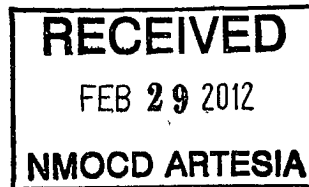


District I
1625 N French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax (575) 393-0720
District II
811 S First St., Artesia, NM 88210
Phone (575) 748-1283 Fax. (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone (505) 334-6178 Fax (505) 334-6170
District IV
1220 S St Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax. (505) 476-3462

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-101
Revised August 1, 2011



Permit

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address LRE OPERATING, LLC. 1111 BAGBY STREET, SUITE 4600, HOUSTON TX 77002		² OGRID Number 281994
⁴ Property Code 39003	³ Property Name ARCO STATE	⁵ API Number 30-015-40029
		⁶ Well No. 2

⁷ Surface Location									
UL - Lot L	Section 24	Township 17S	Range 28E	Lot Idn	Feet from 2310	N/S Line S	Feet From 990	E/W Line W	County EDDY

⁸ Pool Information	
EMPIRE; GLORIETA - YESO	96240

Additional Well Information				
⁹ Work Type N	¹⁰ Well Type O	¹¹ Cable/Rotary R	¹² Lease Type S	¹³ Ground Level Elevation 3700'
¹⁴ Multiple NO	¹⁵ Proposed Depth 5400	¹⁶ Formation GLORIETA YESO	¹⁷ Contractor UNITED	¹⁸ Spud Date
Depth to Ground water 200		Distance from nearest fresh water well 2 MILES		Distance to nearest surface water 11 MILES

¹⁹ Proposed Casing and Cement Program						
Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
	20"	14"	94#	40	Cmt. ready mix	SURFACE
	12 1/4"	8 5/8"	24#	490	300	SURFACE
	7 7/8"	5 1/2"	17#	5400	1350	SURFACE

Casing/Cement Program: Additional Comments
See attached BOP & Drilling plan

Proposed Blowout Prevention Program			
Type	Working Pressure	Test Pressure	Manufacturer
XLT 11"	5,000#	2,000#	NATIONAL BARCO

I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that the drilling pit will be constructed according to NMOC D guidelines <input type="checkbox"/> , a general permit <input type="checkbox"/> , or an (attached) alternative OCD-approved plan <input checked="" type="checkbox"/> (CLOSED LOOP)		OIL CONSERVATION DIVISION	
Printed name: BARRY W. HUNT		Approved By: <i>T.C. Sharand</i>	
Title: PERMIT AGENT FOR LRE OPERATING LLC.		Title: <i>Geologist</i>	
E-mail Address: specialtpermitting@gmail.com		Approved Date: <i>3/8/2012</i>	Expiration Date: <i>3/8/2014</i>
Date 02/28/12	Phone: (575) 361-4078	Conditions of Approval Attached	

SIGNATURE AND ACKNOWLEDGEMENT

LRE Operating, LLC

By: [Signature]

Name: Charles Adcock

Title: Co-Chief Executive Officer

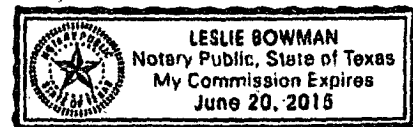
Date: 12/05/2011

Address: 1111 Bagby Street, Suite 4600, Houston, TX 77002

State of TEXAS
County of HARRIS

This instrument was acknowledged before me on December 5, 2011 by Charles Adcock,
CEO of LRE Operating, LLC acting on behalf of said limited liability corporation.

Signature of notarial officer: Leslie Bowman
My commission expires: June 20, 2015



POWER OF ATTORNEY

DESIGNATION OF AGENT

LRE Operating, LLC hereby names the following person as its agent:

Name of Agent: Barry W. Hunt d/b /a/ Special T Permitting

Agent's Address: 1403 Springs Farm Place, Carlsbad, NM 88220

Agent's Telephone Number: (575) 885-1417

GRANT OF SPECIAL AUTHORITY

LRE Operating, LLC grants its agent the authority to act for it with the respect to the following only:

1. Executing forms required to be filed with the Oil Conservation Division of the New Mexico Energy, Minerals, and Natural Resources Department.
2. Executive forms required to be filed with the Bureau of Land Management of the Department of Interior of the United States of America.

EFFECTIVE DATE

This power of attorney is effective immediately.

RELIANCE ON THIS POWER OF ATTORNEY

Any person, including the agent, may rely upon the validity of this power of attorney or a copy of it unless that person knows it has terminated or is invalid.

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
11885 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised July 16, 2010
Submit to Appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-40029	Pool Code 96210	Pool Name Empire; Gloria - Yeso
Property Code 39003	Property Name ARCO STATE	Well Number 2
OGRID No. 281994	Operator Name LRE Operating, LLC LIME ROCK RESOURCES A, L.P.	Elevation 3700'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	24	17-S	28-E		2310	SOUTH	990	WEST	EDDY

Bottom Hole Location If Different From Surface

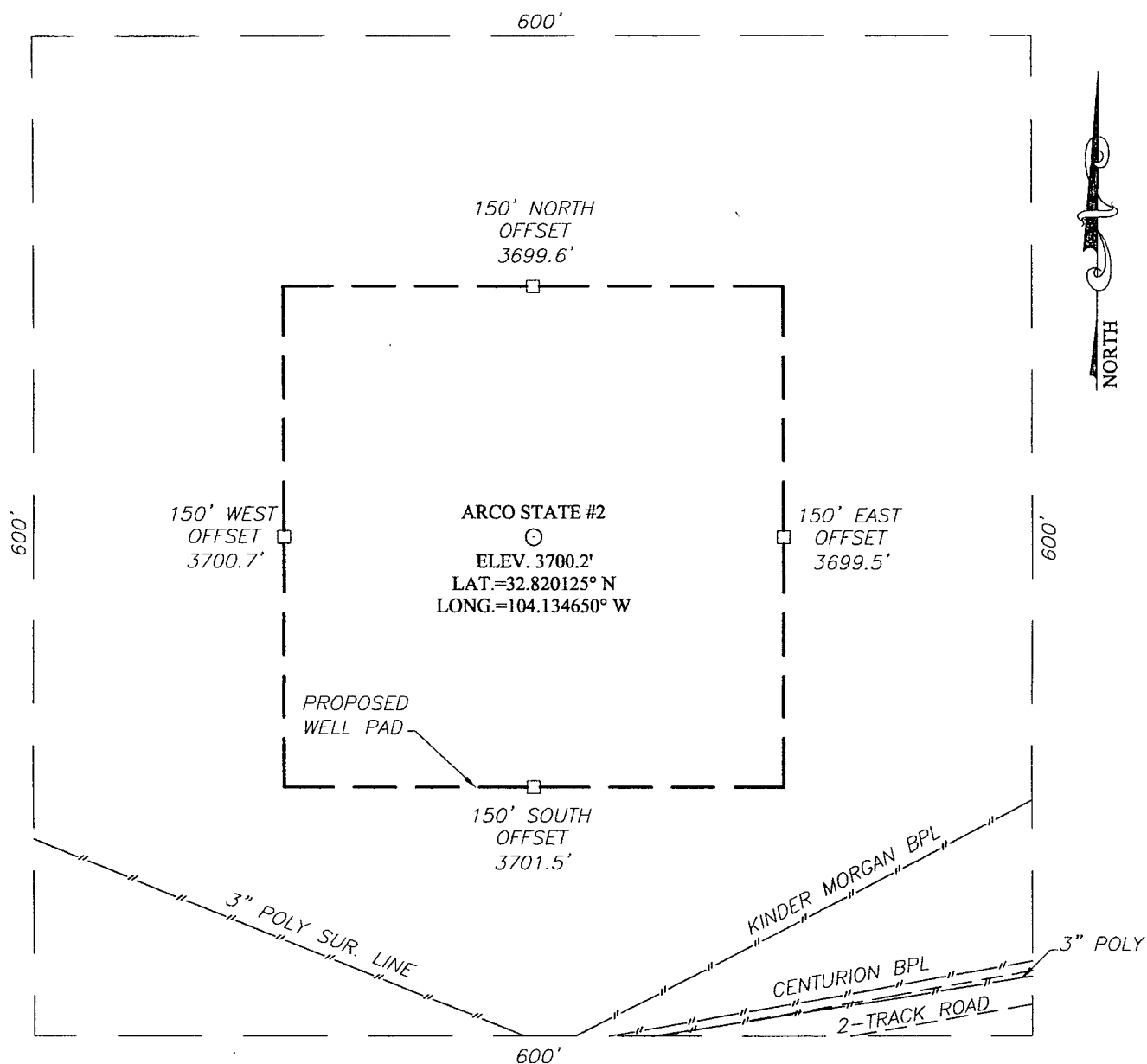
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.
------------------------------	-----------------	--------------------	-----------

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

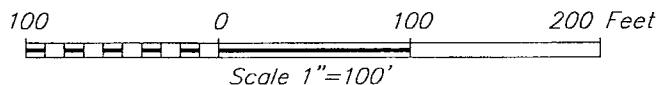
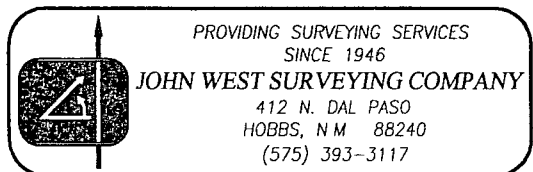
	OPERATOR CERTIFICATION <i>I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this 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.</i> Signature: Barry W. Hunt Date: 2/28/12 Printed Name: Barry W. Hunt E-mail Address: _____
	SURVEYOR CERTIFICATION <i>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.</i> AUGUST 31, 2011 Date of Survey Signature & Seal of Professional Surveyor: Certificate Number: 12641 Gary G. Eidson AR 3239 Ronald J. Eidson JWSC W.O.: 11.11.1919
	GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=662129.9 N X=561036.4 E LAT = 32.820125° N LONG. = 104.134650° W

SECTION 24, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY NEW MEXICO



DIRECTIONS TO LOCATION

GO WEST ON U.S. HWY. #82 FROM MILE MARKER #124 APPROX. 0.6 MILES. TURN RIGHT AND GO NORTH APPROX. 0.4 MILES. VEER LEFT AND GO NORTH-NORTHWEST APPROX. 0.5 MILES. THIS WELL IS APPROX. 350 FEET NORTHWEST.

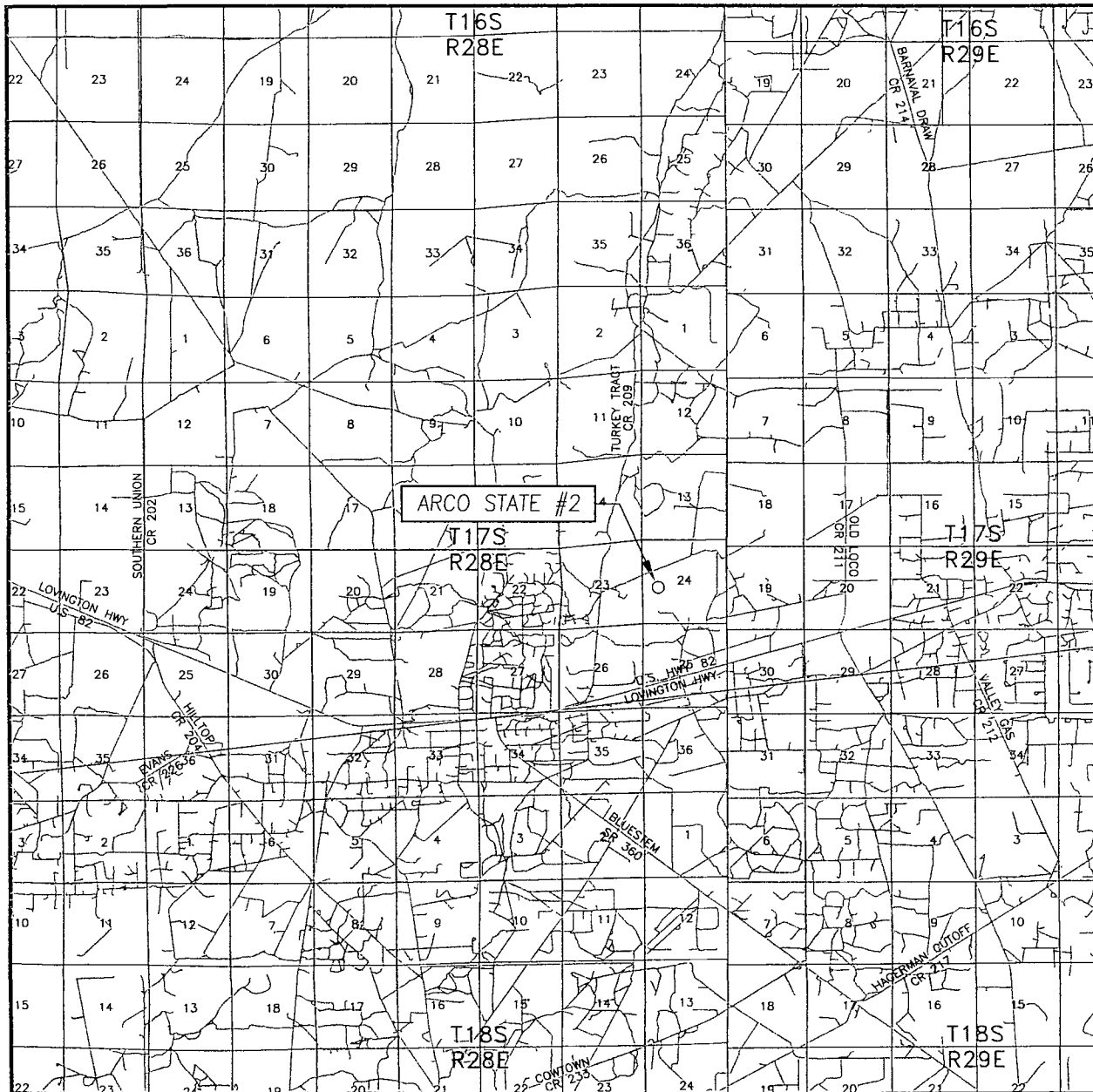


LIME ROCK RESOURCES A, L.P.

ARCO STATE #2 WELL
LOCATED 2310 FEET FROM THE SOUTH LINE
AND 990 FEET FROM THE WEST LINE OF SECTION 24,
TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

Survey Date: 08/31/11	Sheet 1 of 1 Sheets
W.O. Number. 11 11.1919	Dr By: AR
Date: 09/22/11	Rel. W.O.:
11111919	Scale: 1"=100'

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 24 TWP. 17-S RGE. 28-E

SURVEY N.M.P.M

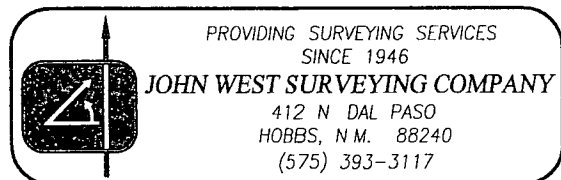
COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 2310' FSL & 990' FWL

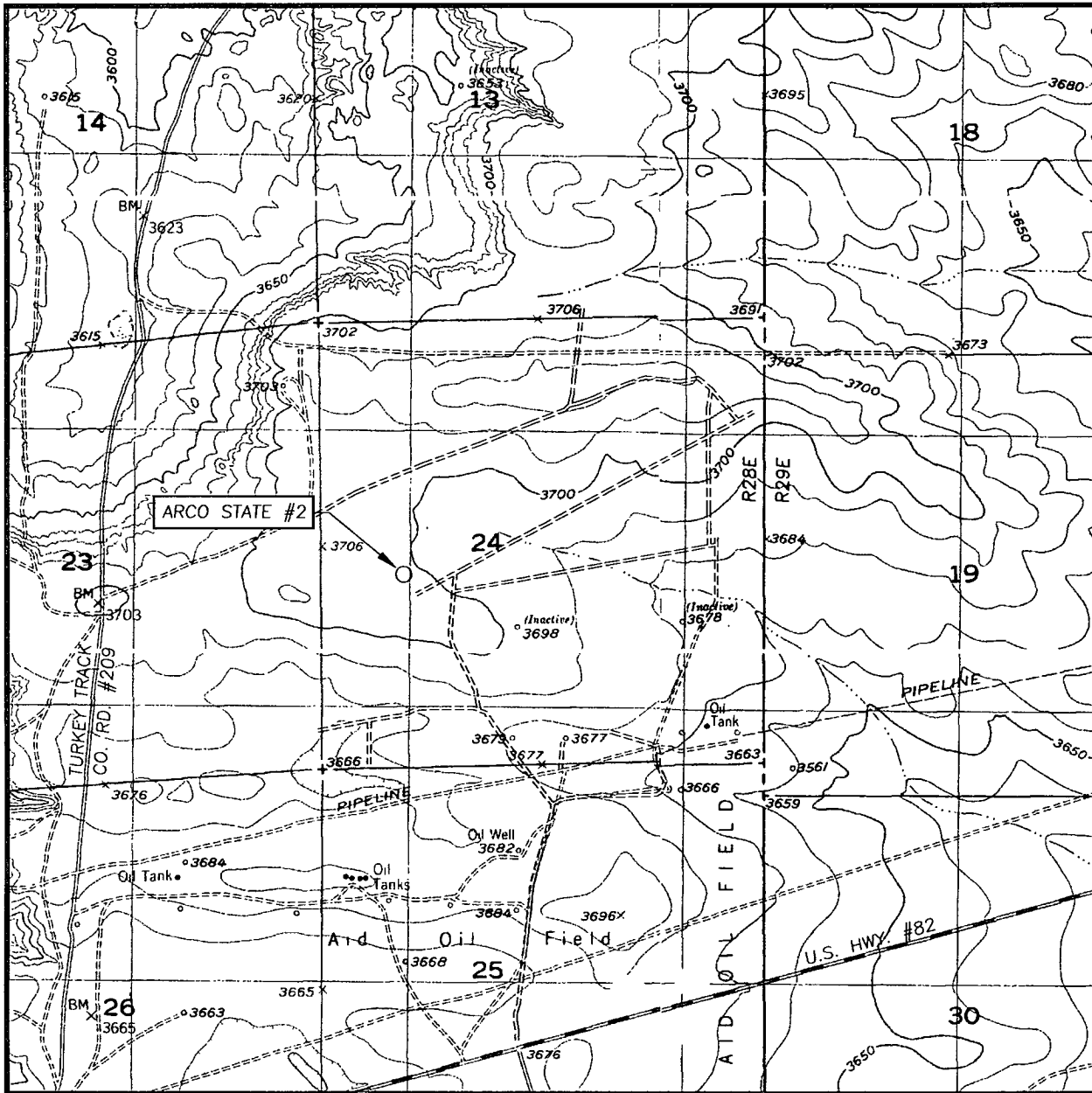
ELEVATION 3700'

OPERATOR LIME ROCK RESOURCES A, L.P.

LEASE ARCO STATE



LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
RED LAKE, N.M. - 10'
RED LAKE SE, N.M. - 10'

SEC. 24 TWP. 17-S RGE. 28-E

SURVEY _____ N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

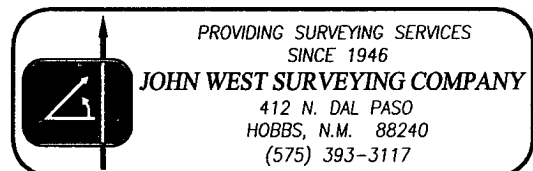
DESCRIPTION 2310' FSL & 990' FWL

ELEVATION 3700'

OPERATOR LIME ROCK RESOURCES A, L.P.

LEASE ARCO STATE

U.S.G.S. TOPOGRAPHIC MAP
RED LAKE SE N.M.



LRE OPERATING, LLC.
DRILLING PLAN

ARCO STATE #2
2310' FSL & 990' FWL
Unit "L" Section 24-17S-28E
Eddy County, NM

1. The elevation of the unprepared ground is 3,700' feet above sea level.
2. The geologic name of the surface formation is Quaternary - Alluvium.
3. A rotary rig will be utilized to drill the well to 5,400' and run casing. This equipment will then be rigged down and the well will be completed with a workover rig.
4. Proposed total depth is 5,400'.
5. Estimated tops of geologic markers:

Quaternary – Alluvium	Surface
Seven rivers	981'
Queen	1,550'
Grayburg	1,950'
Premier	2,156'
San Andres	2,259'
Glorieta	3,646'
Yeso	3,746'
Tubb	5,172'
TD	5,400'

6. Estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered:

Triassic	Water	80'-230'
Seven Rivers	Oil	981'
Queen	Oil	1550'
Grayburg	Oil	1950'
San Andres	Oil	2259'
Glorieta	Oil	3646'
Yeso	Oil	3746'
TD		5400'

7. The proposed casing program is as follows:

Surface: 12 1/4" Hole. 8-5/8" Casing, 24# J-55 ST&C, new casing set from
0' – 490'
Tension SF 2.0, Collapse SF 1.2, Burst SF 1.18.

Production: 7 7/8" Hole. 5-1/2" Casing, 17# J-55 LT&C, new casing set from 0' – 5400'

Tension SF 2.0, Collapse SF 1.2, Burst SF 1.18.

8. Casing setting depth and cementing program:

- a. 8-5/8" surface casing set at 490'. Circulate cement to surface with 300 sx Class "C" cement + 0.25 lbs/sk Cello Flake + 2% CaCl₂. 14.8 ppg, 1.35 cf/sk yield. TOC Surface. 150 % excess.
- b. 5-1/2" production casing set at 5,400'. Stage 1: Lead: 350 sx (35:65) Poz/CL C cement + 5% NaCl + 0.125 lbs/sk Cello Flake + 5 lbs/sk LCM-1 + 0.2% R-3 + 6% Gel. 12.8 ppg, Yield 1.903 cf/sk.
Stage 2: Tail: 1050 sx Class C with 0.25% R-3 + ¼ pps Cello Flake. 14.8 ppg. Yield 1.33. TOC Surface. 100 % excess.

9. Pressure Control Equipment

The blowout preventor equipment (BOP) will consist of a 2000 psi double ram type preventor, a bag-type (Hydril) preventor, and rotating head. Both units will be hydraulically operated and the ram type preventor will be equipped with blind rams on top and drill pipe rams on bottom. A 2M BOP will be installed on the 8-5/8" surface casing and utilized continuously until total depth is reached. All casing strings will be tested as per Onshore Order #2.

Pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These functional tests will be documented on the daily drillers log.

The BOP equipment will consist of the following:

- Annular preventers
- Double ram with blind rams and pipe rams
- Drilling spool, or blowout preventer with 2 side outlets (choke side shall be a 3-inch minimum diameter, kill side shall be at least 2-inch diameter)
- Kill line (2 inch minimum)
- A minimum of 2 choke line valves (2 inch minimum)
- 3 inch diameter choke line
- 2 kill line valves, one of which shall be a check valve (2 inch minimum)
- 2 chokes
- Pressure gauge on choke manifold
- Upper kelly cock valve with handle available
- Safety valve and subs to fit all drill string connections in use
- All BOPE connections subjected to well pressure shall be flanged, welded, or clamped
- Fill-up line above the uppermost preventer.

10. Mud Program:

0' – 490'	Fresh Water mud. 8.5 to 9.2 ppg Mud weight, Vis 28 to 34, pH 10, WL NC. Pump rate: 300-350 gpm. LCM as required.
490' - 5100'	Brine water. 9.9 to 10.2 ppg, Mud weight, Vis 30 to 32, pH 10 to 11.5, WL NC. Solids less than 1%. Pump rate: 350-400 gpm. Salt Gel, & MF as required. Pmp Hi Vis sweeps to control solids.
5100' – 5400'	Brine, Salt Gel and Starch. 9.9 to 10.2 ppg, Mud Weight, Vis 32 to 35, pH 10 to 11.5, WL control 15-20 cc with starch. Solids less than 1%. Pump rate: 400-450 gpm. Salt gel, acid & MF as required. Pmp Hi Vis sweeps to control solids.

11. Testing, Logging and Coring Program:

Testing program: No drillstem tests are anticipated.

Electric logging program: TD – Surface Casing: GR-DLL, GR-CND. 425' to surface: G/R/Neutron.

Coring program: None.

12. Potential Hazards:

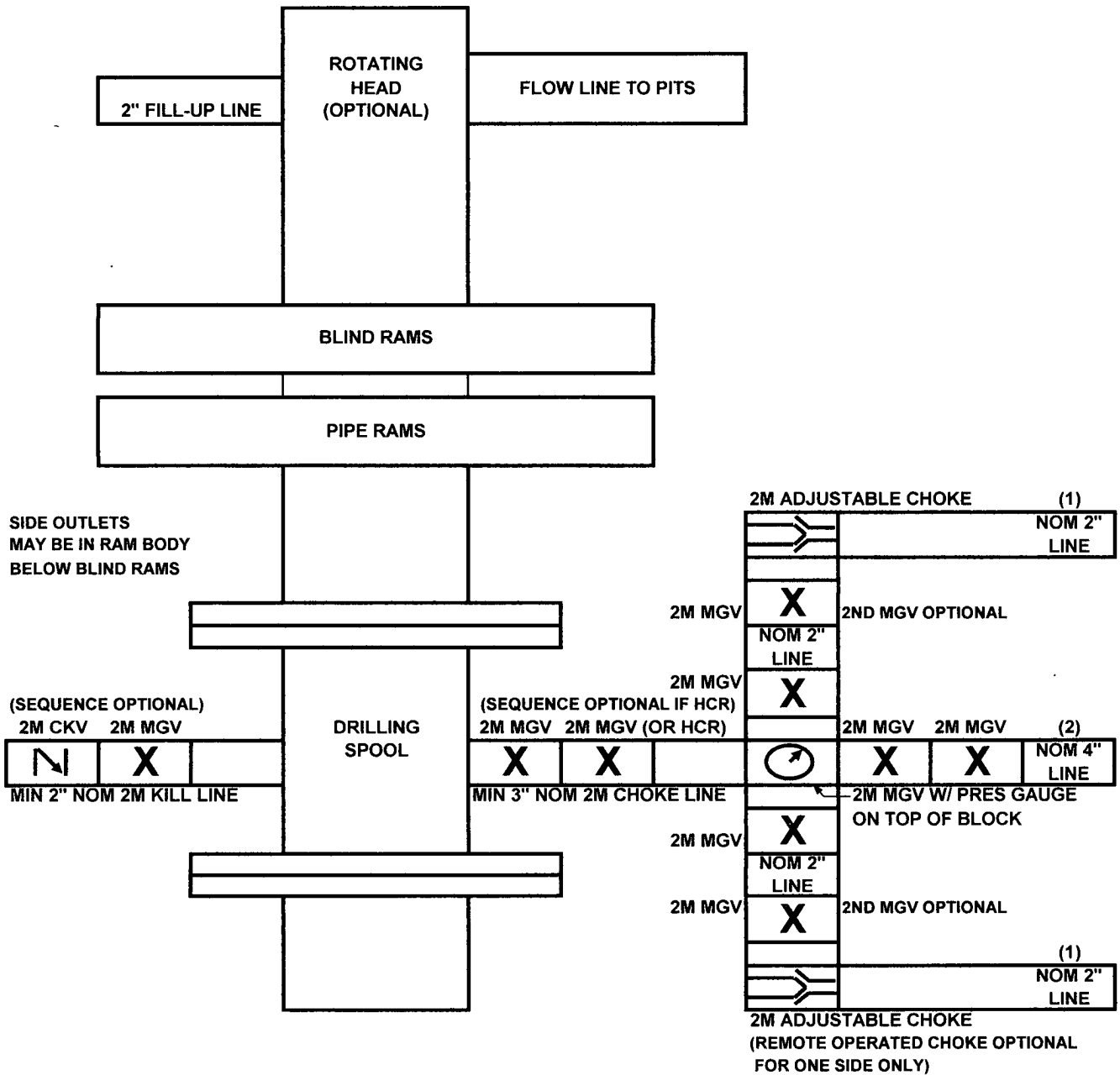
No abnormal pressures or temperatures are expected. There is no known presence of H₂S in this area. If H₂S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 2376 psi based on 0.44 x TD. The estimated BHT 105 degree F.

13. Anticipated Starting Date and Duration of Operations:

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be soon after BLM approval and as soon as a rig will be available.

Move in operations and drilling is expected to take 32 days. An additional 30 days will be needed to complete the well and to construct surface facilities.

2M BOP SCHEMATIC



- (1) Line to mud gas separator and/or pit
(2) Bleed line to pit

MGW - Manual Gate Valve

CKV - Check Valve

HCR - Hydraulically Controlled Remote Valve

HYDROGEN SULFIDE (H₂S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H₂S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
 - Detection of H₂S, and
 - Measures for protection against the gas,
 - Equipment used for protection and emergency response.

Ignition of Gas source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Lime Rock Resources personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Lime Rock Resources response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

H₂S CONTINGENCY PLAN EMERGENCY CONTACTS

Company Office –Lime Rock Resources 713-292-9510
Answering Service (During Non-Office Hours) 713-292-9555

Key Personnel

<u>Name</u>	<u>Title</u>	<u>Phone Number</u>
Richard Ghiselin.	Production Engineer	713-345-2136 Cell: 218-507-0386
Mike Barrett	Production Supervisor	575-623-8424 Cell: 505-353-2644

Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

Carlsbad

Ambulance	911
State Police	575-8885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
24 Hour	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635
National Emergency Response Center (Washington, DC)	800-424-8802

Other

Boots & Coots IWC	800-256-9688 or 281-931-8884
Cudd PressureControl	915-699-0139 or 915-563-3356
Halliburton	575-746-2757
B. J. Services	575-746-3569
Flight For Life – 4000 24 th St. Lubbock, Texas	806-743-9911
Aerocare – R3, Box 49F, Lubbock, Texas	806-747-8923
Med Flight Air Amb – 2301 Yale Blvd SE #D3, Albuq., NM	505-842-4433
S B Air Med Service – 2505 Clark Carr Loop SE, Albuq., NM	505-842-4949