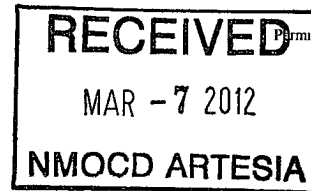


District I  
1625 N French Dr, Hobbs, NM 88240  
Phone (575) 393-6161 Fax (575) 393-0720  
District II  
811 S First St, Artesia, NM 88210  
Phone (575) 748-1283 Fax (575) 748-9720  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone (505) 334-6178 Fax (505) 334-6170  
District IV  
1220 S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



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

<sup>1</sup> Operator Name and Address LRE OPERATING, LLC. 1111 BAGBY STREET, SUITE 4600, HOUSTON TX 77002		<sup>2</sup> OGRID Number 281994
		<sup>3</sup> API Number 30-015-40030
<sup>4</sup> Property Code 39111	<sup>5</sup> Property Name SOUTHERN UNION 30 G STATE	<sup>6</sup> Well No. 1

**<sup>7</sup> Surface Location**

UL - Lot G	Section 30	Township 17	Range 28	Lot Idn	Feet from 2310	N/S Line N	Feet From 2310	E/W Line E	County EDDY
---------------	---------------	----------------	-------------	---------	-------------------	---------------	-------------------	---------------	----------------

**<sup>8</sup> Pool Information**

RED LAKE; GLORIETA - YESO NORTHEAST	96836
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**Additional Well Information**

<sup>9</sup> Work Type N	<sup>10</sup> Well Type O	<sup>11</sup> Cable/Rotary R	<sup>12</sup> Lease Type S	<sup>13</sup> Ground Level Elevation 3578.7'
<sup>14</sup> Multiple NO	<sup>15</sup> Proposed Depth 5100	<sup>16</sup> Formation GLORIETA YESO NE	<sup>17</sup> Contractor UNITED	<sup>18</sup> Spud Date
Depth to Ground water 200		Distance from nearest fresh water well 2 MILES		Distance to nearest surface water 6 MILES

**<sup>19</sup> Proposed Casing and Cement Program**

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
	20"	14"	68.7#	40	Cmt. ready mix	SURFACE
	12 1/4"	8 5/8"	24#	450	300	SURFACE
	7 7/8"	5 1/2"	17#	5100	950	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>L.C. Shapard</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: 03/07/12	Phone: (575) 361-4078	Conditions of Approval Attached	

**SIGNATURE AND ACKNOWLEDGEMENT**

LRE Operating, LLC

By: 

Name: Charles Adcock

Title: Co-Chief Executive Officer

Date: 12/05/2011

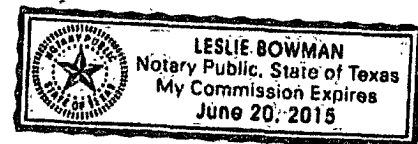
Address: 1111 Bagby Street, Suite 4600, Houston, TX 77002

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



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 & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised October 15, 2000  
Submit one copy to appropriate District Office  
☐ AMENDED REPORT

**RECEIVED**  
MAR - 7 2012  
NMOC D ARTESIA

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>30-015-4003096836</b>	Pool Code <b>Red Lake; Glorieta-Yeso, NE</b>	Pool Name
Property Code <b>35111</b>	Property Name <b>SOUTHERN UNION "30" G STATE</b>	Well Number <b>1</b>
OGRID No. <b>255338</b>	Operator Name <b>281994 LRE Operating, LLC.</b> <b>LIME ROCK RESOURCES A.L.P.</b>	Elevation <b>3578.7</b>

Surface Location

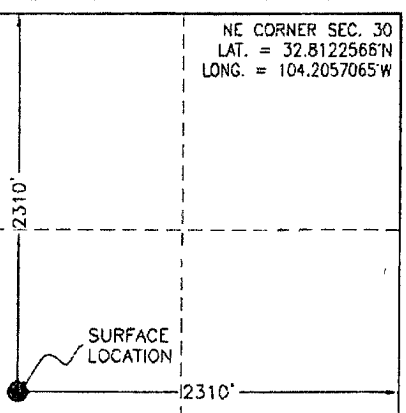
U.L. or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	30	17 S	28 E		2310	NORTH	2310	EAST	EDDY

Bottom Hole Location If Different From Surface

U.L. or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
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Dedicated Acres <b>40</b>	Joint or Infill	Consolidation Code	Order No.
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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.

NW CORNER SEC. 30 LAT. = 32.8121534°N LONG. = 104.2230975°W	NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1927 (NAD27), AND ARE IN DECIMAL DEGREE FORMAT.	NE CORNER SEC. 30 LAT. = 32.8122566°N LONG. = 104.2057065°W
		
SOUTHERN UNION "30" G STATE #1 ELEV. = 3578.7' LAT. = 32.8058616°N (NAD27) LONG. = 104.2132897°W		
SW CORNER SEC. 30 LAT. = 32.7976322°N LONG. = 104.2230120°W	SE CORNER SEC. 30 LAT. = 32.7977087°N LONG. = 104.2058501°W	

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

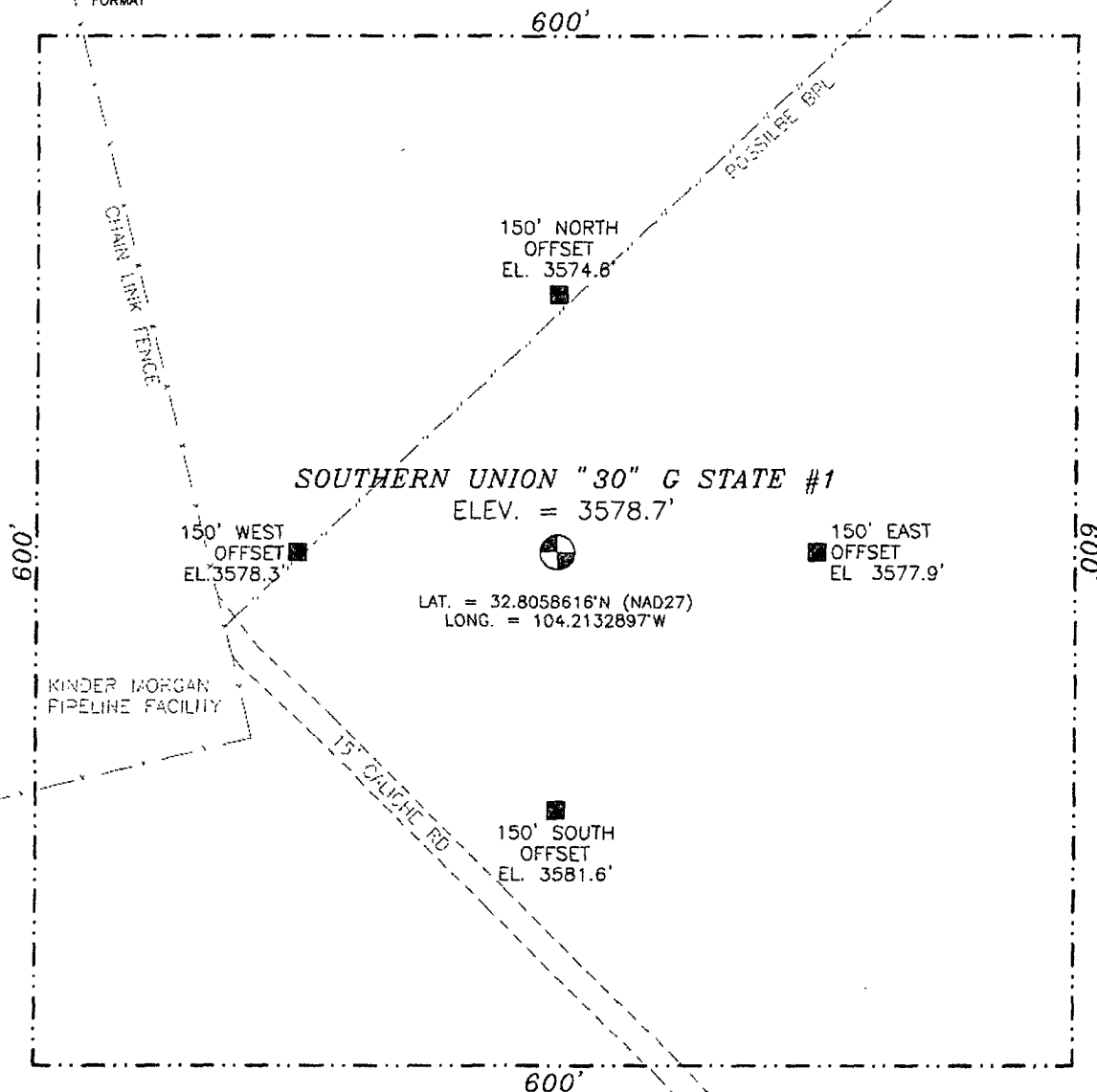
*Barry W. Hunt* 3/7/12  
Signature Date  
Printed Name

**18 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.

SEPTEMBER 2, 2011 NEW MEXICO  
Date of Survey  
*James F. Jaramillo*  
Signature and Seal of Professional Surveyor  
Certificate Number: JARILMON F. JARAMILLO, PLS 12797  
SURVEY NO. 576A

SECTION 30, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO

NOTE THE LATITUDE AND LONGITUDE COORDINATES  
ARE SHOWN USING THE NORTH AMERICAN DATUM  
OF 1927 (NAD27), AND ARE IN DECIMAL DEGREE  
FORMAT



0 10 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM U.S. HWY 82 AND PAVED CR. #206 (ILLINOIS CAMP), GO  
NORTHWEST ON HWY 82 1.16 MILES, TURN RIGHT ON CALICHE LEASE  
ROAD AND GO NORTH 0.2 MILES, TURN LEFT AND GO NORTHWEST  
470' MILE AND LOCATION IS ON THE RIGHT (NORTHEAST) 170'

*LRE Operating, LLC*

~~LIME ROCK RESOURCES A.L.P.~~

**SOUTHERN UNION "30" G STATE #1**

LOCATED 2310 FT. FROM THE NORTH LINE

AND 2310 FT. FROM THE EAST LINE OF

SECTION 30, TOWNSHIP 17 SOUTH,

RANGE 28 EAST, N.M.P.M.

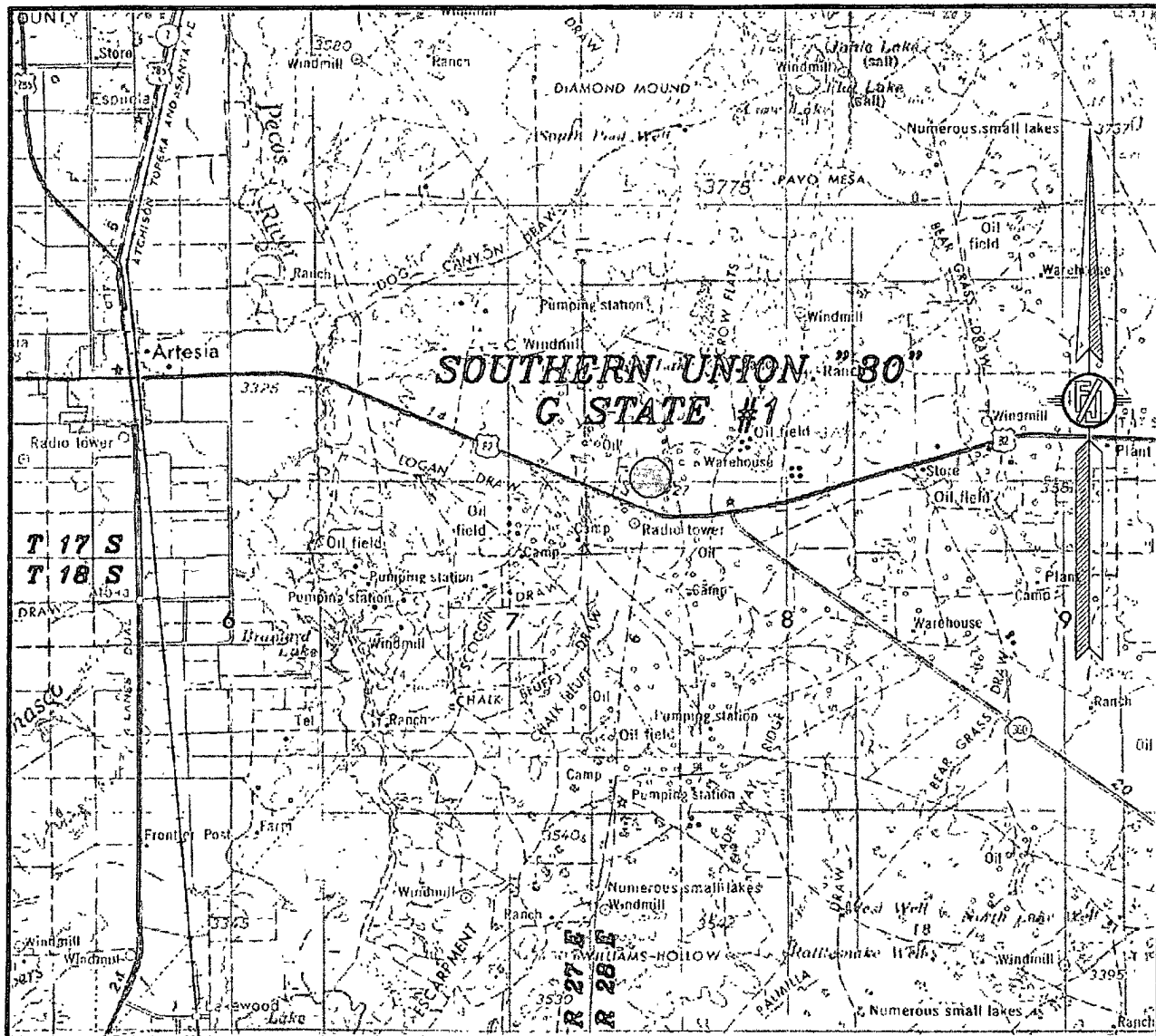
EDDY COUNTY, STATE OF NEW MEXICO

SEPTEMBER 2, 2011

SURVEY NO. 576

MADRON SURVEYING, INC. 201 SOUTH CANAL CARLSBAD, NEW MEXICO  
575, 234-3341

SECTION 30, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO  
VICINITY MAP



*LRE Operating, LLC.*  
*LIME ROCK RESOURCES A.L.P.*

NOT TO SCALE

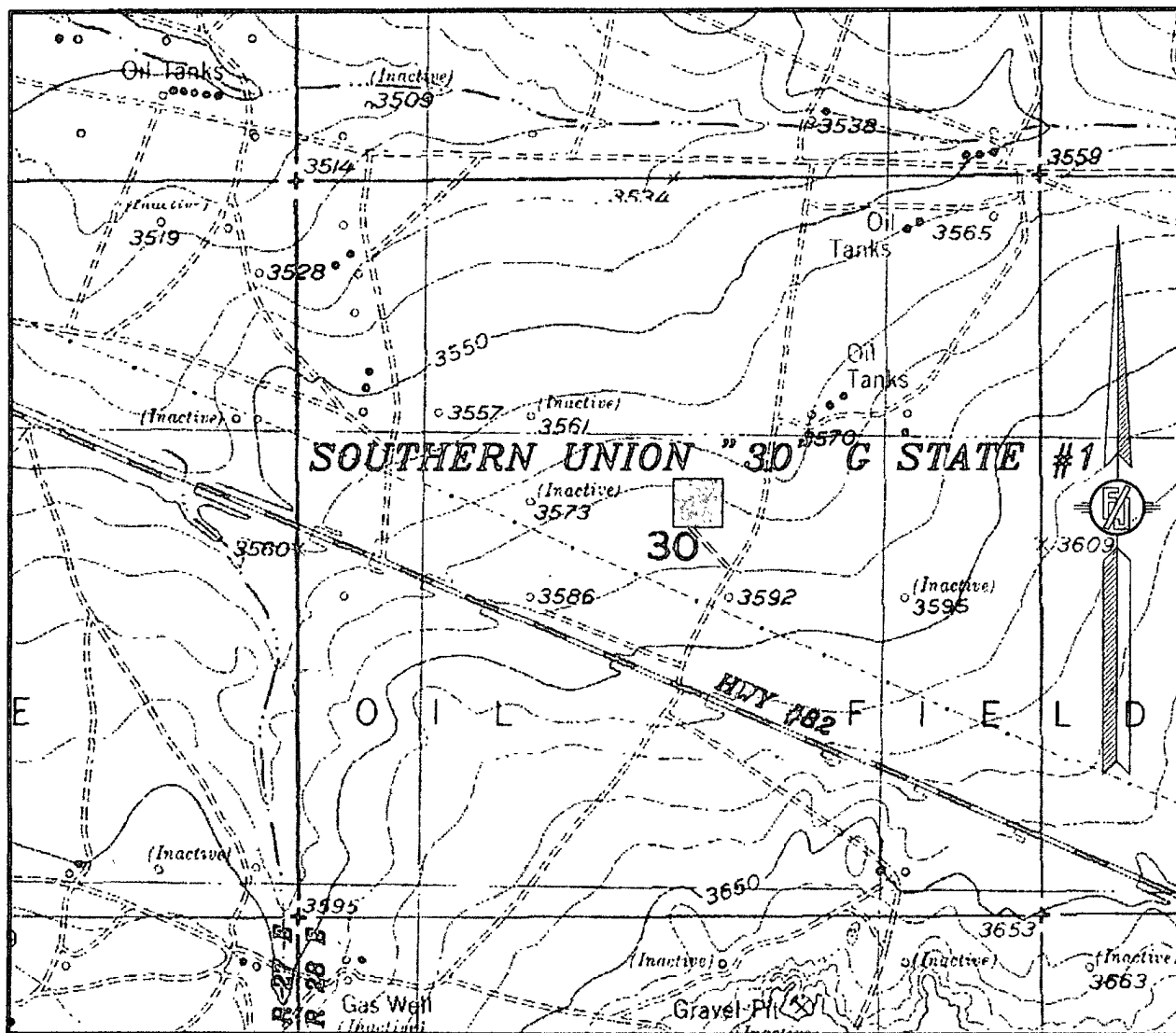
**SOUTHERN UNION "30" G STATE #1**  
LOCATED 2310 FT. FROM THE NORTH LINE  
AND 2310 FT. FROM THE EAST LINE OF  
SECTION 30, TOWNSHIP 17 SOUTH,  
RANGE 28 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO

SEPTEMBER 2, 2011

SURVEY NO. 576

MADRON SURVEYING, INC. 3111 SOUTH CANAL (575) 766-9672 CARLSBAD, NEW MEXICO

SECTION 30, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO  
LOCATION VERIFICATION MAP



CONTOUR INTERVAL:  
RED LAKE, NM

NOT TO SCALE

*LRE Operating, LLC*  
~~LIME ROCK RESOURCES A.L.P.~~  
**SOUTHERN UNION "30" G STATE #1**  
LOCATED 2310 FT. FROM THE NORTH LINE  
AND 2310 FT. FROM THE EAST LINE OF  
SECTION 30, TOWNSHIP 17 SOUTH,  
RANGE 28 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO

SEPTEMBER 2, 2011

SURVEY NO. 576

MADRON SURVEYING, INC. 101 SOUTH CANAL CARLSBAD, NEW MEXICO  
(575) 966-9672

SECTION 30, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO  
AERIAL PHOTO



NOT TO SCALE  
AERIAL PHOTO:  
GOOGLE EARTH  
USDA-AUG, 2009

~~LIME ROCK RESOURCES A.L.P.~~ *LRE Operating, LLC.*  
**SOUTHERN UNION "30" G STATE #1**  
LOCATED 2310 FT. FROM THE NORTH LINE  
AND 2310 FT. FROM THE EAST LINE OF  
SECTION 30, TOWNSHIP 17 SOUTH,  
RANGE 28 EAST, N.M.P.M.  
EDDY COUNTY, STATE OF NEW MEXICO

SURVEY NO. 576

SEPTEMBER 2, 2011

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 704-9672 CARLSBAD, NEW MEXICO

LRE OPERATING, LLC.  
DRILLING PLAN

SOUTHERN UNION 30 G STATE #1  
2310' FNL & 2310' FEL  
Unit "G" Section 30-17S-28E  
Eddy County, NM

1. The elevation of the unprepared ground is 3,578.7' 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 5,100' 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 5,100'.
5. Estimated tops of geologic markers:

Quaternary – Alluvium	Surface
Seven rivers	483'
Queen	1,029'
Grayburg	1,459'
Premier	1,723'
San Andres	1,764'
Glorieta	3,154'
Yeso	3,278'
Tubb	4,650'
TD	5,100'

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	483'
Queen	Oil	1029'
Grayburg	Oil	1459'
San Andres	Oil	1764'
Glorieta	Oil	3154'
Yeso	Oil	3278'
TD		5100'

7. The proposed casing program is as follows:

Surface: 12 ¼" Hole. 8/5/8" Casing, 24# J-55 ST&C, new casing set from  
0' – 450'  
Tension SF 2.0, Collapse SF 1.2, Burst SF 1.18.



03/06/12

Southern Union 30 G State #1

Production: 7 7/8" Hole. 5-1/2" Casing, 17# J-55 LT&C, new casing set from 0' – 5100'

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 450'. Circulate cement to surface with 300 sx Class "C" cement + 0.25 lbs/sk Cello Flake + 2% CaCl<sub>18</sub>. 14.8 ppg, 1.35 cf/sk yield. TOC Surface. 150 % excess.
- b. 5-1/2" production casing set at 5,100'. Stage 1: Lead: 300 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: 650 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.

03/06/12

Southern Union 30 G State #1

10. Mud Program:

0' – 450'	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.
450' - 4,800'	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.
4,800' – 5,100'	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. 450' to surface: G/R/Neutron.

Coring program: None.

12. Potential Hazards:

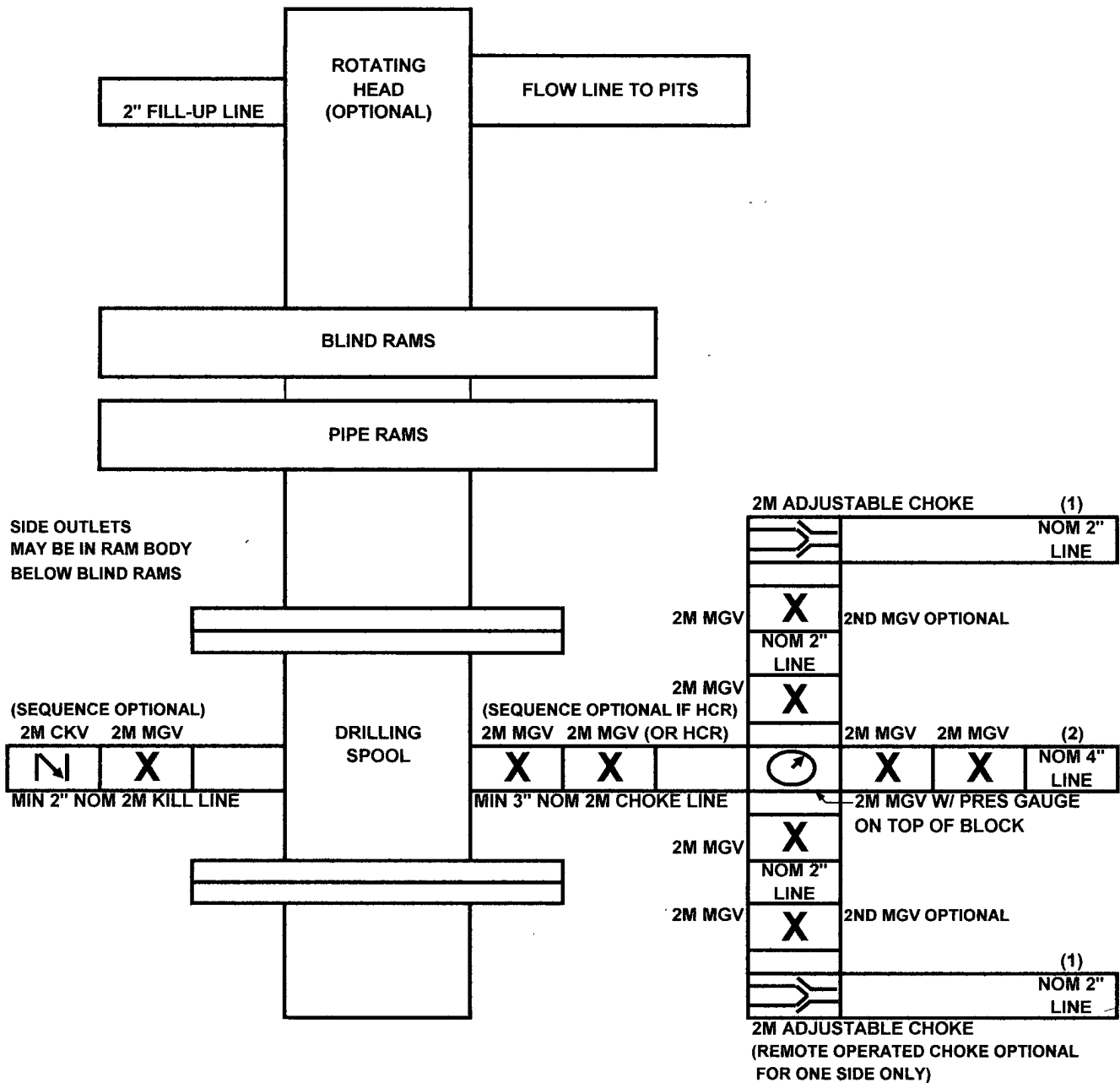
No abnormal pressures or temperatures are expected. There is no known presence of H<sub>2</sub>S in this area. If H<sub>2</sub>S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 2244 psi based on 0.44 x TD. The estimated BHT 104 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

MGV - Manual Gate Valve

CKV - Check Valve

HCR - Hydraulically Controlled Remote Valve

## HYDROGEN SULFIDE (H<sub>2</sub>S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan.

### Emergency Procedures

In the event of a release of gas containing H<sub>2</sub>S, 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 H<sub>2</sub>S 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 H<sub>2</sub>S, 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 (SO<sub>2</sub>). 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 H<sub>2</sub>S and SO<sub>2</sub>

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO <sub>2</sub>	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).

## H<sub>2</sub>S 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

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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 <sup>th</sup> St. Lubbock, Texas	806-743-9911
Aerocare – R3, Box 49F, Lubbock, Texas	806-747-8923
Med Flight Air Amb – 2301 Yale Blvd SE #D3, Albuquerque, NM	505-842-4433
S B Air Med Service – 2505 Clark Carr Loop SE, Albuquerque, NM	505-842-4949

**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.