

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 **NM OIL CONSERVATION** Form C-101
Energy Minerals and Natural Resources ARTESIA DISTRICT Revised July 18, 2013
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

DEC 31 2018

☐ AMENDED Report

RECEIVED

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

* Operator Name and Address Lime Rock Resources II-A, L P 1111 Bagby Street, Suite 4600 Houston, Texas 77002		* OGRID Number 277558
* Property Code 323060		* API Number 30-015- 45568
* Property Name Kaiser 18		* Well No 1H

7 Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
F	18	18S	27E		1400	N	1725	W	Eddy

8 Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
E	13	18S	26E		1820	N	100	W	Eddy

9 Pool Information

Red Lake; Glorieta-Yeso	51120
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Additional Well Information

* Work Type N	** Well Type O	*** Cable/Rotary R	**** Lease Type P	***** Ground Level Elevation 3288.7
** Multiple N	*** Proposed Depth 9000' MD / 2950' TVD	**** Formation Yeso	***** Contractor Trinidad Drilling	***** Spud Date After 2/1/2019
Depth to Ground Water: 80 Ft.		Distance from nearest fresh water well: 0.38 Miles		Distance from nearest surface water: 0.63 Miles

☒ We will be using a closed-loop system in lieu of lined pits

19 Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/lb	Setting Depth	Sacks of Cement	Estimated TOC
Conductor	26"	20"	91.5	80	80	Surface
Surface	12 25"	9-5/8"	36	1230	600	Surface
Production	8 3/4"	5-1/2"	17	9000	2600	Surface

Casing/Cement Program: Additional Comments

Artesian Aquifer Porosity 1160'-1170'

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
XLT 11"	5000	2000	National Varco

I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
 I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC 0, if applicable. ☒

Signature: *Eric P. McClusky*

Printed Name: Eric McClusky

Title: Operations Engineer

E-mail Address: emcclusky@limerockresources.com

Date: 12/21/2018

Phone: 713-360-5714

OIL CONSERVATION DIVISION

Approved By:

Raymond W. Dodson

Title: *Geology*

Approved Date: 12-31-18

Expiration Date: 12-31-20

Conditions of Approval Attached

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

NM OIL CONSERVATION
ARTESIA DISTRICT
DEC 31 2018
RECEIVED

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-45568	² Pool Code 51120	³ Pool Name Red Lake; Gloriera - Yero
⁴ Property Code 323060	⁵ Property Name KAISER 18	⁶ Well Number 1H
⁷ OGRID No. 277558	⁸ Operator Name LIME ROCK RESOURCES II-A, L.P.	⁹ Elevation 3288.7

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	18	18S	27E		1400	NORTH	1725	WEST	EDDY

¹¹ 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
E	13	18S	26E		1820	NORTH	100	WEST	EDDY

¹² Dedicated Acres 2.00	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ 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.

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE.

"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 at 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.

Signature: *Eric P. McElusky* Date: *12/21/18*

Printed Name: *Eric McElusky*

E-mail Address: *emcelsky@limerockresources.com*

"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.

DECEMBER 19, 2018

Date of Survey: *12/19/18*

Signature: *Simon F. Jarman*

Certification Number: *12797*

Survey No. 6786

RWP 12/31/18

NM OIL CONSERVATION

ARTESIA DISTRICT

DEC 8 1 2018

Intent ☐ As Drilled ☐

API #

RECEIVED

Operator Name: LIME ROCK RESOURCES II-A, L.P.	Property Name: KAISER 18	Well Number 1H
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Kick Off Point (KOP)

UL F	Section 18	Township 18S	Range 27E	Lot	Feet 1400	From N/S NORTH	Feet 1725	From E/W WEST	County EDDY
Latitude 32.7513671					Longitude 104.3209137				NAD 83

First Take Point (FTP)

UL F	Section 18	Township 18S	Range 27E	Lot 2	Feet 1820	From N/S NORTH	Feet 1220	From E/W WEST	County EDDY
Latitude 32.7502367					Longitude 104.3225722				NAD 83

Last Take Point (LTP)

UL E	Section 13	Township 18S	Range 26E	Lot	Feet 1820	From N/S NORTH	Feet 100	From E/W WEST	County EDDY
Latitude 32.7501564					Longitude 104.3436211				NAD 83

Is this well the defining well for the Horizontal Spacing Unit? ☐

Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #	Operator Name:	Property Name:	Well Number

KZ 06/29/2018

SECTION 18, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE

KAISER 18 1H

ELEV. = 3288.7'

2.150± ACRES

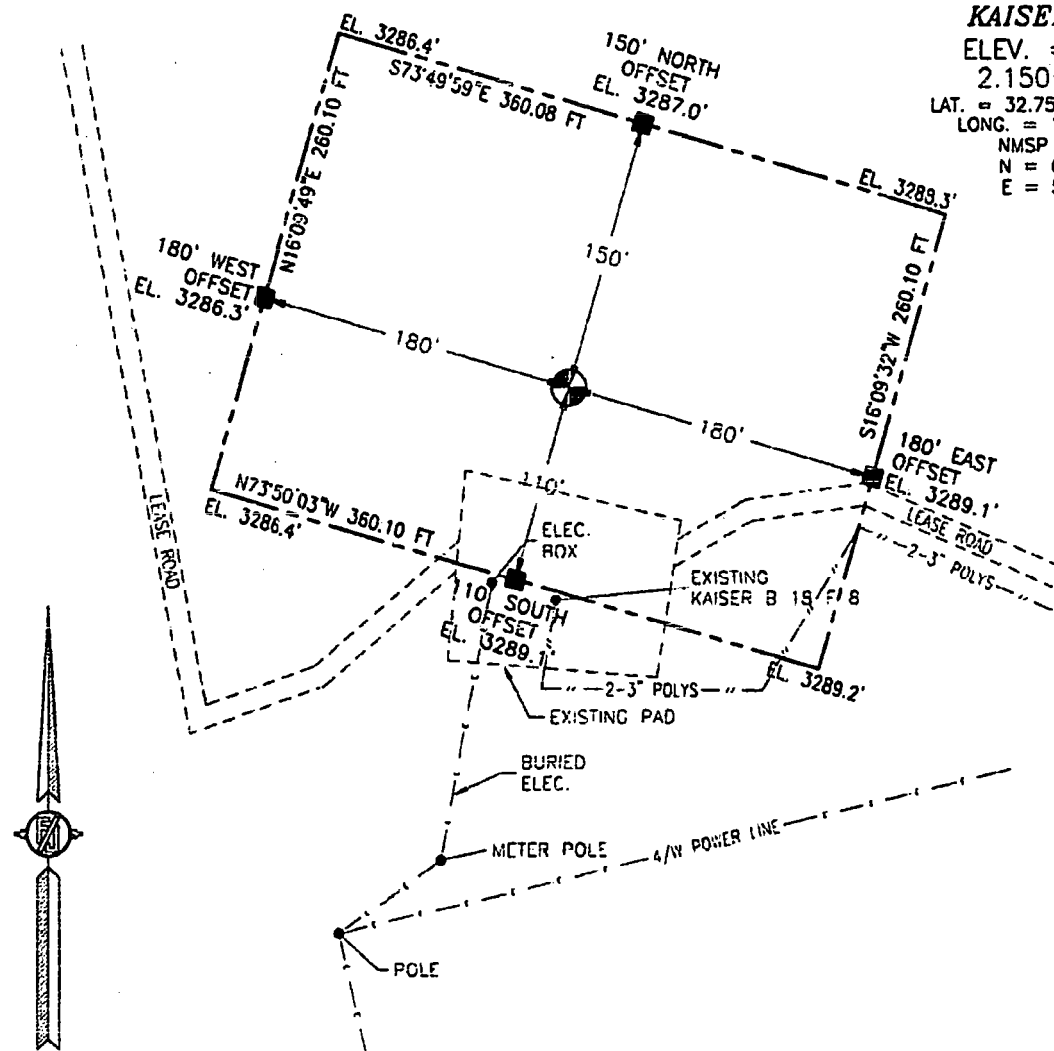
LAT. = 32.7513671°N (NAD83)

LONG. = 104.3209137°W

NMSP EAST (FT)

N = 637079.40

E = 545155.71



0 10 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM CR 44 (FANNING) AND CR 39 (FOUR DINKUS) AND CALICHE ROAD GO EAST ON CALICHE ROAD 1.0 MILE, TURN RIGHT AND GO SOUTH 0.35 OF A MILE, TURN LEFT AND GO EAST 0.3 OF A MILE, BEND LEFT AND GO NORTHEAST 0.3 OF A MILE, TURN RIGHT AND GO SOUTH 431' AND SOUTHWEST PAD CORNER IS ON THE LEFT 32'.

LIME ROCK RESOURCES II-A, L.P.
KAISER 18 1H
LOCATED 1400 FT. FROM THE NORTH LINE
AND 1725 FT. FROM THE WEST LINE OF
SECTION 18, TOWNSHIP 18 SOUTH,
RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

DECEMBER 19, 2018

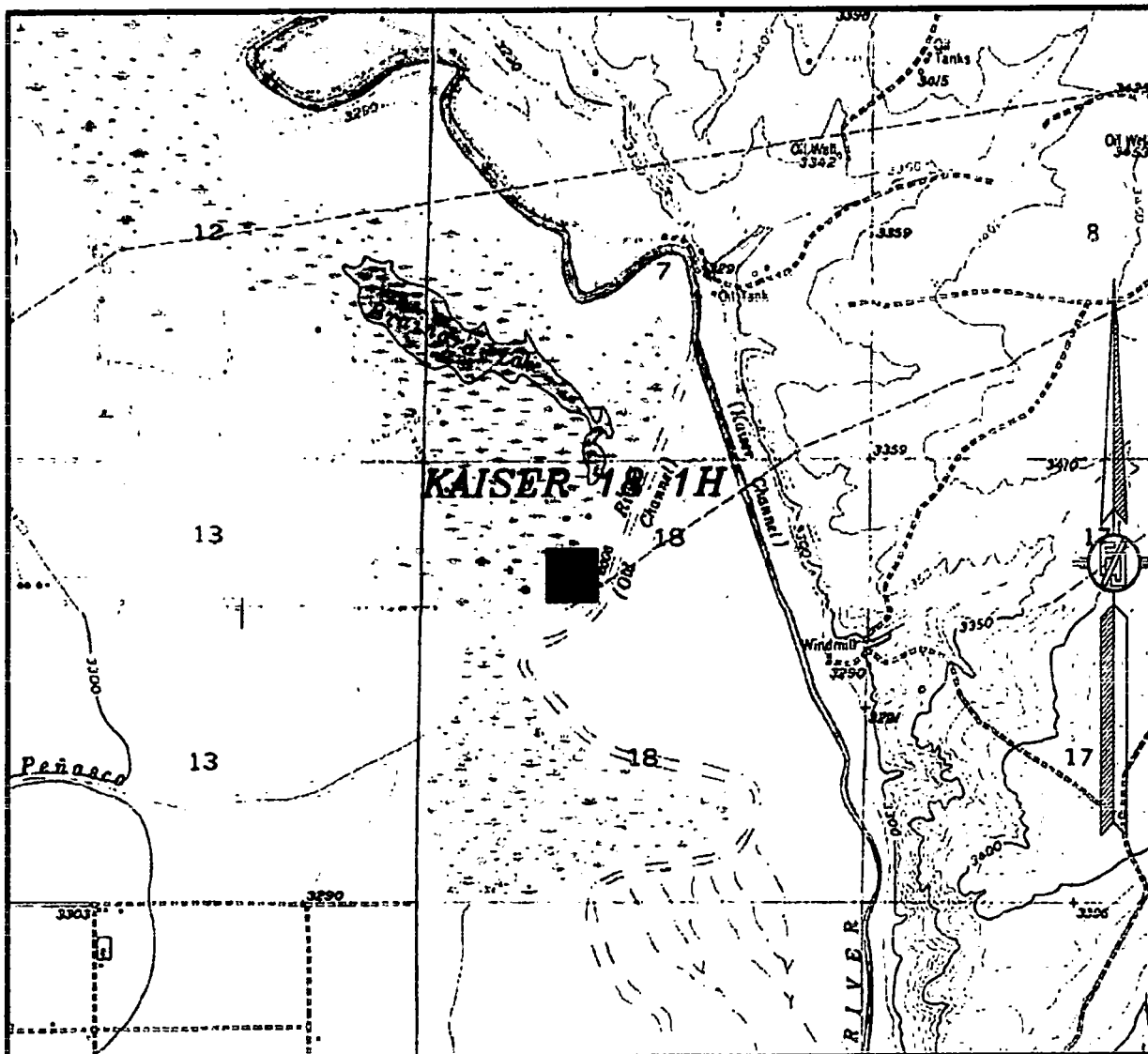
SURVEY NO. 6786

MADRON SURVEYING, INC. 301 SOUTH CANAL

(575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 18, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
SPRING LAKE

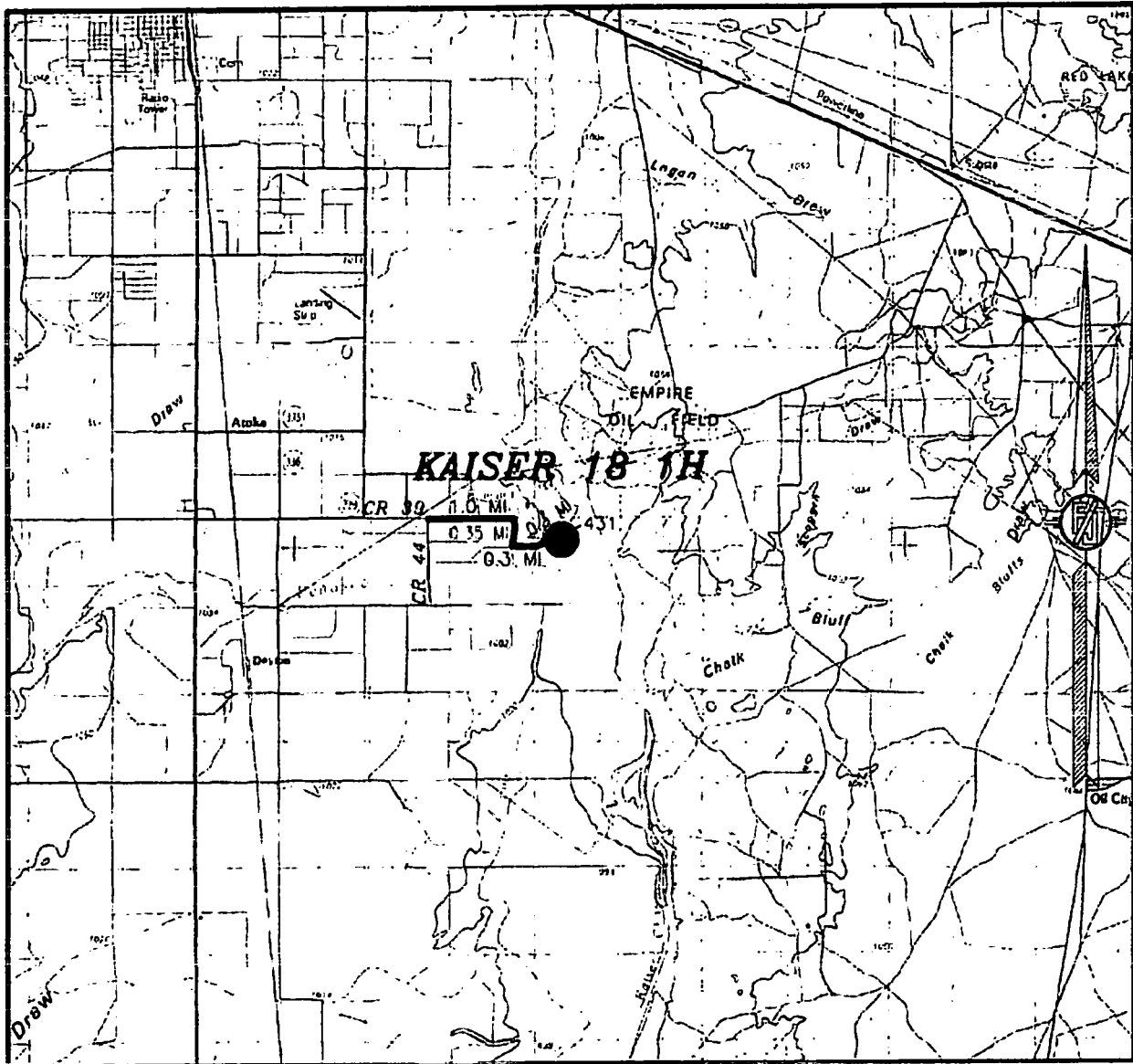
NOT TO SCALE

LIME ROCK RESOURCES II-A, L.P.
KAISER 18 1H
LOCATED 1400 FT. FROM THE NORTH LINE
AND 1725 FT. FROM THE WEST LINE OF
SECTION 18, TOWNSHIP 18 SOUTH,
RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

DECEMBER 19, 2018

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO SURVEY NO. 6786

SECTION 18, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

LIME ROCK RESOURCES II-A, L.P.
KAISER 18 1H

LOCATED 1400 FT. FROM THE NORTH LINE
AND 1725 FT. FROM THE WEST LINE OF
SECTION 18, TOWNSHIP 18 SOUTH,
RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

DIRECTIONS TO LOCATION

FROM CR 44 (FANNING) AND CR 39 (FOUR DINKUS) AND CALICHE ROAD GO EAST ON CALICHE ROAD 1.0 MILE, TURN RIGHT AND GO SOUTH 0.35 OF A MILE, TURN LEFT AND GO EAST 0.3 OF A MILE, BEND LEFT AND GO NORTHEAST 0.3 OF A MILE, TURN RIGHT AND GO SOUTH 431' AND SOUTHWEST PAD CORNER IS ON THE LEFT 32'.

DECEMBER 19, 2018

SURVEY NO. 6786

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(505) 234-3161

**SECTION 18, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO**



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
MARCH 2016

**LIME ROCK RESOURCES II-A, L.P.
KAISER 18 1H
LOCATED 1400 FT. FROM THE NORTH LINE
AND 1725 FT. FROM THE WEST LINE OF
SECTION 18, TOWNSHIP 18 SOUTH,
RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO**

DECEMBER 19, 2018

SURVEY NO. 6786

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 **CARLSBAD, NEW MEXICO**

SECTION 18, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
ACCESS AERIAL ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
MARCH 2016

LIME ROCK RESOURCES II-A, L.P.
KAISER 18 1H
LOCATED 1400 FT. FROM THE NORTH LINE
AND 1725 FT. FROM THE WEST LINE OF
SECTION 18, TOWNSHIP 18 SOUTH,
RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

DECEMBER 19, 2018

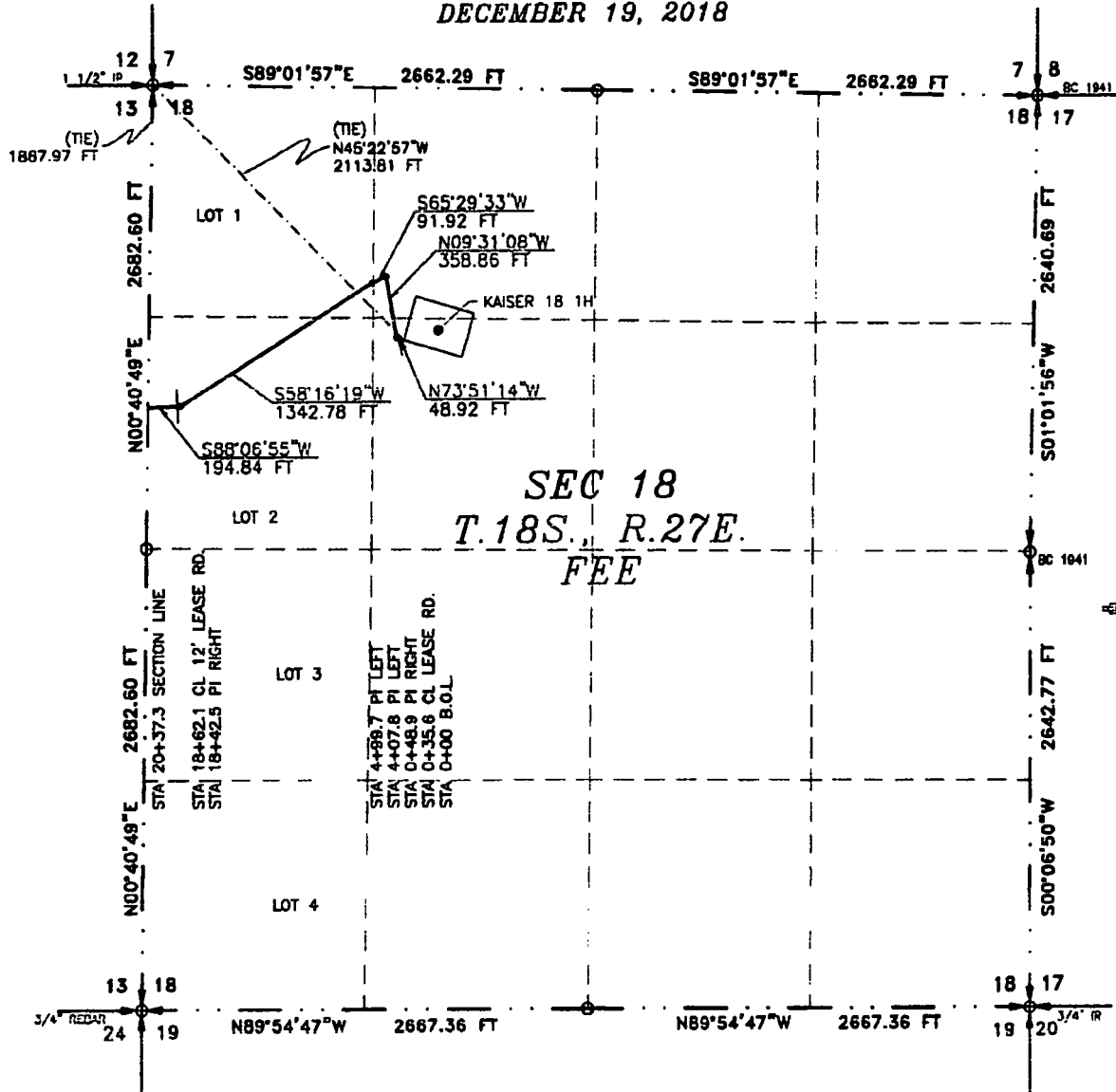
SURVEY NO. 6786

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3341

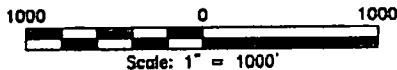
FLOWLINE PLAT

TWO 4" POLY SURFACE LINES (1-GAS & 1-PRODUCTION) FROM THE KAISER 18 1H TO THE
WOR SECTION 13 MAIN FACILITY

LIME ROCK RESOURCES II-A, L.P. CENTERLINE SURVEY OF A PIPELINE CROSSING SECTION 18, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO DECEMBER 19, 2018



SEE NEXT SHEET (2-6) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 1-6

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 19TH DAY OF DECEMBER, 2018

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6786

FLOWLINE PLAT

TWO 4" POLY SURFACE LINES (1-GAS & 1-PRODUCTION) FROM THE KAISER 18 1H TO THE
WOR SECTION 13 MAIN FACILITY

LIME ROCK RESOURCES II-A, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 18, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
DECEMBER 19, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING FEE LAND IN SECTION 18, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SE/4 NW/4 OF SAID SECTION 18, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M., WHENCE THE NORTHWEST CORNER OF SAID SECTION 18, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M. BEARS N45°22'57"W, A DISTANCE OF 2113.81 FEET;

THENCE N73°51'14"W A DISTANCE OF 48.92 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N09°31'08"W A DISTANCE OF 358.86 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S65°29'33"W A DISTANCE OF 91.92 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S58°16'19"W A DISTANCE OF 1342.78 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S88°06'55"W A DISTANCE OF 194.84 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 18, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M. BEARS N00°40'49"E, A DISTANCE OF 1867.97 FEET;

SAID STRIP OF LAND BEING 2037.32 FEET OR 123.48 RODS IN LENGTH, CONTAINING 1.403 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SE/4 NW/4	161.50 L.F.	9.79 RODS	0.111 ACRES
NE/4 NW/4	329.53 L.F.	19.97 RODS	0.227 ACRES
LOT 1	387.04 L.F.	23.48 RODS	0.267 ACRES
LOT 2	1159.25 L.F.	70.26 RODS	0.798 ACRES

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12787, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS 19 DAY OF DECEMBER 2018

[Signature]
FILIMON F. JARAMILLO, S. 12787
PROFESSIONAL SURVEYOR

MADRON SURVEYING, INC
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 2-6

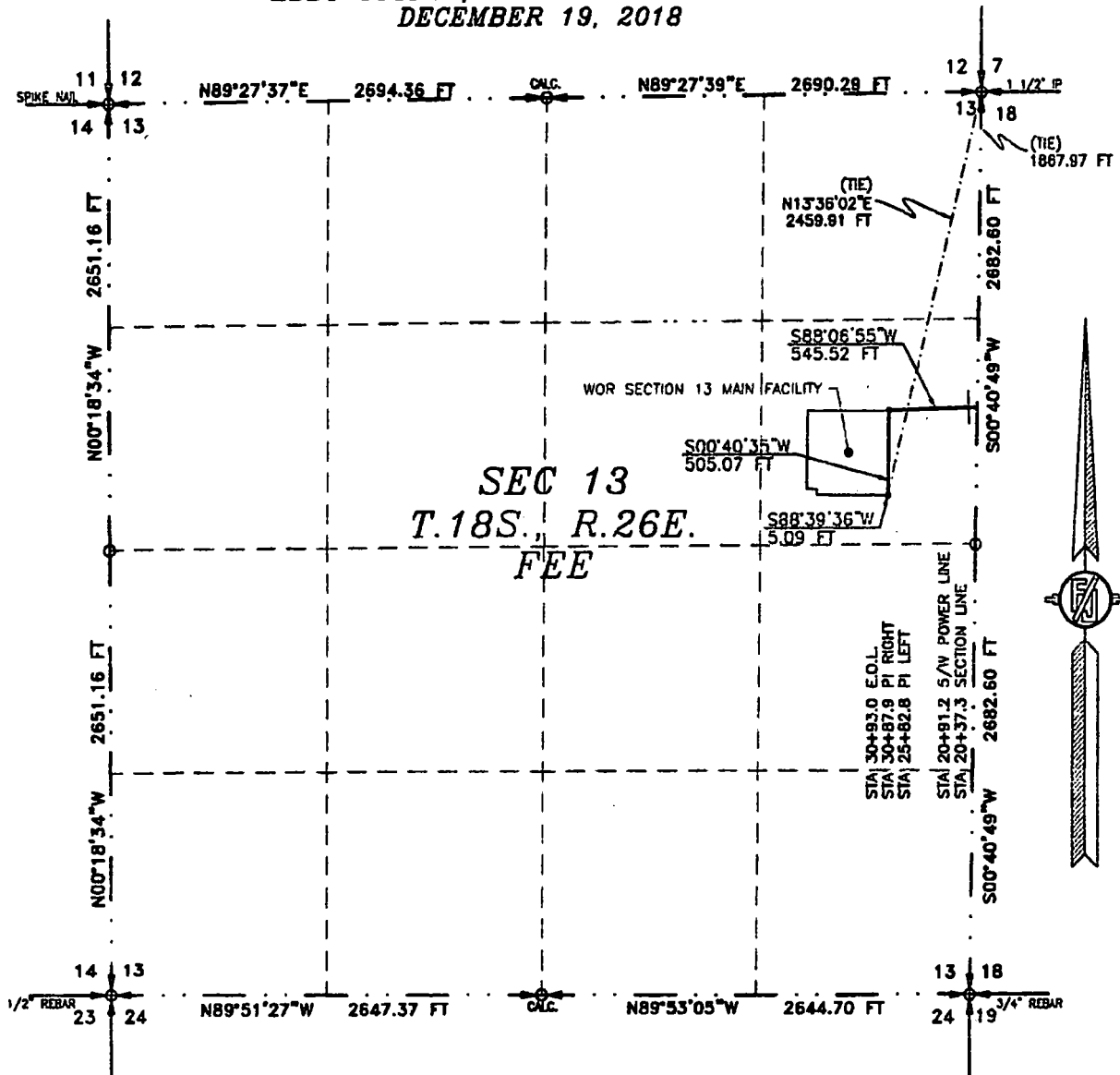
MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEY NO. 6786

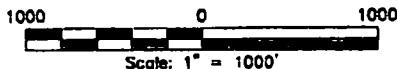
FLOWLINE PLAT

TWO 4" POLY SURFACE LINES (1-GAS & 1-PRODUCTION) FROM THE KAISER 18 1H TO THE
WOR SECTION 13 MAIN FACILITY

LIME ROCK RESOURCES II-A, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 13, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
DECEMBER 19, 2018



SEE NEXT SHEET (4-6) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 3-6

MADRON SURVEYING, INC.

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12787, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 19TH DAY OF DECEMBER 2018

(Signature of Filmon F. Jaramillo)
FILMON F. JARAMILLO, SLS. 12787
NEW MEXICO PROFESSIONAL SURVEYOR

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6786

CARLSBAD, NEW MEXICO

FLOWLINE PLAT

TWO 4" POLY SURFACE LINES (1-GAS & 1-PRODUCTION) FROM THE KAISER 18 1H TO THE
WOR SECTION 13 MAIN FACILITY

**LIME ROCK RESOURCES II-A, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 13, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
DECEMBER 19, 2018**

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING FEE LAND IN SECTION 13, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SE/4 NE/4 OF SAID SECTION 13, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M., WHENCE THE NORTHEAST CORNER OF SAID SECTION 13, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M. BEARS N00°40'49"E, A DISTANCE OF 1867.97 FEET;

THENCE S88°08'55"W A DISTANCE OF 545.52 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S00°40'35"W A DISTANCE OF 505.07 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE S88°39'36"W A DISTANCE OF 5.09 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHEAST CORNER OF SAID SECTION 13, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M. BEARS N13°36'02"E, A DISTANCE OF 2459.91 FEET;

SAID STRIP OF LAND BEING 1055.68 FEET OR 63.98 RODS IN LENGTH, CONTAINING 0.727 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SE/4 NE/4 1055.68 L.F. 63.98 RODS 0.727 ACRES

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF THIS CERTIFICATE IS EXECUTED AT CARLSBAD,
NEW MEXICO, THIS 22 DAY OF DECEMBER 2018

[Signature]
FILIMON F. JARAMILLO, PLS. 12797
301 SOUTH CANAL
(575) 234-3341

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 6786

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

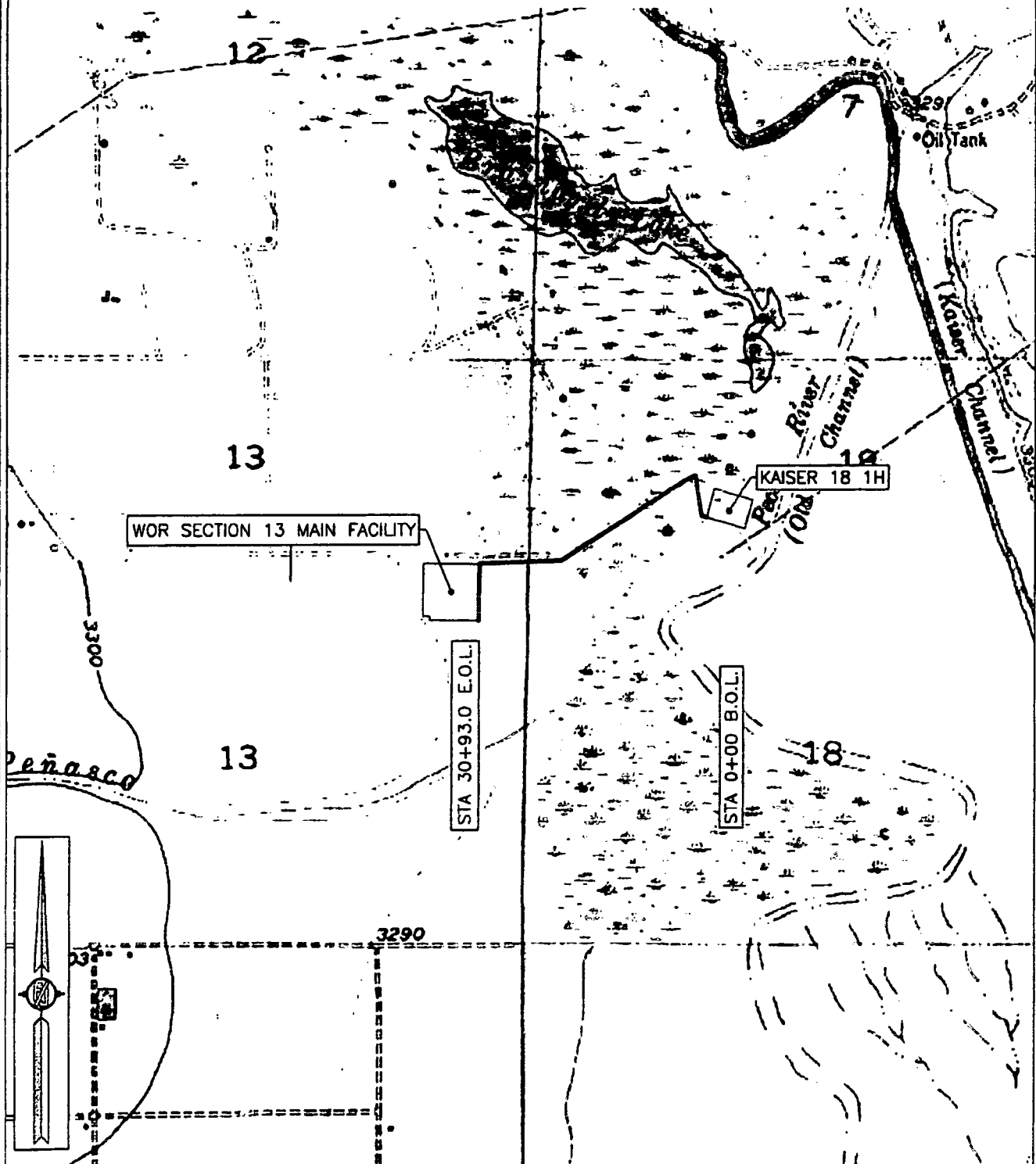
SHEET: 4-6

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

FLOWLINE PLAT

TWO 4" POLY SURFACE LINES (1-GAS & 1-PRODUCTION) FROM THE KAISER 18 1H TO THE
WOR SECTION 13 MAIN FACILITY

LIME ROCK RESOURCES II-A, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 18, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M.
SECTION 13, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
DECEMBER 19, 2018



SHEET: 5-6

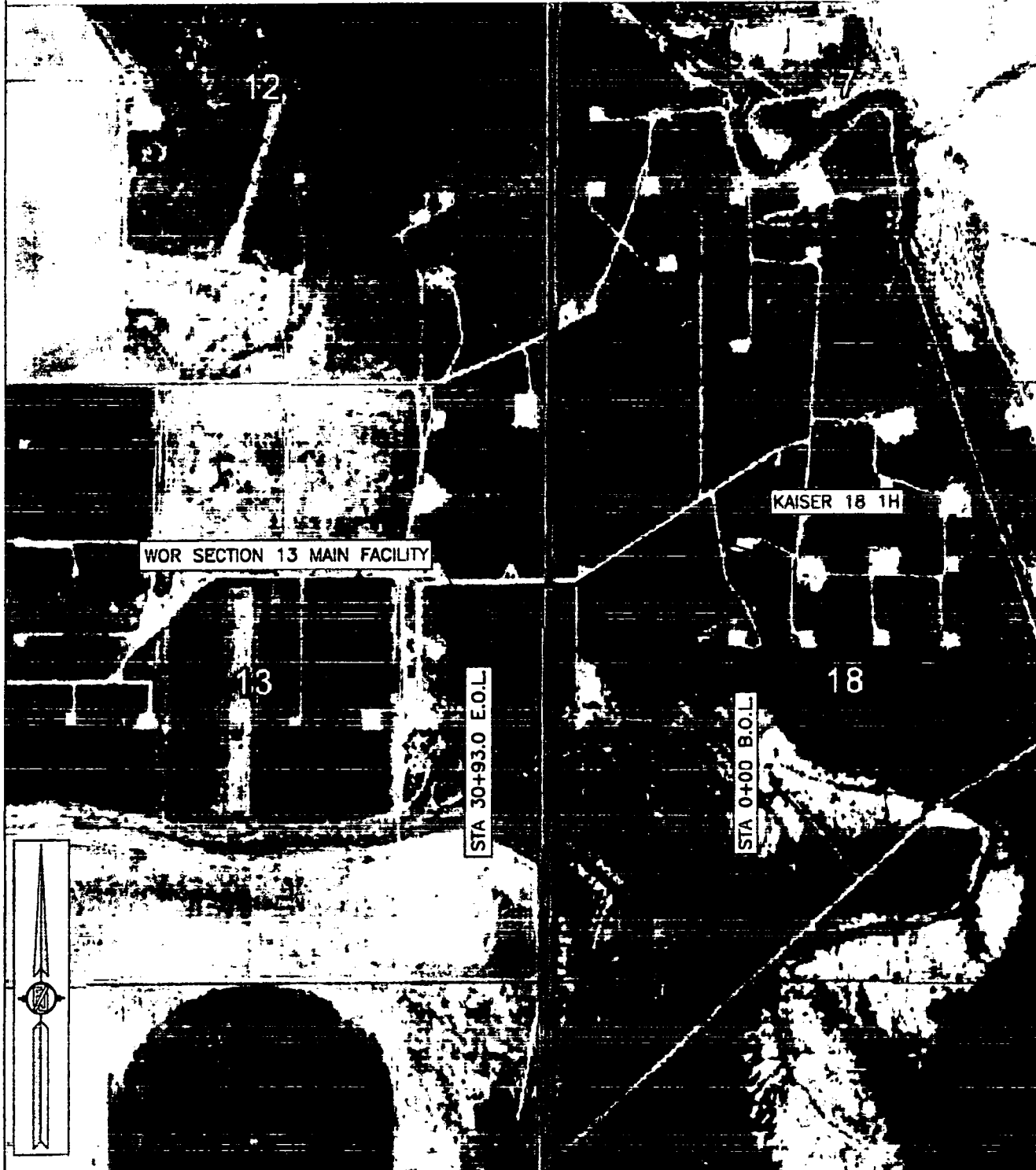
MADRON SURVEYING, INC. 301 SOUTH CANAL (S/75) 234-SJ41 CARLSBAD, NEW MEXICO

SURVEY NO. 6786

FLOWLINE PLAT

**TWO 4" POLY SURFACE LINES (1-GAS & 1-PRODUCTION) FROM THE KAISER 18 1H TO THE
WOR SECTION 13 MAIN FACILITY**

**LIME ROCK RESOURCES II-A, L.P.
CENTERLINE SURVEY OF A PIPELINE CROSSING
SECTION 18, TOWNSHIP 18 SOUTH, RANGE 27 EAST, N.M.P.M.
SECTION 13, TOWNSHIP 18 SOUTH, RANGE 26 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
DECEMBER 19, 2018**



SHEET: 6-6

SURVEY NO. 6786

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

**Lime Rock Resources II-A, L.P.
Drilling Plan**

**Kaiser 18 1H
1400' FNL 1725' FWL
(F) 18-18S-27E
Eddy County, NM**

1. The elevation of the unprepared ground is 3288.7 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 9000' MD/2950' TVD and run casing. This equipment will be down and the well will be completed with a workover rig.
4. Well will be drilled to a total proposed depth of 9000' MD/2950' TVD. The KOP for horizontal drilling will be at 1932'. See directional plan for details.

5. Estimated tops of geologic markers:

	MD	TVD
Quaternary – Alluvium	Surface	Surface
Yates	NA	NA
7 Rivers	NA	NA
Queen	400	400
Grayburg	637	637
Premier	906	906
San Andres	946	946
Glorieta	2406	2305
Yeso	2496	2395
Tubb	NA	NA
TD	9000	2950

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

	MD	TVD
Yates	NA	NA
7 Rivers	NA	NA
Queen	400	400
Grayburg	637	637
Premier	906	906
San Andres	946	946
Glorieta	2406	2305
Yeso	2496	2395
Tubb	NA	NA
TD	9000	2950

7. Proposed Casing and Cement program is as follows:

Type	Hole	Casing	Wt	Grade	Thread	Depth	Sx	Density	Yield	Components
Conductor	26"	20"	91.5	B	Welded	80	80			Ready Mix
Surface	12.25"	9-5/8"	36	J-55	ST&C	1230	600	14.8	1.35	Cl C Cmt + 0.25 lbs/sk Cello Flake + 2% CaCl ₂
Intermediate										
Production	8 3/4"	5-1/2"	17	L-80	LT&C	9000	600	12.8	1.903	(35:65) Poz/Cl C Cmt + 5% NaCl + 0.25 lbs/sk Cello Flake + 5 lbs/sk LCM-1 + 0.2% R-3 + 6% Gel
							2000	14.8	1.33	Class C w/ 0.8% R-3 and 1/4 pps cello flake

B. Proposed Mud Program is as follows

Depth	0-1230	1230-8850	8850-9000
Mud Type	Fresh Water Mud	Brine, Salt Gel, & Starch	Brine, Salt Gel, & Starch
Properties			
MW	8.4-9.2	9.8-10.1	9.9-10.1
pH	9.0-10.5	10.0-12.0	10.0-12.0
WL	NC	NC	20-30
Vis	28-34	28-29	32-34
MC	NC	NC	<2
Solids	NC	<2%	<3%
Pump Rate	300-500 gpm	375-425 gpm	400-425 gpm
Special		Use Pymers sticks and MF-55 Hi-Vis Sweeps as necessary	Hi Vis Sweeps, add acid and starch as req. Raise Vis to 35 for log.

9. Pressure Control Equipment: See Attached Description and diagram of Pressure Control Equipment.

10. Testing, Logging and Coring Program

Testing Program: No drill stem tests are anticipated

Electric Logging Program: SGR-DLL-CDL-CNL Quad Combo from 9000 to surf. Csg. SGR-CNL to Surf.

Coring Program: No full or sidewall cores are anticipated.

11. Potential Hazards:

No abnormal temperatures or pressures 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 1190.2 psi based on 0.44 x TD. The estimated BHT is 125 degrees F.

12. Duration of Operations:

Anticipated spud date will be soon after approval and as soon as a rig will be available. Move in operations and drilling is expected to take 15 days. An additional 14 days will be needed to complete the well and to construct surface facilities.

Lime Rock Resources

**Eddy County, NM
SEC 18 T18S R27E
Kaiser 18-1H**

Original Wellbore

Plan: Plan 1

Standard Planning Report

27 December, 2018

Planning Report

Database: EDM Server Database
Company: Lime Rock Resources
Project: Eddy County, NM
Site: SEC 18 T18S R27E
Well: Kaiser 18-1H
Wellbore: Original Wellbore
Design: Plan 1

Local Co-ordinate Reference: Well Kaiser 18-1H
TVD Reference: KB @ 3308.4usft
MD Reference: KB @ 3308.4usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Eddy County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	SEC 18 T18S R27E			
Site Position:		Northing:	637,839.89 usft	Latitude: 32° 45' 12.448 N
From:	Lat/Long	Easting:	543,939.97 usft	Longitude: 104° 19' 29.525 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.00 °

Well	Kaiser 18-1H			
Well Position	+N/-S	-740.0 usft	Northing:	637,099.88 usft
	+E/-W	1,225.0 usft	Easting:	545,164.97 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:		Ground Level: 3,287.4 usft

Wellbore	Original Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/27/2018	7.18	60.41	48,013.13968429

Design	Plan 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	266.23

Plan Survey Tool Program	Date 12/27/2018			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	9,445.0	Plan 1 (Original Wellbore)	MWD
				OWSG MWD - Standard

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,896.6	0.00	0.00	1,896.6	0.0	0.0	0.00	0.00	0.00	0.00	
2,552.5	52.47	230.00	2,464.6	-179.9	-214.4	8.00	8.00	0.00	230.00	
2,652.5	52.47	230.00	2,525.5	-230.9	-275.2	0.00	0.00	0.00	0.00	
3,164.0	89.89	267.86	2,693.0	-380.9	-715.7	10.00	7.32	7.40	52.00	
9,445.1	89.89	270.68	2,705.0	-461.3	-6,995.7	0.04	0.00	0.04	89.96	PBHL - Kaiser 18-1H

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MD Reference: KB @ 3308.4usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
Queen									
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
825.0	0.00	0.00	825.0	0.0	0.0	0.0	0.00	0.00	0.00
Grayburg									
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
Premier									
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
San Andres									
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,230.0	0.00	0.00	1,230.0	0.0	0.0	0.0	0.00	0.00	0.00
9-5/8" - Surface									
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,350.0	0.00	0.00	1,350.0	0.0	0.0	0.0	0.00	0.00	0.00
Middle San Andres									
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,896.6	0.00	0.00	1,896.6	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start 8°/100' Build									
1,900.0	0.27	230.00	1,900.0	0.0	0.0	0.0	8.00	8.00	0.00
1,960.1	5.08	230.00	1,960.0	-1.8	-2.2	2.3	8.00	8.00	0.00
Lower San Andres									
2,000.0	8.27	230.00	1,999.6	-4.8	-5.7	6.0	8.00	8.00	0.00
2,100.0	16.27	230.00	2,097.3	-18.4	-22.0	23.1	8.00	8.00	0.00
2,200.0	24.27	230.00	2,191.0	-40.7	-48.5	51.1	8.00	8.00	0.00
2,300.0	32.27	230.00	2,279.0	-71.1	-84.8	89.2	8.00	8.00	0.00
2,400.0	40.27	230.00	2,359.6	-109.1	-130.0	136.9	8.00	8.00	0.00
2,495.8	47.94	230.00	2,428.3	-151.9	-181.1	190.7	8.00	8.00	0.00
Glorietta									
2,500.0	48.27	230.00	2,431.1	-153.9	-183.5	193.2	8.00	8.00	0.00
2,552.5	52.47	230.00	2,484.6	-179.9	-214.4	225.8	8.00	8.00	0.00
Begin 52.47° Tangent									
2,600.0	52.47	230.00	2,493.5	-204.1	-243.3	256.2	0.00	0.00	0.00
2,647.4	52.47	230.00	2,522.4	-228.3	-272.1	286.5	0.00	0.00	0.00
Yeso									
2,652.5	52.47	230.00	2,525.5	-230.9	-275.2	289.8	0.00	0.00	0.00
KOP - Start 10°/100' Build									
2,700.0	55.48	234.54	2,553.4	-254.4	-305.6	321.6	10.01	6.35	9.57
2,800.0	62.30	243.10	2,605.1	-298.4	-378.8	397.6	10.00	6.82	8.55
2,900.0	69.59	250.61	2,645.9	-334.1	-462.7	483.7	10.00	7.28	7.51

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3,000.0	77.16	257.43	2,674.5	-360.3	-554.7	577.2	10.00	7.57	6.82
3,100.0	84.90	263.85	2,690.1	-376.3	-652.1	675.4	10.00	7.74	6.42
3,164.0	89.89	267.86	2,693.0	-380.9	-715.8	739.3	9.99	7.79	6.26
EOC									
3,200.0	89.89	267.87	2,693.1	-382.3	-751.8	775.3	0.04	0.00	0.04
3,300.0	89.89	267.92	2,693.3	-385.9	-851.7	875.2	0.04	0.00	0.04
3,400.0	89.89	267.96	2,693.5	-389.5	-951.6	975.2	0.04	0.00	0.04
3,500.0	89.89	268.01	2,693.7	-393.1	-1,051.6	1,075.2	0.04	0.00	0.04
3,600.0	89.89	268.05	2,693.9	-396.5	-1,151.5	1,175.1	0.04	0.00	0.04
3,700.0	89.89	268.10	2,694.1	-399.9	-1,251.5	1,275.1	0.04	0.00	0.04
3,800.0	89.89	268.14	2,694.3	-403.1	-1,351.4	1,375.0	0.04	0.00	0.04
3,900.0	89.89	268.19	2,694.5	-406.3	-1,451.4	1,474.9	0.04	0.00	0.04
4,000.0	89.89	268.23	2,694.6	-409.5	-1,551.3	1,574.9	0.04	0.00	0.04
4,100.0	89.89	268.28	2,694.8	-412.5	-1,651.3	1,674.8	0.04	0.00	0.04
4,200.0	89.89	268.32	2,695.0	-415.5	-1,751.2	1,774.8	0.04	0.00	0.04
4,274.0	89.89	268.35	2,695.2	-417.6	-1,825.2	1,848.7	0.04	0.00	0.04
FTP - 100' FEL									
4,300.0	89.89	268.37	2,695.2	-418.4	-1,851.2	1,874.7	0.04	0.00	0.04
4,400.0	89.89	268.41	2,695.4	-421.2	-1,951.1	1,974.6	0.04	0.00	0.04
4,500.0	89.89	268.46	2,695.6	-423.9	-2,051.1	2,074.5	0.04	0.00	0.04
4,600.0	89.89	268.50	2,695.8	-426.6	-2,151.1	2,174.5	0.04	0.00	0.04
4,700.0	89.89	268.55	2,696.0	-429.1	-2,251.0	2,274.4	0.04	0.00	0.04
4,800.0	89.89	268.59	2,696.2	-431.6	-2,351.0	2,374.3	0.04	0.00	0.04
4,900.0	89.89	268.64	2,696.4	-434.1	-2,451.0	2,474.2	0.04	0.00	0.04
5,000.0	89.89	268.68	2,696.6	-436.4	-2,550.9	2,574.1	0.04	0.00	0.04
5,100.0	89.89	268.73	2,696.8	-438.7	-2,650.9	2,674.0	0.04	0.00	0.04
5,200.0	89.89	268.77	2,696.9	-440.9	-2,750.9	2,773.9	0.04	0.00	0.04
5,300.0	89.89	268.82	2,697.1	-443.0	-2,850.9	2,873.8	0.04	0.00	0.04
5,400.0	89.89	268.86	2,697.3	-445.0	-2,950.8	2,973.7	0.04	0.00	0.04
5,500.0	89.89	268.91	2,697.5	-446.9	-3,050.8	3,073.6	0.04	0.00	0.04
5,600.0	89.89	268.95	2,697.7	-448.8	-3,150.8	3,173.5	0.04	0.00	0.04
5,700.0	89.89	269.00	2,697.9	-450.6	-3,250.8	3,273.4	0.04	0.00	0.04
5,800.0	89.89	269.04	2,698.1	-452.3	-3,350.8	3,373.3	0.04	0.00	0.04
5,900.0	89.89	269.09	2,698.3	-454.0	-3,450.8	3,473.2	0.04	0.00	0.04
6,000.0	89.89	269.13	2,698.5	-455.5	-3,550.7	3,573.0	0.04	0.00	0.04
6,100.0	89.89	269.17	2,698.7	-457.0	-3,650.7	3,672.9	0.04	0.00	0.04
6,200.0	89.89	269.22	2,698.9	-458.4	-3,750.7	3,772.8	0.04	0.00	0.04
6,300.0	89.89	269.26	2,699.0	-459.7	-3,850.7	3,872.6	0.04	0.00	0.04
6,400.0	89.89	269.31	2,699.2	-461.0	-3,950.7	3,972.5	0.04	0.00	0.04
6,500.0	89.89	269.35	2,699.4	-462.1	-4,050.7	4,072.3	0.04	0.00	0.04
6,600.0	89.89	269.40	2,699.6	-463.2	-4,150.7	4,172.2	0.04	0.00	0.04
6,700.0	89.89	269.44	2,699.8	-464.2	-4,250.7	4,272.0	0.04	0.00	0.04
6,800.0	89.89	269.49	2,700.0	-465.2	-4,350.7	4,371.9	0.04	0.00	0.04
6,900.0	89.89	269.53	2,700.2	-466.0	-4,450.7	4,471.7	0.04	0.00	0.04
7,000.0	89.89	269.58	2,700.4	-466.8	-4,550.7	4,571.5	0.04	0.00	0.04
7,100.0	89.89	269.62	2,700.6	-467.5	-4,650.7	4,671.4	0.04	0.00	0.04
7,200.0	89.89	269.67	2,700.8	-468.1	-4,750.7	4,771.2	0.04	0.00	0.04
7,300.0	89.89	269.71	2,700.9	-468.6	-4,850.7	4,871.0	0.04	0.00	0.04
7,400.0	89.89	269.76	2,701.1	-469.1	-4,950.7	4,970.8	0.04	0.00	0.04
7,500.0	89.89	269.80	2,701.3	-469.5	-5,050.7	5,070.6	0.04	0.00	0.04
7,600.0	89.89	269.85	2,701.5	-469.8	-5,150.7	5,170.4	0.04	0.00	0.04
7,700.0	89.89	269.89	2,701.7	-470.0	-5,250.7	5,270.2	0.04	0.00	0.04
7,800.0	89.89	269.94	2,701.9	-470.1	-5,350.7	5,370.0	0.04	0.00	0.04
7,900.0	89.89	269.98	2,702.1	-470.2	-5,450.7	5,469.8	0.04	0.00	0.04

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8,000.0	89.89	270.03	2,702.3	-470.2	-5,550.7	5,569.6	0.04	0.00	0.04
8,100.0	89.89	270.07	2,702.5	-470.1	-5,650.7	5,669.4	0.04	0.00	0.04
8,200.0	89.89	270.12	2,702.6	-469.9	-5,750.7	5,769.1	0.04	0.00	0.04
8,300.0	89.89	270.16	2,702.8	-469.7	-5,850.7	5,868.9	0.04	0.00	0.04
8,400.0	89.89	270.21	2,703.0	-469.4	-5,950.7	5,968.7	0.04	0.00	0.04
8,500.0	89.89	270.25	2,703.2	-469.0	-6,050.7	6,068.4	0.04	0.00	0.04
8,600.0	89.89	270.30	2,703.4	-468.5	-6,150.7	6,168.2	0.04	0.00	0.04
8,700.0	89.89	270.34	2,703.6	-467.9	-6,250.7	6,267.9	0.04	0.00	0.04
8,800.0	89.89	270.39	2,703.8	-467.3	-6,350.7	6,367.6	0.04	0.00	0.04
8,900.0	89.89	270.43	2,704.0	-466.6	-6,450.7	6,467.4	0.04	0.00	0.04
9,000.0	89.89	270.46	2,704.2	-465.8	-6,550.7	6,567.1	0.04	0.00	0.04
5-1/2" Production - Production									
9,100.0	89.89	270.52	2,704.3	-464.9	-6,650.7	6,666.8	0.04	0.00	0.04
9,200.0	89.89	270.57	2,704.5	-464.0	-6,750.6	6,766.5	0.04	0.00	0.04
9,300.0	89.89	270.61	2,704.7	-462.9	-6,850.6	6,866.3	0.04	0.00	0.04
9,400.0	89.89	270.66	2,704.9	-461.8	-6,950.6	6,966.0	0.04	0.00	0.04
9,445.1	89.89	270.68	2,705.0	-461.3	-6,995.7	7,010.9	0.04	0.00	0.04
PBHL - 1820' FNL & 100' FWL									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL - Kaiser 18-1H	0.00	0.00	2,705.0	-461.3	-6,995.7	636,638.58	538,169.28	32° 45' 0.560 N	104° 20' 37.099 W
- plan hits target center									
- Point									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,230.0	1,230.0	Surface	9-5/8	9-5/8
9,000.0	2,704.2	Production	5-1/2	5-1/2

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
400.0	400.0	Queen			
825.0	825.0	Grayburg			
1,000.0	1,000.0	Premier			
1,040.0	1,040.0	San Andres			
1,350.0	1,350.0	Middle San Andres			
1,960.1	1,960.0	Lower San Andres			
2,495.8	2,428.3	Glorietta			
2,647.4	2,522.4	Yeso			

Planning Report

Database: EDM Server Database
Company: Lime Rock Resources
Project: Eddy County, NM
Site: SEC 18 T18S R27E
Well: Kaiser 18-1H
Wellbore: Original Wellbore
Design: Plan 1

Local Co-ordinate Reference: Well Kaiser 18-1H
TVD Reference: KB @ 3308.4usft
MD Reference: KB @ 3308.4usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,230.0	1,230.0	0.0	0.0	9-5/8"
1,896.6	1,896.6	0.0	0.0	KOP - Start 8°/100' Build
2,552.5	2,464.6	-179.9	-214.4	Begin 52.47° Tangent
2,652.5	2,525.5	-230.9	-275.2	KOP - Start 10°/100' Build
3,164.0	2,693.0	-380.9	-715.8	EOC
4,274.0	2,695.2	-417.6	-1,925.2	FTP - 100' FEL
9,000.0	2,704.2	-465.8	-6,550.7	5-1/2" Production
9,445.1	2,705.0	-461.3	-6,995.7	PBHL - 1820' FNL & 100' FWL



LIME ROCK

Project: Eddy County, NM
Site: SEC 18 T18S R27E
Well: Kaiser 18-1H
Wellbore: Original Wellbore
Design: Plan 1

Reference Details

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Latitude: 32° 45' 5.124 N
Longitude: 104° 18' 15.181 W
Grid Convergence: 0.01° West
Ground Elevation: 3287.4
KB Elevation: KB @ 3308.4usft



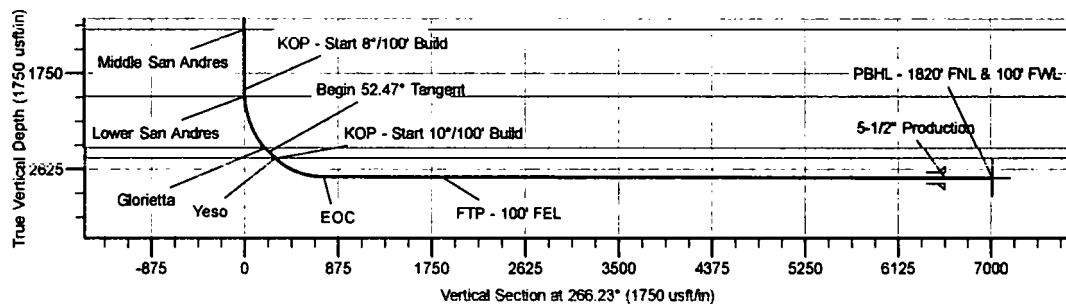
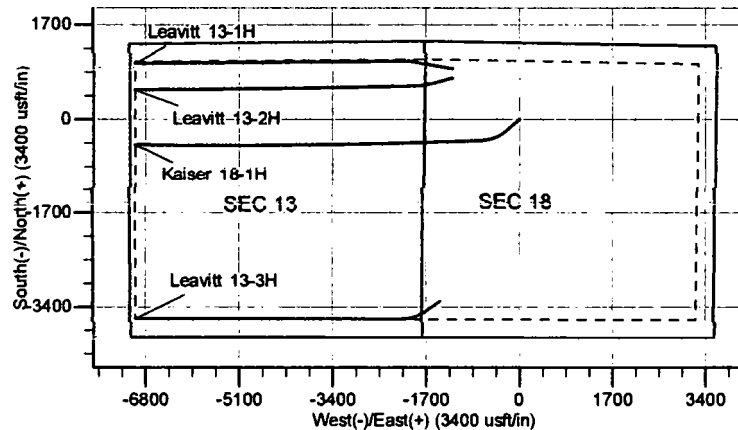
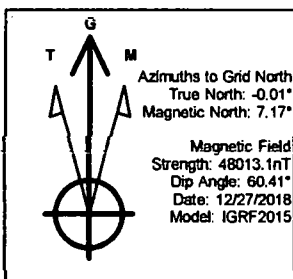
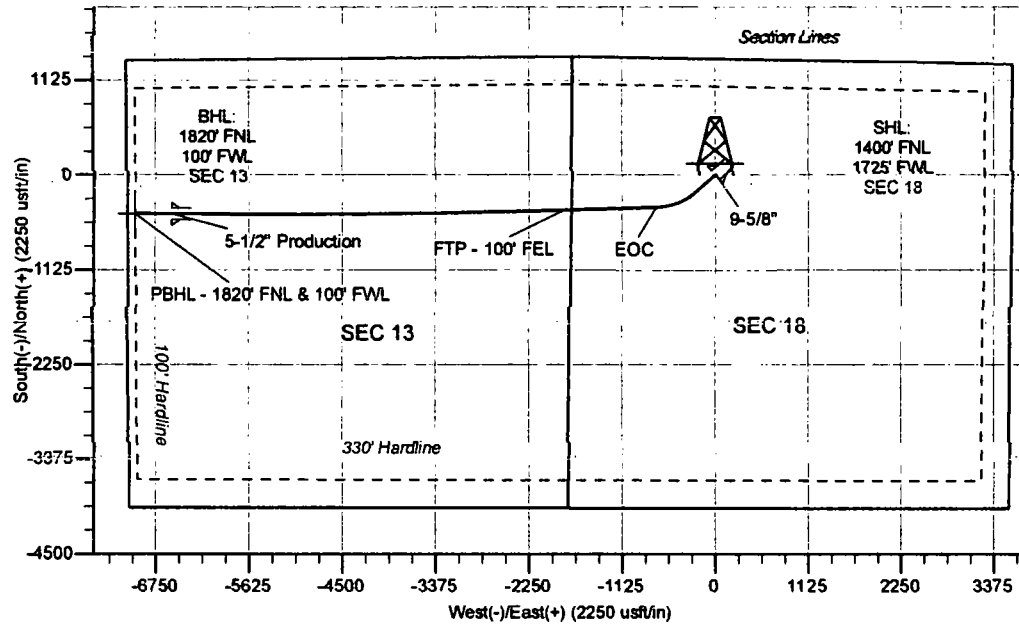
RPM Consulting, Inc.
1600 Broadway, Suite 1610
Denver, CO 80013
303-695-7625

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
1896.6	0.00	0.00	1896.6	0.0	0.0	0.00	0.00	0.0
2552.5	52.47	230.00	2464.6	-179.9	-214.4	8.00	230.00	225.8
2652.5	52.47	230.00	2525.5	-230.9	-275.2	0.00	0.00	289.8
3164.0	89.89	267.86	2693.0	-380.9	-715.7	10.00	52.00	739.3
9445.1	89.89	270.66	2705.0	-461.3	-6995.7	0.04	89.96	7010.9

CASING DETAILS

TVD	MD	Name	Size
1230.0	1230.0	Surface	9-5/8
2704.2	9000.0	Production	5-1/2



Hydrogen Sulfide Drilling Plan Summary

A. All personnel shall receive proper H₂S training in accordance with Onshore Order 6 III.C.3.a.

B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.

C. Required Emergency Equipment:

■ Well control equipment

- a. Flare line 150' from wellhead to be ignited by flare gun.
- b. Choke manifold with a remotely operated choke.
- c. Mud/gas separator

■ Protective equipment for essential personnel.

Breathing apparatus:

- a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
- b. Work/Escapes packs — 4 packs shall be stored on the rig floor and contain sufficiently long air hoses as to not to restrict work activity.
- c. Emergency Escape Packs — 4 packs shall be stored in the doghouse for emergency evacuation.

Auxiliary Rescue Equipment:

- a. Stretcher
- b. Two OSHA full body harness
- c. 100 ft 5/8 inch OSHA approved rope
- d. 1-20# class ABC fire extinguisher

■ H₂S detection and monitoring equipment:

The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.
(Gas sample tubes will be stored in the safety trailer)

■ Visual warning systems:

- a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
- b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
- c. Two wind socks will be placed in strategic locations, visible from all angles.

■ Mud program:

The mud program has been designed to minimize the volume of H₂S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H₂S bearing zones.

■ **Metallurgy:**

- a. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H₂S service.
- b. All elastomers used for packing and seals shall be H₂S trim.

■ **Communication:**

Communication will be via two way radio in emergency and company vehicles. Cell phones and land lines where available.

H2S CONTINGENCY DRILLING PLAN EMERGENCY CONTACTS

Company Offices - Lime Rock Houston Office
 Answering Service (After Hours)
 Artesia, NM Office
 Roswell, NM

713-292-9510
 713-292-9555
 575-748-9724
 575-623-8424

KEY PERSONNEL

Name	Title	Location	Office #	Cell #	Home #
Steve Hunter	Production Manager	Houston	713-292-9516	832-330-7313	Same as Cell
Spencer Cox	Operations Engineer	Houston	713-292-9528	432-254-5140	Same as Cell
Eric McClusky	Operations Engineer	Houston	713-360-5714	832-491-3079	405-821-0534
Jerry Smith	Assistant Production Supervisor	Artesia	575-748-9724	505-918-0556	575-746-2478
Michael Barrett	Production Supervisor	Roswell	575-623-8424	505-353-2644	575-623-4707
Gary McCelland	Well Site Supervisor	Rotates on Site	NA	903-503-8997	NA
Dave Williamson	Well Site Supervisor	Rotates on Site	NA	575-308-9980	NA

Agency Call List		
City	Agency or Office	Telephone #
Artesia	Ambulance	911
Artesia	State Police	575-746-2703
Artesia	Sherriff's Office	575-746-9888
Artesia	City Police	575-746-2703
Artesia	Fire Department	575-746-2701
Artesia	Local Emergency Planning Committee	575-746-2122
Artesia	New Mexico OCD District II	575-748-1283
Carlsbad	Ambulance	911
Carlsbad	State Police	575-885-3137
Carlsbad	Sherriff's Office	575-887-7551
Carlsbad	City Police	575-885-2111
Carlsbad	Fire Department	575-885-2111
Carlsbad	Local Emergency Planning Committee	575-887-3798
Carlsbad	US DOI Bureau of Land Management	575-887-6544
State Wide	New Mexico Emergency Response Commisssion ("NMERC")	505-476-9600
State Wide	NMERC 24 Hour Number	505-827-9126
State Wide	New Mexico State Emergency Operations Center	505-476-9635
National	National Emergency Response Center (Washington D.C.)	800-424-8802

Emergency Services				
Name	Service	Location	Telephone Number	Alternate Number
Boots & Coots International Well Control	Well Control	Houston / Odessa	1-800-256-9688	281-931-8884
Cudd Pressure Control	Well Control/Pumping	Odessa	915-699-0139	915-563-3356
Baker Hughes Inc.	Pumping Services	Artesia, Hobbs & Odessa	575-746-2757	Same
Total Safety	Safety Equipment & Personnel	Artesia	575-746-2847	Same
Cutter Oilfield Services	Drilling Systems Equipment	Midland	432-488-6707	Same
Safety Dog	Safety Equipment & Personnel	Artesia	575-748-5847	575-441-1370
Fighting for Life	Emergency Helicopter Evacuation	Lubbock	806-743-9911	Same
Aerocare	Emergency Helicopter Evacuation	Lubbock	806-747-8923	Same
Med Flight Air Ambulance	Emergency Helicopter Evacuation	Albuquerque	505-842-4433	Same
Artesia General Hospital	Emergency Medical Care	Artesia	575-748-3333	702 North 13th Street

Pressure Control Equipment

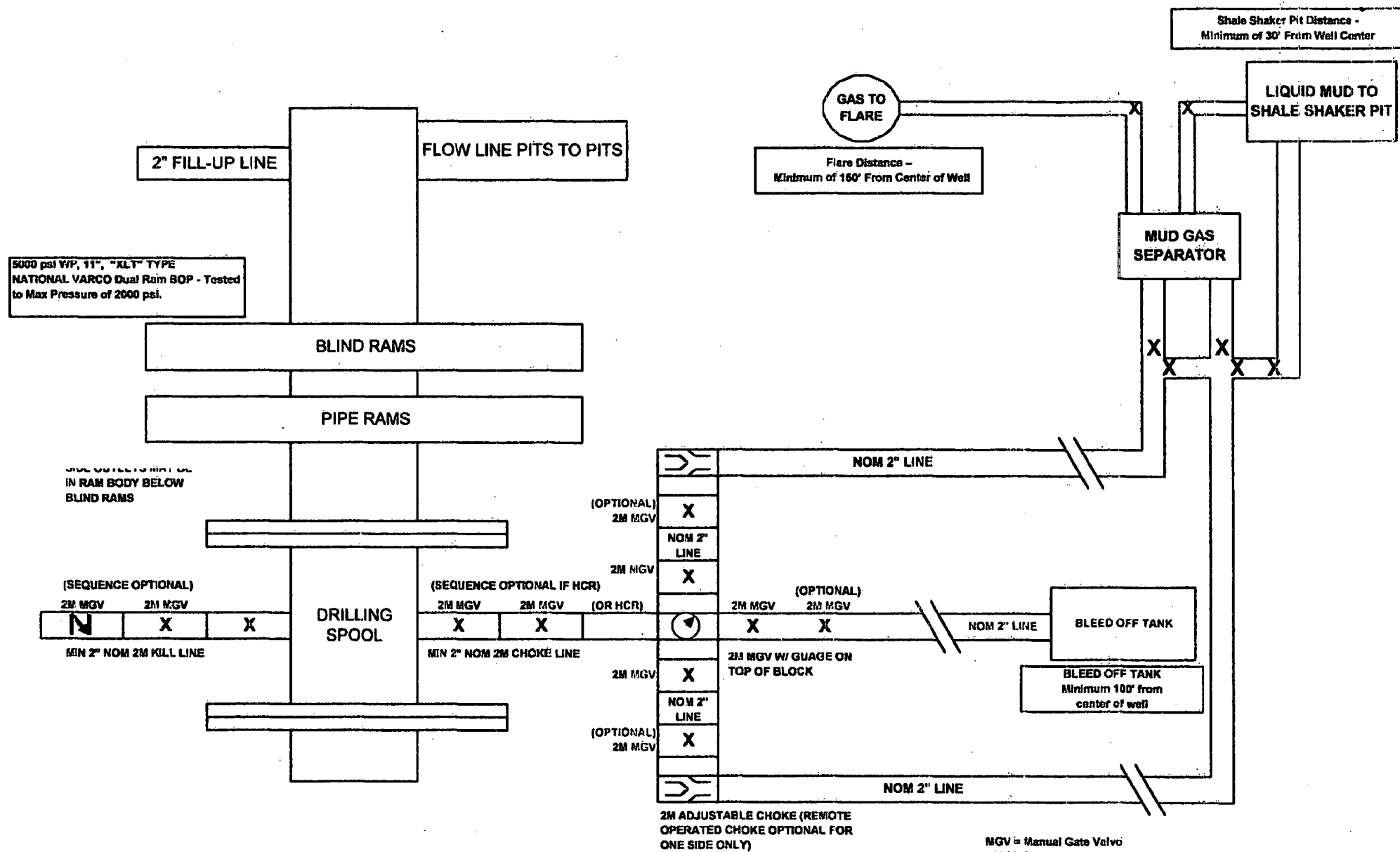
The blowout preventer equipment (BOP) will consist of a 5000 psi rated, "XLT" type, National VARCO double ram preventer that will be tested to a maximum pressure of 2000 psi. The unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and drill pipe rams on bottom. The 2M BOP will be installed on the 9 5/8" surface casing and utilized continuously until total depth is reached. All casing strings will be tested as per Onshore Order #2. This also includes a thirty day (30) test, should the rig still be operating on the same well in thirty days.

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 drilling logs.

The BOP equipment will consist of the following:

- Double ram with blind rams (top) and pipe rams (bottom),**
- Drilling spool, or blowout preventer with 2 side outlets (choke side shall be a 2" minimum diameter, kill side will be at least 2 inch diameter),**
- Kill line (2 inch minimum),**
- A minimum of 2 choke line valves (2 inch minimum),**
- 2 inch diameter choke line,**
- 2 kill valves, one of which will be a check valve (2 inch minimum),**
- 2 chokes, one of which will be capable of remote operation,**
- 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 will be flanged, welded, or clamped,**
- A Fill-up line above the uppermost preventer.**

2M BOP SCHEMATIC



MGV = Manual Gate Valve
CKV = Check Valve
HCR = Hydraulically Controlled Remote Valve

NOTE: All lines, valves and chokes are shown at the minimum size allowed, but may be larger

Lime Rock Resources II-A, L.P.

Kaiser 18 1H

Unit F, S18-T18S-R27E, Eddy County, NM

Design: Closed Loop System with roll-off steel bins (pits)

CRI/HOBBS will supply (2) bins (100 bbl) volume, rails and transportation relating to the Close Loop System. Specification of the Closed Loop System is attached.

Contacts: Gary Wallace (432) 638-4076 Cell (575) 393-1079 Office

Scomi Oil Tool: Supervisor – Armando Soto (432) 553-7979 Hobbs, NM

Monitoring 24 Hour service

Equipment:

Centrifuges – Derrick Brand

Rig Shakers – Brandt Brand

D-watering Unit

Air pumps on location for immediate remediation process

Layout of Close Loop System with bins, centrifuges and shakers attached.

Cuttings and associated liquids will be hauled to a State regulated third party disposal site (CRI or Controlled Recovery, Inc.). The disposal site permit is DFP = #R9166.

2- (250 bbl) tanks to hold fluid

2-CRI bins with track system

2-500 bbl frac tanks with fresh water

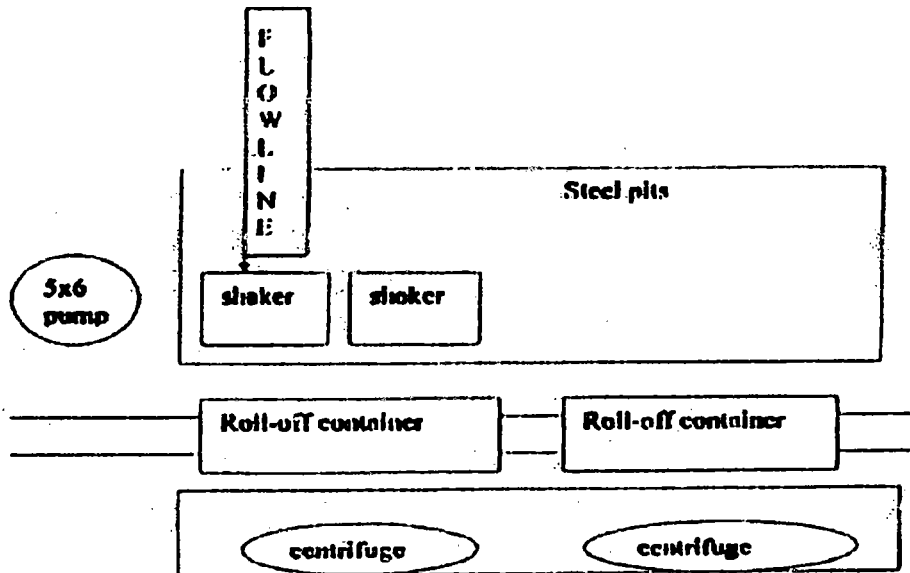
2-500 bbl frac tanks for brine water

Operations:

Closed Loop System equipment will be inspected daily by each tour and any necessary maintenance performed. leak in system will be repaired and/or contained immediately. OCD will be notified within 48 hours of any spill. Remediation process will start immediately.

Closure:

During drilling operations all liquids, drilling fluids and cuttings will be hauled off via CRI equipment to DFP #R9166.



This will be maintained by 24 hour solids control personnel that stay on location.

TOMMY WILSON



**CLOSED LOOP
SPECIALTY**

Office: 973.746.1659

Cell: 973.748.6367