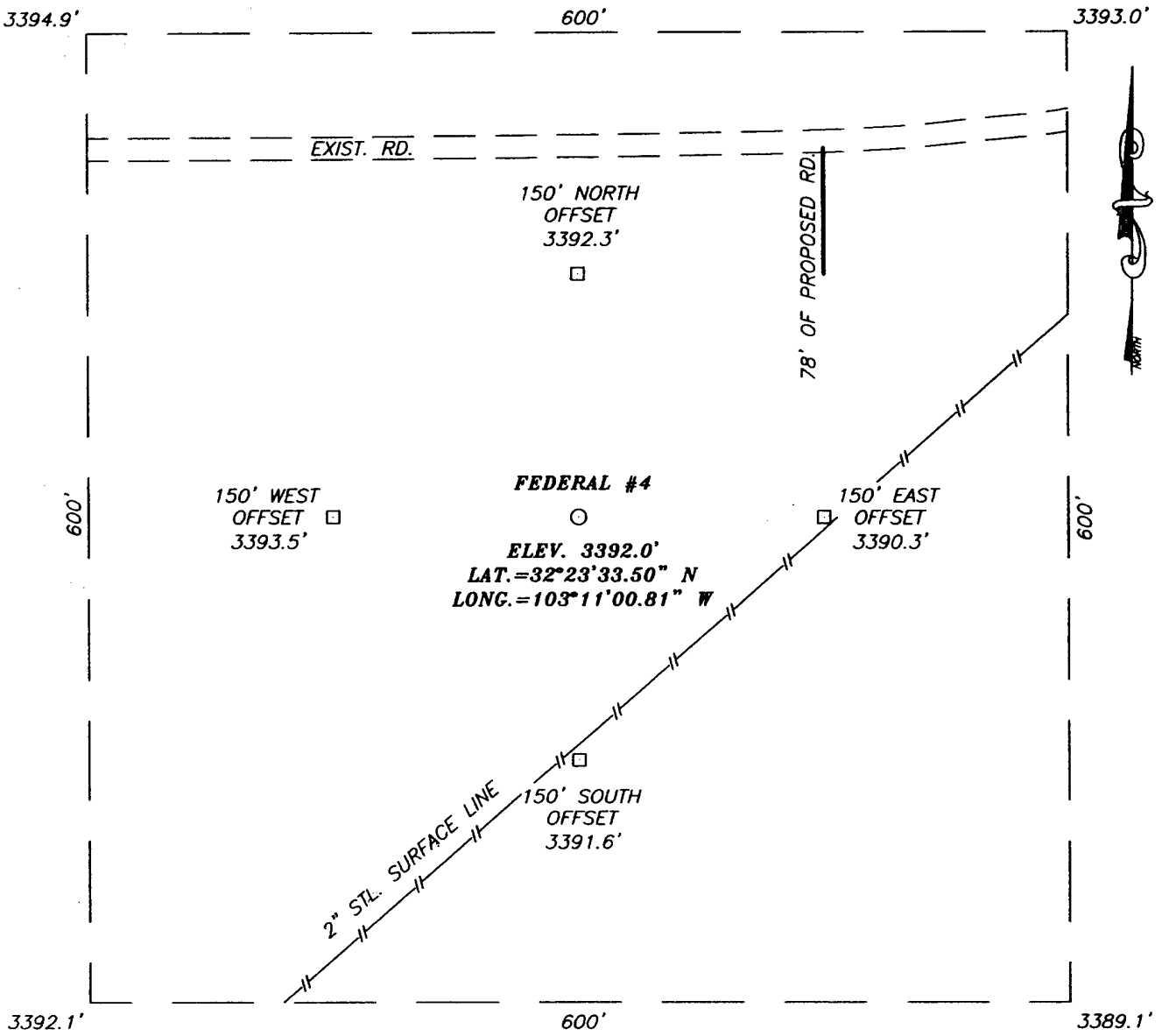
OPERATOR RANGE OPERATING NEW MEXICO, INC.

LEASE FEDERAL

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

SECTION 17, TOWNSHIP 22 SOUTH, RANGE 37 EAST, N.M.P.M.,

LEA COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF ST. HWY. #207 AND CO. RD. E-21 (DELAWARE BASIN RD.), GO WEST ON CO. RD. E-21 FOR APPROX. 1.1 MILES. TURN LEFT AND GO SOUTH APPROX. 0.34 MILES. TURN RIGHT AND GO WEST APPROX. 0.30 MILES. THIS LOCATION IS APPROX. 235 FEET SOUTH.

100 0 100 200 Feet

Scale: 1"=100'

PROVIDING SURVEYING SERVICES SINCE 1946

JOHN WEST SURVEYING COMPANY

412 N. DAL PASO

HOBBS, N.M. 88240

(505) 393-3117

RANGE OPERATING NEW MEXICO, INC.

FEDERAL #4
LOCATED 2310 FEET FROM THE NORTH LINE
AND 2310 FEET FROM THE EAST LINE OF SECTION 17,
TOWNSHIP 22 SOUTH, RANGE 37 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.

Survey Date: 03/24/06	Sheet 1 of 1 Sheets		
W.O. Number: 06.11.0531	Dr By: M.R.		Rev 1: N/A
Date: 03/28/06	Disk: CD#6	06110531	Scale: 1"=100'

EXHIBIT B

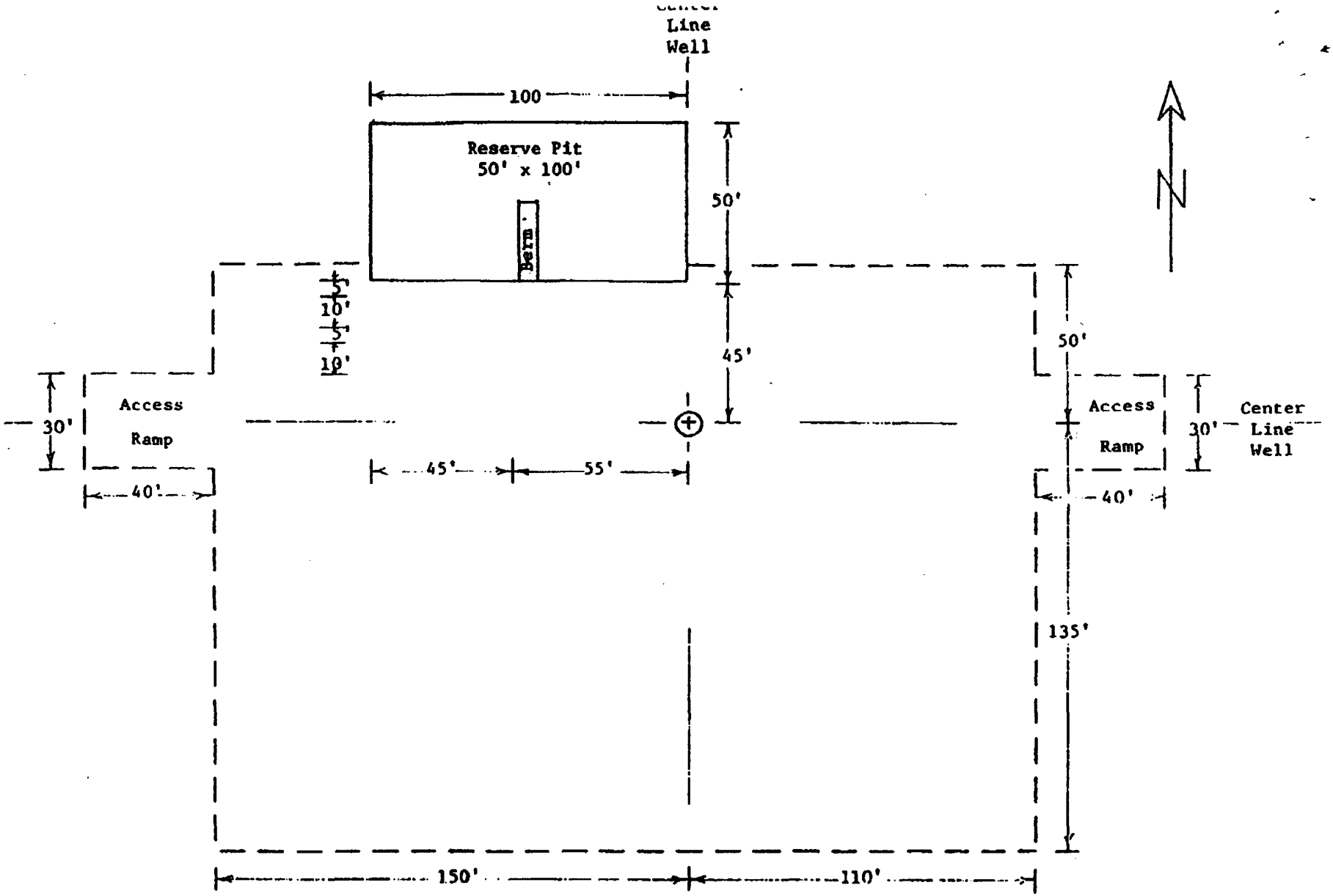


EXHIBIT C

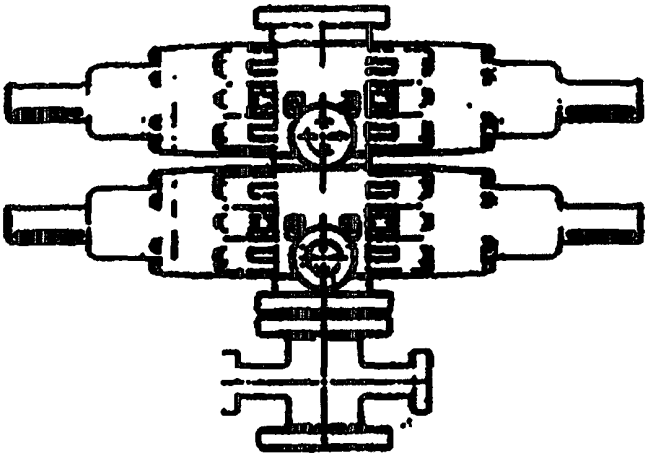
UNITED DRILLING, INC

LOCATION PLAT

RIG 24

Scale: 1"=40'

BLOW OUT PREVENTION EQUIPMENT



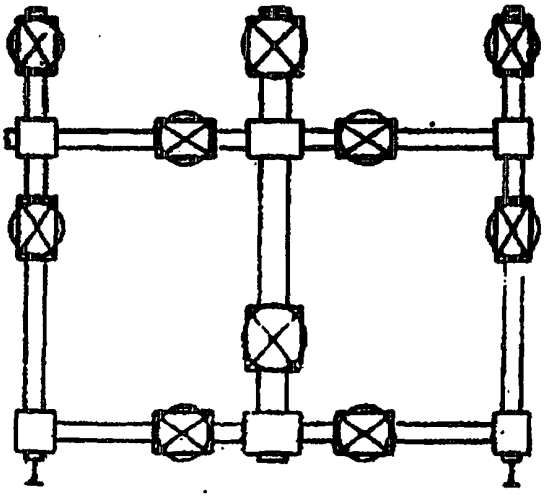
BOP Stack

— 1 Rucker Shaffer "B" double ram 10" - 3000 psi WP

Closing Unit

— Hydril model 80 three station accumulator
— Controls located in accumulator house and on rig floor

CHOKE MANIFOLD



900 Series. 3000 psi WP

PLAT #2

United State Department of the Interior

Bureau of Land Management

ROSWELL FIELD OFFICE
2902 West Second Street
Roswell, New Mexico 88201

Statement Accepting Responsibility for Operations

Operator Name:	Range Operating New Mexico, Inc.
Street or Box:	777 Main Street, Suite 800
City, State:	Fort Worth, TX
Zip Code:	76102

The undersigned accepts all applicable terms, conditions, stipulations and restrictions concerning operations conducted on the leased land or portion thereof, as described below:

Lease No.:	NM 1410
Legal Description of Land:	Sec. 17, T22S, R37E SW/4 NE/4
Formations:	Eunice San Andres Southwest
Bond Coverage: (State, Nationwide or Individual)	Statewide
BLM Bond File No.:	NM2399

Authorized Signature: Bryan Lucas pH

Title: Petroleum Engineer

Date: 5/18/06

NOTICE TO SURFACE OWNER

Surface Owner

Notice Date

Deck Estate
c/o Bank of America
Attn: Mr. Tim Woltors
P. O. Box 270
Midland, TX 79702

5-18-06

12. Surface Owner's Name and Address:

Deck Estate
c/o Bank of America
Attn: Mr. Tim Woltors
P. O. Box 270
Midland, TX 79702

13. Operator's Representative and Certification.

A. The field representatives responsible for assuring compliance with the approved surface use plan are:

	Office	Mobile
District Engineer Bryan Surles	817-810-1971	817-360-9663
Field Foreman Chris Garcia	505-394-1485	505-631-9025

B. I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by Range Operating New Mexico, Inc. and it contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of the 18 U.S.C. 1001 for the filing of a false statement.

DATE: 5-18-06

Bryan Surles ph
Bryan Surles
District Engineer

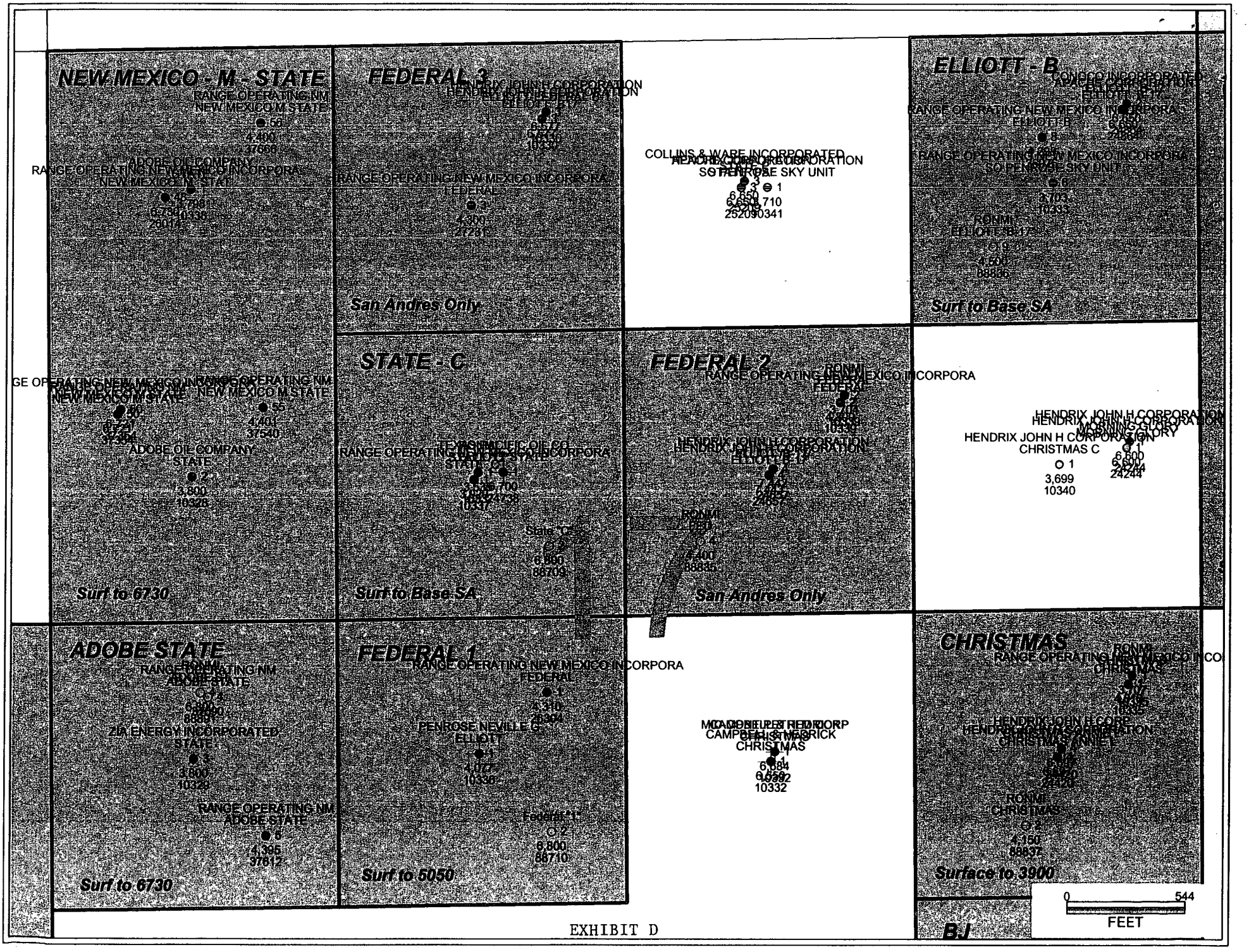
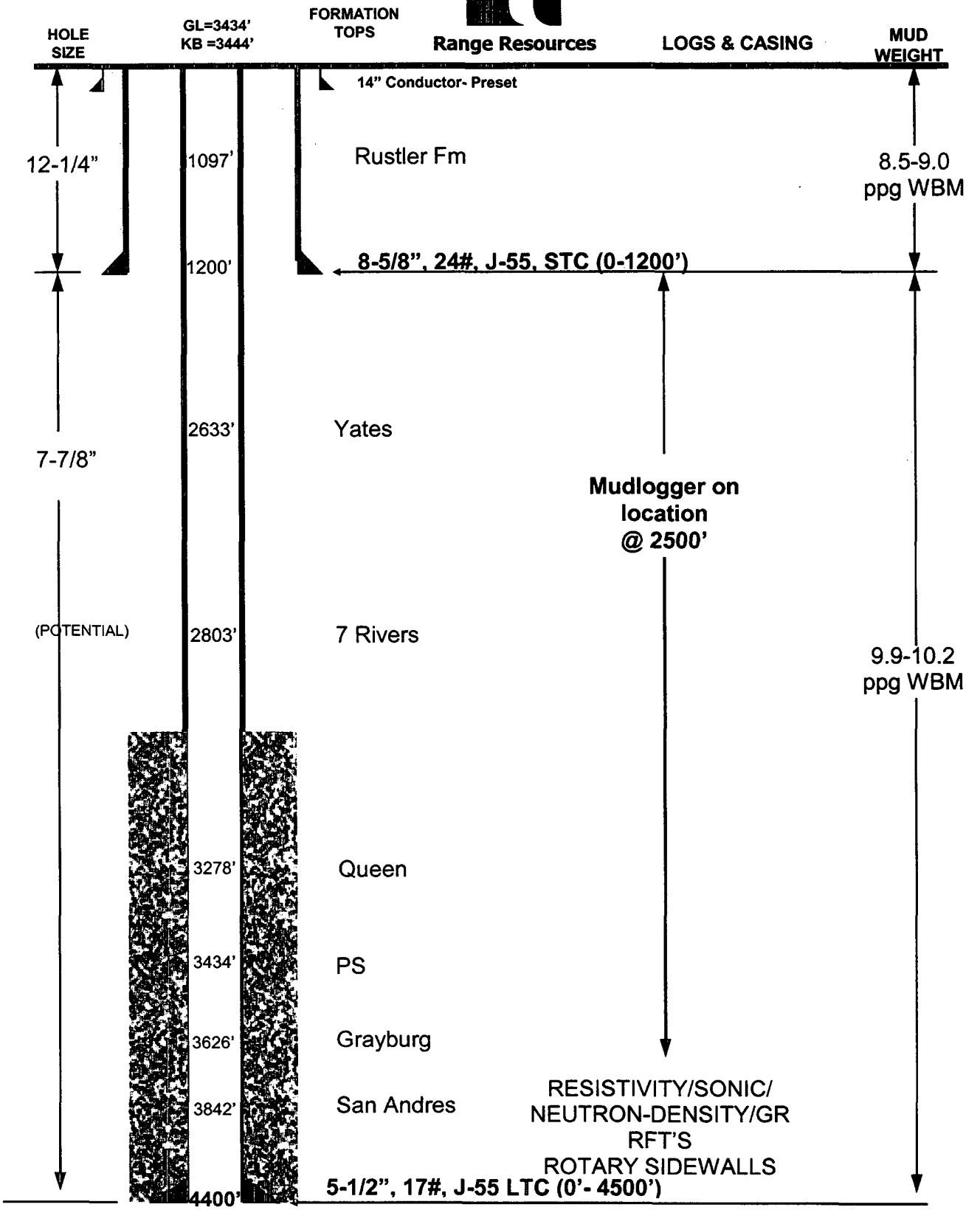

NEW MEXICO - M - STATE
RANGE OPERATING NM
NEW MEXICO M STATE
ADOBE OIL COMPANY
RANGE OPERATING NEW MEXICO INCORPORA
NEW MEXICO M STATE
Surf to 6730
FEDERAL 3
HENDRIX JOHN H CORPORATION
ELLIOTT FEDERAL
RANGE OPERATING NEW MEXICO INCORPORA
FEDERAL
San Andres Only
COLLINS & WARE INCORPORATED
SO PENROSE SKY UNIT
ELLIOTT - B
RANGE OPERATING NEW MEXICO INCORPORA
ELLIOTT B
SO PENROSE SKY UNIT
Surf to Base SA
STATE - C
TEXAS PACIFIC OIL CO
RANGE OPERATING NEW MEXICO INCORPORA
STATE
State "C"
Surf to Base SA
FEDERAL 2
RANGE OPERATING NEW MEXICO INCORPORA
FEDERAL
HENDRIX JOHN H CORPORATION
ELLIOTT FEDERAL
San Andres Only
HENDRIX JOHN H CORPORATION
MORNING GLORY
CHRISTMAS C
ADOBE STATE
RANGE OPERATING NM
ADOBE STATE
ZIA ENERGY INCORPORATED
STATE
Surf to 6730
FEDERAL 1
RANGE OPERATING NEW MEXICO INCORPORA
FEDERAL
PENROSE NEVILLE G
ELLIOTT
Federal "1"
Surf to 5050
CAMPBELL & BRISCOE
CHRISTMAS
CHRISTMAS
RANGE OPERATING NEW MEXICO INCO
CHRISTMAS
HENDRIX JOHN H CORP
CHRISTMAS ANNIE E
RONMI
CHRISTMAS
Surface to 3900
0
544
FEET
B.J

EXHIBIT D

WELL : **Federal #4**
SL : **2310' FNL & 2310' FEL, Sec 17-T22S-R37E FIELD:Eunice San AndresSW**
COUNTY : **Lea County** **OBJECTIVE TD: 4400'**
STATE : **New Mexico**



Range Operating New Mexico

Elliott B Federal #4
Lea County, NM
Drilling Program

Prepared 5/15/06

PROPOSED DEPTH: 4,200' MD / 4,200' TVD
GROUND ELEVATION: **3,392'**
KB: **17'**

LOCATION: 2310' FNL & 2310' FEL, Section 17-T22S-R37E, Lea County, NM

ANTICIPATED PRODUCTIVE FORMATION: San Andres

API NO:

GENERAL:
The Federal #14 will be a 4,400' San Andres test in Lea County, New Mexico drilled on a daywork basis by United Rig #24. An 12-1/4" surface hole will be drilled to +/-1200'. A string of 8-5/8" casing will be run and cemented to surface.

Nipple up BOPs and test same, drilling will continue with a 7-7/8" hole to a total depth of 4,400'. Actual TD will be spaced so that casing will be landed where the casing head can be screwed on. After electric-logging the open-hole interval, a string of 5-1/2" casing will be run and cemented from total depth to 1,000' and the tubing head installed.

ESTIMATED FORMATION TOPS: (Log Depths)

Upper Permian Rustler Fm	+2305 ft	1097 ft MD	
Upper Permian Yates Fm	+769 ft	2633 ft MD	+
Upper Permian 7 Rivers Fm	+572 ft	2830 ft MD	
Upper Permian Queen Fm	+124 ft	3278 ft MD	+
Upper Permian PS Fm	-32 ft	3434 ft MD	+
Upper Permian Grayburg Fm	-224 ft	3626 ft MD	* +
Upper Permian San Andres Fm	-440 ft	3842 ft MD	*
PTD	-998 ft	4400 ft MD	

*= Primary Reservoir Targets
+= Secondary Reservoir Targets

DETAILED DRILLING PROCEDURE

TIMES AND EVENTS TO NOTE ON DRILLING REPORT:

A. SPUD (date and time)
B. TD (each interval date and time)
C. CEMENT IN PLACE (date and time)
D. RIG RELEASE (date and time)

BOTTOM HOLE ASSEMBLIES

BHA #1: (0-1200') - Bit, (2) 8" DC, (10) 6.25" DC's

BHA #2: (1200'-4500') - Bit, (24) 6.25" DC's

USE OF RT TOOL

No RT tools in use.

MUD PROGRAM

INTERVAL	MUD WEIGHT	FUNNEL VIS.	API Fluid Loss
0' - 1200'	8.4 – 9.4	32-34	NC
1200' - 4500'	10.0	28	NC

1) Level and build an all-weather location and access road.

2) MIRU United Rig #24. Perform rig safety inspection and ensure that everything is in proper working order prior to spudding well.

3) Notify NMOCD of intent to spud, run casing and cement each 24 hours in advance 505-748-1283.

4) Spud well with 12-1/4" mill tooth bit. Drill to +/- 1200' with surveys at 500' and 1000' (Actual depth will be determined by the length of the casing). Circulate hole clean. Sweep and condition hole to run casing. Pull out of hole, lay down BHA.

NOTE: Mud through this interval will be a native spud mud supplemented with Bentonite. Lime may be used to flocculate the mud and increase the yield point to clean the hole. Mix paper for seepage control. Utilize all solids control equipment to control drill solids. Run as fine of mesh shaker screens as possible. Use water to control mud weight and viscosity. Maintain mud weight at 8.4 – 9.0 ppg.

5) Rig up casing crew and run 8-5/8", 24#, J-55 casing as follows:

1-8-5/8" Texas Pattern Shoe
1-8-5/8" Insert Float Collar
1-8-5/8" x 11" Centralizer 10' above shoe
1-8-5/8" x 11" Centralizer every other joint
1-8-5/8" Stop Ring

6) Circulate for at least bottoms up plus one casing volume with mud prior to cementing. Cement surface casing according to cement recommendation. NOTE: Have field bin, cement, and circulating equipment on location prior to casing job.

a) Review rates, pressures, displacement volumes and casing pressure rating with Service Company and rig personnel. All cement slurries are to be lab tested; both a pilot test and a test of the actual field blend. Report results, including 24 hour compressive strengths, to the office. **(See Cement Testing Requirements below).** Also keep two samples of each dry cement in the event that a problem is encountered while cementing. Discard this sample if all indications are positive.

b) Cement well as follows: Pump 20 bbl fresh water followed by **200** sks of Lead: 35/65 POZ:Class C + 6% D020 + 5% (BWOW) D044 + 1 pps D130, @ 12.8 ppg, followed by **180** sks Tail: Class C + 1% S001 + 0.1 pps D130 @ 14.8 ppg. Displace with fresh water, bump plug with w/ 500 psi over final pump pressure.

c) If cement is not circulated to surface, contact the office and the NMOCD and prepare to run 1" pipe and top out cement. Have 1" pipe on location for possible top-out.

d) If cement falls, fill 12-1/4" X 8-5/8" annulus with cement.

7) Release pressure and check for flow back. Set casing on bottom. If float is holding, base nipple up of wellhead and BOP on the surface cement samples. Well must stand at least 8 hours total before any testing of casing is performed as per NMOCD.

8) After cementing casing, weld on 8-5/8" flange type casing head. Test BOP blind rams & choke manifold to 250# low & 3000# high. Pick up Bit #2 (7-7/8") & BHA , trip in hole, test BOP pipe rams to 250# low & 3000#. **Pressure test casing to 1000 psi for 30 minutes prior to drilling out shoe.** Clearly report this test information of the daily drilling report.

MUD NOTES: See Mud Program for details

After cementing 8-5/8" casing circ pit with brine water. Mix paper for seepage control. Utilize pre-hydrated Gel/Lime sweeps for flushing the hole. Run all available solids control equipment to control weight. Add brine water as needed to maintain volume. Add LCM to system only as needed. Use batch LCM treatment if losses occur and maintain as needed.

9) Drill ahead with brine water in 7-7/8" hole taking deviation surveys every ± 500' or nearest bit run per NMOCD rules. Use sweeps as needed to clean hole. Drill to ± 4400; exact TD will be determined by the length of the casing. Sweep and condition hole in preparation for logging. Spot a 50 bbl, 40-42 visc pill prior to POOH for logs. Strap out of hole.

10) RU Wireline Truck and Tools. Log well as instructed by Range Operating NM. Rotary sidewall cores may be required along with RFT's.

11) Make a conditioning trip prior to running casing. Trip into hole with BHA and drill pipe, break circulation at 4500'. Ream last two stands to bottom. Circulate and condition hole. Maintain viscosity of 28. TOH laying down 4-1/2" drill pipe and drill collars. Clear floor and prepare to run casing.

12) Rig up casing crew and run 5-1/2", 17#, J-55, LT&C as follows:

a) Float shoe (thread-lock)
b) 1 jt. 5-1/2", 17#, J-55, LT&C casing (thread-lock)
c) Float collar (thread-lock)
d) 5-1/2", 17#, J-55, LT&C Casing to surface.

The two bottom joints of 5-1/2" casing and the float shoe and float collar should be thread-locked (do not weld pipe). Run 1 centralizer 5' above shoe with limit clamp, one on the next collar, one just below the float collar with limit clamp and one per joint up to 3300'.

13) Circulate mud for at least bottoms up plus one casing volume prior to cementing.

14) Cement the production casing as follows. Re-figure cement volumes on a basis of: caliper + 20% + 50 sx. Precede cement with 20 bbl fresh water, 500 gals superflush, 20 bbl fresh water.

Lead (3,500' to 1,000'):

450 sacks
Slurry: 35:65 Poz : Class C + 6% D20 + 5% D44 + 0.3% S1 + 4 pps D42 + 0.1 pps D130
Slurry Weight: 12.5 ppg Slurry Yield: 2.16 cuft/sk Water: 11.6 gals/sk

Tail (4,500' to 3,500');

250 sacks
Slurry: 50:50 Poz : Class C + 2% D20 + 5% D44
Slurry Weight: 14.2 ppg Slurry Yield: 1.36 cuft/sk Water: 6.33 gals/sk

Review rates, pressures, displacement volumes and casing pressure rating with Service Company and rig personnel. All cement slurries are to be lab tested; both a pilot test and a test of the actual field blend. Report results, including 24 hour compressive strengths, to the office. **(See Cement Testing Requirements below).** Also keep two samples of each dry cement.

a) Have additional water storage on location as necessary for mixing cement. Have water analyzed by cementing company for compatibility with cement and chemicals.

b) Reciprocate pipe during cement job. Take special care to move pipe very slowly on the down stroke. Pump spacer and cement at 7-8 BPM. When the last cement has been pumped, maintain rate at 7-8 BPM. Displace with fresh water. When reaching displacement to shoe joint minus 10 bbls slow pump rate to 2 barrels per minute or less prior to bumping plug. Bump plug with 500 psi over final displacement pressure and hold pressure for 15 minutes.

15) Release pressure and check for flow back. If floats are holding, continue to make preparations to hang 5-1/2" casing one (1) foot off bottom. If floats do not hold, wait 12 hours on cement.

16) Set 5-1/2" slips in "A" section with full string weight. Nipple down BOP, Nipple up well head.

17) Install cap. Clean mud pits and release rig.

CEMENT TESTING REQUIREMENTS:

Laboratory Blend: Obtain thickening time, rheology, water loss, and compressive strengths of the laboratory cement blend with a water sample of the actual water to be used in cementing for each cement slurry to be pumped.

Field Blend: Obtain thickening time of the field cement blend with a water sample of the actual water to be used in cementing for each slurry to be pumped. If the thickening time of the field blend is consistent with the thickening time of the laboratory blend, proceed with the cement job. If not, wait on the compressive strength results. Regardless of thickening time results, obtain all of the compressive strengths of field blend to compare with the compressive strengths of the laboratory blend.

Don Robinson	Drilling Manager	(469) 450-2281	(972) 317-8345	(817) 509-1506
George Allen Teer	VP of Operations	(817) 723-1107	(817) 491-3740	(817) 870-2601
Bryan Surles	District Engineer	(817) 360-9663	(817) 346-8188	(817) 810-1971
Martin Emery	Chief Geologist	(817) 366-3693	(817) 430-4861	(817) 870-2601
Paula Hale	Sr. Regulatory Sp.	(817) 773-6002		(817) 810-1916

United Rig Company, Artesia, NM	Rig Company	Angel Salazar	(505) 623-7730
United Rig #24			
Nova Mud, Inc - Hobbs, NM	Drlg Mud	Dale Welch	(800) 530-8786
Master Tubulars – Midland, TX	Casing & Tubing	Randy Martin	(800) 682-8996
Suttles Logging, Inc. – Midland, TX	Mudlogging	Sam Samford	(432) 687-3148
Schlumberger-Artesia, NM	Cementing Service	Lynn Northcutt	(505)748-1392 cell (505) 365-7510
National – Hobbs, NM	Well Heads		(505) 393-9928
Weatherford –Artesia, NM	Float Equipment		
Halliburton Logging –Hobbs, NM	Open Hole Logs	Michael Escriva Tommy Johnson	(505) 392-7543
Allen's Casing Crew -Hobbs, TX	Csg Crew		
National –Hobbs, NM	General Supplies		(505) 393-9928
TFH –Hobbs, NM	Fork Lift		(505) 397-3270
Abbot Brothers	Conductor setting		
RTO Sales & Lease	Satellite Internet		(432) 550-5678

EUNICE SOUTHWEST (San Andres)
Federal No. 4
Well Objectives/Prognosis/Evaluation
April 12, 2006

I) GENERAL

Operator:	**Range Operating NM, Inc. (100%)**	
Partners/WI:	none	
Proposed Well Designation:	Federal No. 4	
API No.:	30-025-	
Well Classification:	PUD	
Confidentiality Status:	Restricted, no information release without approval	
PTD (Permit Depth):	4400 ft MD	
Anticipated Spud Date:		
Estimated Days to Drill:	10	
Drilling Contractor:	United Rig No. 24	
Expected Type of Hydrocarbon:	Oil/Gas, Gravity and GOR variable	
Contacts:	Tom Brace, V. P. Expl.	(817)810-1926
	Martin Emery, Project Geologist	(817)810-1951
	Steve Chapman, Reservoir Engineer	(817)810-1912
	Bobby Ebeier, Landman	(817)810-1987
	Don Robinson, Drilling Mgr.	(817)509-1506
	Bryan Surles, Oper. Eng.	(817)810-1971

II) WELL OBJECTIVES

The objective of the well is to drill and evaluate the San Andres Formation and complete the well as a Penrose-Skelly and Gryaburg producer. The expected **EUR** for the well is **XXX MMCFGE**. The expected **IP** is **XXX MCFG & XX BO/D**.

III) LOCATION

Surface Location:	**2310 ft FNL 2310 ft FEL** **Section 17-T22S-R37E** Lea County, New Mexico **Lat: 32 deg 23' 33.50"** **Long: 103 deg 11' 00.81"**
Bottom-hole Location:	same, vertical
Elevation:	GL: 3392 ft KB: 3402 ft
Directions to Location:	From the intersection of St. Hwy No. 207 and Co. Rd. E-21 (Delaware Basin Rd.), go west on E-21 for approx. 1.1 miles. Turn left and go south approx. 0.34 miles. Turn right and go west for approx. 0.3 miles. The location is approx. 235 ft south.
Access to Location:	Unrestricted

IV) PROGNOSIS

Upper Permian Rustler Fm	+2305 ft	1097 ft MD	
Upper Permian Yates Fm	+769 ft	2633 ft MD	
Upper Permian 7 Rivers Fm	+572 ft	2830 ft MD	
Upper Permian Queen Fm	+124 ft	3278 ft MD	
Upper Permian PS Fm	-32 ft	3434 ft MD	*
Upper Permian Grayburg Fm	-224 ft	3626 ft MD	*
Upper Permian San Andres Fm	-440 ft	3842 ft MD	+
PTD	-998 ft	4400 ft MD	

*= Primary Reservoir Targets
+= Secondary Reservoir Targets

EUNICE SOUTHWEST (San Andres)
Federal No. 4
Well Objectives/Prognosis/Evaluation

V) PRIMARY RESERVOIR TARGETS

Upper Permian **San Andres DOL**

Rock Type:	DOL
Thickness:	~250 ft
Avg. Porosity:	10-13%; ranges from 3-20%
Avg. Perm.:	?md
Est. Reservoir Temp.:	100-110°F
Est. Reservoir Press.:	1400-1450 psi (assuming no pressure depletion)

VI) SECONDARY RESERVOIR TARGETS

Upper Permian **Penrose-Skelly SS & Grayburg DOL**

VII) PROPOSED WELL DESIGN

Drilling Fluids/Additives: Brine, 10.1 lbs/gal
Casing Design:

VIII) EVALUATION

Mud-Logging:

Contractor:	**None**
Basic Requirements:	Cuttings lithology description/comments Oil shows/fluorescence/cut description Gas monitoring, chromatography, gas ratios Penetration rate/depth, rig operations, bit and mud properties One man unit
Correlation:	Please use the following logs for correlation and refer to Section **(X)** for offset well tops:
Sampling:	
Reporting:	E-mail/WWW or fax daily reports/logs to: **Martin Emery** **(Primary)** (817)810-1951 (wk) memery@rangeresources.com (817)810-1988 (fax) (817)430-4861 (hm) (817)366-3693 (cell)
Distribution:	see attached distribution

EUNICE SOUTHWEST (San Andres)
Federal No. 4
Well Objectives/Prognosis/Evaluation

VIII) EVALUATION (cont)

Conventional Coring:	None	
Open-Hole DSTs:		
DST Contractor:	None	
DST Program:	None	
Distribution:	see attached distribution	
Open-Hole Logging:		
Contractor:	**BAKER HUGHES**	**(432)563-1275**
Logging Program:	2500-4400 ft MD (TD)	DSL-CN-ZDL-DLL-MLL (log GR-Neutron to surface)
Distribution:	see attached distribution	

IX) POTENTIAL HAZARDS/PITFALLS

Problematic Drilling Zones:	
Abnormal Pressure/Temperature Zones:	Possibilty of partial depletion within Queen to Grayburg Formations
Fractured/Lost Circulation Zones:	See above; **Please tag mud if circulation is lost in primary pay interval**
Presence of H_2S or CO_2:	None expected
Faults Intersecting the Wellbore:	None expected

X) CORRELATION LOG TOPS:

Correlations
Upper Permian Rustler Fm
Upper Permian Yates Fm
Upper Permian 7 Rivers Fm
Upper Permian Queen Fm
Upper Permian PS Fm
Upper Permian Grayburg Fm
Upper Permian San Andres Fm
TD

Prepared by: Martin Emery
Date: April 12, 2006
Revised:

RANGE RESOURCES

May 31, 2006

United States Department of the Interior
Bureau of Land Management
Carlsbad Field Office
620 East Greene Street
Carlsbad, NM 88220-6292

Re: Federal #4
SW/4 NE/4, Sec. 17, T22S, R37E
Lea County, NM

Gentlemen:

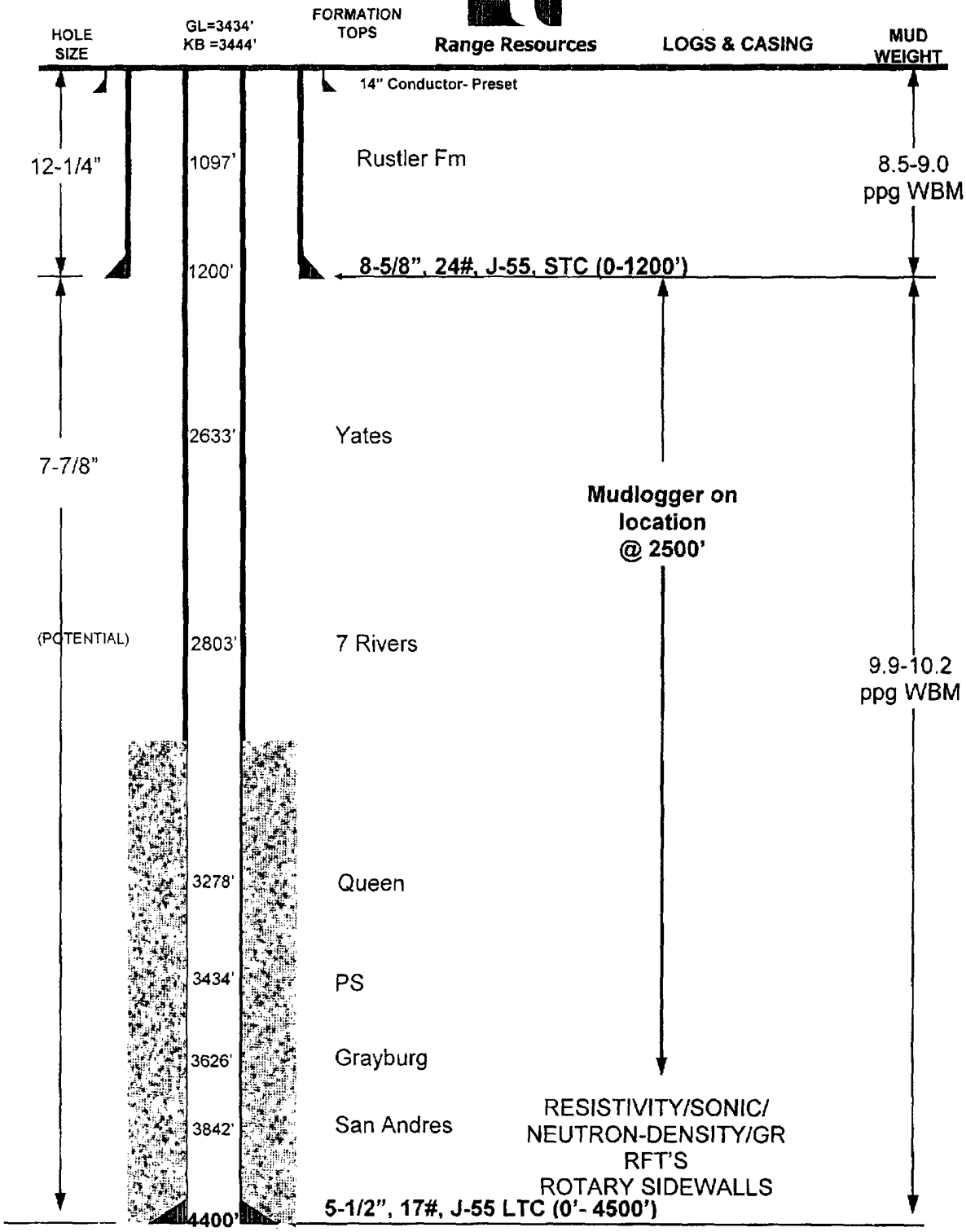
The surface owner on the subject well is the Deck Estate, whose address is Bank of America, Attn: Mr. Tim Woltors, P. O. Box 270, Midland, TX 79702. Please accept this letter as my testimony that I have made a verbal agreement to pay surface damages to the Deck Estate on the subject well. Please call me if you have any questions.

Thank you,

Robert Ebeier
Senior Landman
817.870.2601 (office)

Range Resources Corporation
500 Throckmorton Street Suite 1900 Fort Worth Texas 76102 Tel (817) 870-2601 Fax (817) 870-2316

WELL : Federal #4
SL : 2310' FNL & 2310' FEL, Sec 17-T22S-R37E FIELD:Eunice San AndresSW
COUNTY : Lea County OBJECTIVE TD: 4400'
STATE : New Mexico



Range Operating New Mexico

Federal #4
Lea County, NM
Drilling Program

Prepared 5/15/06

PROPOSED DEPTH: 4,200' MD / 4,200' TVD
GROUND ELEVATION: **3,392'**
KB: **17'**

LOCATION: 2310' FNL & 2310' FEL, Section 17-T22S-R37E, Lea County, NM

ANTICIPATED PRODUCTIVE FORMATION: San Andres

API NO:

GENERAL:
The Federal #4 will be a 4,400' San Andres test in Lea County, New Mexico drilled on a daywork basis by United Rig #24. An 12-1/4" surface hole will be drilled to +/-1200'. A string of 8-5/8" casing will be run and cemented to surface.

Nipple up BOPs and test same, drilling will continue with a 7-7/8" hole to a total depth of 4,400'. Actual TD will be spaced so that casing will be landed where the casing head can be screwed on. After electric-logging the open-hole interval, a string of 5-1/2" casing will be run and cemented from total depth to 1,000' and the tubing head installed.

ESTIMATED FORMATION TOPS: (Log Depths)

Upper Permian Rustler Fm	-2305 ft	1097 ft M	
Upper Permian Yates Fm	+769 ft	2633 ft M	
Upper Permian 7 Rivers Fm	-572 ft	2830 ft M	
Upper Permian Queen Fm	+124 ft	3278 ft M	
Upper Permian PS Fm	-32 ft	3434 ft M	+
Upper Permian Grayburg Fm	-224 ft	3626 ft M	+
Upper Permian San Andres Fm	-440 ft	3842 ft M	*
PTD	-998 ft	4400 ft M	

*= Primary Reservoir Targets
+= Secondary Reservoir Targets

DETAILED DRILLING PROCEDURE

TIMES AND EVENTS TO NOTE ON DRILLING REPORT:

A. SPUD (date and time)
B. TD (each interval date and time)
C. CEMENT IN PLACE (date and time)
D. RIG RELEASE (date and time)

BOTTOM HOLE ASSEMBLIES

BHA #1: (0-1200') - Bit, (2) 8" DC, (10) 6.25" DC's

BHA #2: (1200'-4500') - Bit, (24) 6.25" DC's

USE OF RT TOOL

No RT tools in use.

MUD PROGRAM

INTERVAL	MUD WEIGHT	FUNNEL VIS.	API Fluid Loss
0' - 1200'	8.4 – 9.4	32-34	NC
1200' - 4500'	10.0	28	NC

1) Level and build an all-weather location and access road.

2) MIRU United Rig #24. Perform rig safety inspection and ensure that everything is in proper working order prior to spudding well.

3) Notify NMOCD of intent to spud, run casing and cement each 24 hours in advance 505-748-1283.

4) Spud well with 12-1/4" mill tooth bit. Drill to +/- 1200' with surveys at 500' and 1000' (Actual depth will be determined by the length of the casing). Circulate hole clean. Sweep and condition hole to run casing. Pull out of hole, lay down BHA.

NOTE: Mud through this interval will be a native spud mud supplemented with Bentonite. Lime may be used to flocculate the mud and increase the yield point to clean the hole. Mix paper for seepage control. Utilize all solids control equipment to control drill solids. Run as fine of mesh shaker screens as possible. Use water to control mud weight and viscosity. Maintain mud weight at 8.4 – 9.0 ppg.

5) Rig up casing crew and run 8-5/8", 24#, J-55 casing as follows:

1-8-5/8" Texas Pattern Shoe
1-8-5/8" Insert Float Collar
1-8-5/8" x 11" Centralizer 10' above shoe
1-8-5/8" x 11" Centralizer every other joint
1-8-5/8" Stop Ring

6) Circulate for at least bottoms up plus one casing volume with mud prior to cementing. Cement surface casing according to cement recommendation. NOTE: Have field bin, cement, and circulating equipment on location prior to casing job.

a) Review rates, pressures, displacement volumes and casing pressure rating with Service Company and rig personnel. All cement slurries are to be lab tested; both a pilot test and a test of the actual field blend. Report results, including 24 hour compressive strengths, to the office. **(See Cement Testing Requirements below).** Also keep two samples of each dry cement in the event that a problem is encountered while cementing. Discard this sample if all indications are positive.

b) Cement well as follows: Pump 20 bbl fresh water followed by **200** sks of Lead: 35/65 POZ:Class C + 6% D020 + 5% (BWOW) D044 + 1 pps D130, @ 12.8 ppg, followed by **180** sks Tail: Class C + 1% S001 + 0.1 pps D130 @ 14.8 ppg. Displace with fresh water, bump plug with w/ 500 psi over final pump pressure.

c) If cement is not circulated to surface, contact the office and the NMOCD and prepare to run 1" pipe and top out cement. Have 1" pipe on location for possible top-out.

d) If cement falls, fill 12-1/4" X 8-5/8" annulus with cement.

7) Release pressure and check for flow back. Set casing on bottom. If float is holding, base nipple up of wellhead and BOP on the surface cement samples. Well must stand at least 8 hours total before any testing of casing is performed as per NMOCD.

8) After cementing casing, weld on 8-5/8" flange type casing head. Test BOP blind rams & choke manifold to 250# low & 3000# high. Pick up Bit #2 (7-7/8") & BHA , trip in hole, test BOP pipe rams to 250# low & 3000#. **Pressure test casing to 1000 psi for 30 minutes prior to drilling out shoe.** Clearly report this test information of the daily drilling report.

MUD NOTES: See Mud Program for details

After cementing 8-5/8" casing circ pit with brine water. Mix paper for seepage control. Utilize pre-hydrated Gel/Lime sweeps for flushing the hole. Run all available solids control equipment to control weight. Add brine water as needed to maintain volume. Add LCM to system only as needed. Use batch LCM treatment if losses occur and maintain as needed.

9) Drill ahead with brine water in 7-7/8" hole taking deviation surveys every ± 500' or nearest bit run per NMOCD rules. Use sweeps as needed to clean hole. Drill to ± 4400; exact TD will be determined by the length of the casing. Sweep and condition hole in preparation for logging. Spot a 50 bbl, 40-42 visc pill prior to POOH for logs. Strap out of hole.

10) RU Wireline Truck and Tools. Log well as instructed by Range Operating NM. Rotary sidewall cores may be required along with RFT's.

11) Make a conditioning trip prior to running casing. Trip into hole with BHA and drill pipe, break circulation at 4500'. Ream last two stands to bottom. Circulate and condition hole. Maintain viscosity of 28. TOH laying down 4-1/2" drill pipe and drill collars. Clear floor and prepare to run casing.

12) Rig up casing crew and run 5-1/2", 17#, J-55, LT&C as follows:
   a) Float shoe (thread-lock)
   b) 1 jt. 5-1/2", 17#, J-55, LT&C casing (thread-lock)
   c) Float collar (thread-lock)
   d) 5-1/2", 17#, J-55, LT&C Casing to surface.

   The two bottom joints of 5-1/2" casing and the float shoe and float collar should be thread-locked (do not weld pipe). Run 1 centralizer 5' above shoe with limit clamp, one on the next collar, one just below the float collar with limit clamp and one per joint up to 3300'.

13) Circulate mud for at least bottoms up plus one casing volume prior to cementing.

14) Cement the production casing as follows. Re-figure cement volumes on a basis of: caliper + 20% + 50 sx. Precede cement with 20 bbl fresh water, 500 gals superflush, 20 bbl fresh water.

Lead (3,500' to 1,000'):

450 sacks
Slurry: 35:65 Poz : Class C + 6% D20 + 5% D44 + 0.3% S1 + 4 pps D42 + 0.1 pps D130
Slurry Weight: 12.5 ppg Slurry Yield: 2.16 cuft/sk Water: 11.6 gals/sk

Tail (4,500' to 3,500'):

250 sacks
Slurry: 50:50 Poz : Class C + 2% D20 + 5% D44
Slurry Weight: 14.2 ppg Slurry Yield: 1.36 cuft/sk Water: 6.33 gals/sk

Review rates, pressures, displacement volumes and casing pressure rating with Service Company and rig personnel. All cement slurries are to be lab tested; both a pilot test and a test of the actual field blend. Report results, including 24 hour compressive strengths, to the office. **(See Cement Testing Requirements below).** Also keep two samples of each dry cement.

   a) Have additional water storage on location as necessary for mixing cement. Have water analyzed by cementing company for compatibility with cement and chemicals.

   b) Reciprocate pipe during cement job. Take special care to move pipe very slowly on the down stroke. Pump spacer and cement at 7-8 BPM. When the last cement has been pumped, maintain rate at 7-8 BPM. Displace with fresh water. When reaching displacement to shoe joint minus 10 bbls slow pump rate to 2 barrels per minute or less prior to bumping plug. Bump plug with 500 psi over final displacement pressure and hold pressure for 15 minutes.

15) Release pressure and check for flow back. If floats are holding, continue to make preparations to hang 5-1/2" casing one (1) foot off bottom. If floats do not hold, wait 12 hours on cement.

16) Set 5-1/2" slips in "A" section with full string weight. Nipple down BOP, Nipple up well head.

17) Install cap. Clean mud pits and release rig.

CEMENT TESTING REQUIREMENTS:

Laboratory Blend: Obtain thickening time, rheology, water loss, and compressive strengths of the laboratory cement blend with a water sample of the actual water to be used in cementing for each cement slurry to be pumped.

Field Blend: Obtain thickening time of the field cement blend with a water sample of the actual water to be used in cementing for each slurry to be pumped. If the thickening time of the field blend is consistent with the thickening time of the laboratory blend, proceed with the cement job. If not, wait on the compressive strength results. Regardless of thickening time results, obtain all of the compressive strengths of field blend to compare with the compressive strengths of the laboratory blend.

NAME	POSITION	CELL PHONE	HOME PHONE	OFFICE PHONE
Robinson	Drilling Manager	(469) 450-2281	(972) 317-8345	(817) 509-1506
ge Allen Teer	VP of Operations	(817) 723-1107	(817) 491-3740	(817) 870-2601
Surles	District Engineer	(817) 360-9663	(817) 346-8188	(817) 810-1971
Emery	Chief Geologist	(817) 366-3693	(817) 430-4861	(817) 870-2601
Hale	Sr. Regulatory Sp.	(817) 773-6002		(817) 810-1916

COMPANY NAME	SERVICE	CONTACT PERSON	TELEPHONE NO.
United Rig Company, Artesia, NM	Rig Company	Angel Salazar	(505) 623-7730
United Rig #24			
Nova Mud, Inc - Hobbs, NM	Drlg Mud	Dale Welch	(800) 530-8786
Master Tubulars – Midland, TX	Casing & Tubing	Randy Martin	(800) 682-8996
Suttles Logging, Inc. – Midland, TX	Mudlogging	Sam Samford	(432) 687-3148
Schlumberger-Artesia, NM	Cementing Service	Lynn Northcutt	(505)748-1392 cell (505) 365-7510
National – Hobbs, NM	Well Heads		(505) 393-9928
Weatherford –Artesia, NM	Float Equipment		
Halliburton Logging –Hobbs, NM	Open Hole Logs	Michael Escriva Tommy Johnson	(505) 392-7543
Allen's Casing Crew -Hobbs, TX	Csg Crew		
National –Hobbs, NM	General Supplies		(505) 393-9928
TFH –Hobbs, NM	Fork Lift		(505) 397-3270
Abbot Brothers	Conductor setting		
RTO Sales & Lease	Satellite Internet		(432) 550-5678

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: Range Operating New Mexico, Inc. Telephone: 817/810-1916 e-mail address: phale@rangeresources.com
Address: 777 Main St., Ste. 800, Ft. Worth, TX 76102
Facility or well name: Federal #4 API #: 30-025- 37963 U/L or Qtr/Qtr G Sec 17 T 22S R 37E
County: Lea Latitude 32°23'33.5" N Longitude 103°11'00.81" W NAD: 1927 ☒ 1983 ☐
Surface Owner: Federal ☒ State ☐ Private ☐ Indian ☐

Pit	**Below-grade tank**	
Type: Drilling ☒ Production ☐ Disposal ☐ Workover ☐ Emergency ☐ Lined ☒ Unlined ☐ Liner type: Synthetic ☒ Thickness 12 mil Clay ☐ Pit Volume 6,000 bbl	Volume: ____bbl Type of fluid: _____ Construction material: _____ Double-walled, with leak detection? Yes ☐ 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 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points)
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)
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)
	Ranking Score (Total 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 your 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: Pit will also have a felt liner under the synthetic liner.

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: 5-18-06
Printed Name/Title Paula Hale 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 PETROLEUM ENGINEER Signature _____ Date: JUN 2 2 2006

The sender of this message has requested a read receipt. Click here to send a receipt.

Mull, Donna, EMNRD

From: Phillips, Dorothy, EMNRD **Sent:** Thu 6/22/2006 8:29 AM
To: Mull, Donna, EMNRD
Cc:
Subject: RE: Financial Assurance Requirement
Attachments:

Plantation has to submit a one well bond for 30-025-25962 according to Jane's list.
All of the have a blanket bond and the rest do not appear on Jane's list.

From: Mull, Donna, EMNRD
Sent: Thursday, June 22, 2006 8:13 AM
To: Phillips, Dorothy, EMNRD
Cc: Macquesten, Gail, EMNRD; Sanchez, Daniel J., EMNRD
Subject: Financial Assurance Requirement

Dorothy,

Is the Financial Assurance Requirement for these Operators OK?

Plantation Operating LLC (237788)
COG Operating LLC (229137)
Range Operating New Mexico Inc (227588)
Pogo Producing Co (17891)

I have checked the Inactive well list for each Operator.

Please let me know. Thanks and have a nice day. Donna