

**STATE OF NEW MEXICO  
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES  
OIL CONSERVATION COMMISSION**

**APPLICATION OF THE NEW MEXICO OIL CONSERVATION DIVISION THROUGH  
THE SUPERVISOR OF DISTRICT II FOR AN EMERGENCY ORDER SUSPENDING  
CERTAIN APPROVED APPLICATIONS FOR PERMITS TO DRILL, AND FOR  
ADOPTION OF SPECIAL RULES FOR DRILLING IN CERTAIN AREAS FOR THE  
PROTECTION OF FRESH WATER, CHAVES AND EDDY COUNTIES, NEW MEXICO.**

**Case No. 15487**

**PRE-HEARING STATEMENT  
OF LIME ROCK RESOURCES II-A, L.P.**

Lime Rock Resources II-A, L.P. ("Lime Rock") submits this Pre-Hearing Statement as required by the Oil Conservation Commission.

**APPEARANCES**

**PARTIES**

Applicant Oil Conservation Division

Pecos Valley Artesian Conservancy District

**ATTORNEYS**

David Brooks, Esq.  
Energy, Minerals and Natural Resources  
Department of the State of New Mexico  
1220 S. St. Francis Drive  
Santa Fe, NM 87505  
Phone: (505) 476-3415  
[Davidk.Brooks@state.nm.us](mailto:Davidk.Brooks@state.nm.us)

AJ Olsen, Esq.  
Alvin F. Jones, Esq.  
Olivia R. Mitchell, Esq.  
P.O. Box 1415  
Roswell, NM 88202-1415  
Phone: (575) 624-2463  
Fax: (575) 624-2878  
[ajolsen@h2olawyers.com](mailto:ajolsen@h2olawyers.com)  
[ajones@h2olawyers.com](mailto:ajones@h2olawyers.com)  
[omitchell@h2olawyers.com](mailto:omitchell@h2olawyers.com)

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COG Operating LLC, OXY USA Inc., and  
Fasken Oil & Ranch, Ltd.

Michael H. Feldewert, Esq.  
Jordan L. Kessler, Esq.  
Holland & Hart, LLP  
Post Office Box 2208  
Santa Fe, NM 87504-2208  
Phone: (505) 988-4421  
Fax: (505) 983-6043  
[mfeldewert@hollandhart.com](mailto:mfeldewert@hollandhart.com)  
[jlkessler@hollandhart.com](mailto:jlkessler@hollandhart.com)

EOG Y Resources Inc.

Gary W. Larson, Esq.  
Hinkle Shanor LLP  
P.O. Box 2068  
Santa Fe, NM 87504-2068  
Phone: (505) 982-4554  
Fax: (505) 982-8623  
[glarson@hinklelawfirm.com](mailto:glarson@hinklelawfirm.com)

Mack Energy and Devon Energy Production  
Company, L.P.

James Bruce  
Post Office Box 1056  
Santa Fe, NM 87504  
Phone: (505) 982-2043  
[jamesbruc@aol.com](mailto:jamesbruc@aol.com)

Independent Petroleum Association of New  
Mexico

Karin M. Foster  
IPANM  
5805 Mariola Place, NE  
Albuquerque, NM 87111  
[Fosterassociates2005@yahoo.com](mailto:Fosterassociates2005@yahoo.com)

New Mexico Oil & Gas Association

Ryan Flynn  
NMOGA  
Post Office Box 1864  
Santa Fe, NM 87504  
Phone: (505) 982-2568  
Fax: (505) 986-1094  
[rflynn@nmoga.org](mailto:rflynn@nmoga.org)

### **STATEMENT OF THE CASE**

The Fifth Amended Application for Rulemaking filed by the Oil Conservation Division ("the Division") requests an order amending 9.15.39 NMAC by adding a new section 11 that would apply to newly-drilled wells within a Division-specified Designated Area. The intended effect of the Division's proposed rule is a requirement of two strings of surface protection casing in any well drilled through the shallow and artesian aquifers within the Designated Area.

Lime Rock opposes the Division's application on the grounds that the proposed rule: (1) is unnecessary in light of the Division's current statewide rules, which provide adequate protection for the shallow and artesian aquifers, and historical and current drilling practices within the Designated Area that have proven to be protective of both aquifers; and (2) would result in excessive drilling costs and increased drilling and safety risks.

### **PROPOSED EVIDENCE**

<b><u>WITNESS</u></b>	<b><u>ESTIMATED TIME</u></b>	<b><u>EXHIBITS</u></b>
John Maxey (Engineer)	30 minutes	8

In accordance with 19.15.4.13(B)(2) NMAC, Lime Rock has attached hereto copies of the documentary exhibits (Exhibit Nos. 1 through 8) that it proposes to offer into evidence at the hearing.

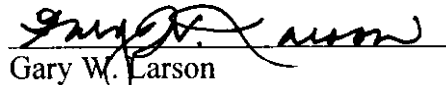
Lime Rock reserves the right to call a rebuttal witness(es) and introduce rebuttal exhibits if appropriate.

### **PROCEDURAL MATTERS**

Lime Rock is not aware of any procedural matters to be resolved prior to or at the hearing.

Respectfully submitted,

HINKLE SHANOR LLP

A handwritten signature in black ink, appearing to read "Gary W. Larson", is written over a horizontal line.

Gary W. Larson

P.O. Box 2068

Santa Fe, NM 87504-2068

Phone: (505) 982-4554

Facsimile: (505) 982-8623

[glarson@hinklelawfirm.com](mailto:glarson@hinklelawfirm.com)

*Counsel for Lime Rock Resources II-A, L.P.*

## CERTIFICATE OF SERVICE

I hereby certify that on this 21<sup>st</sup> day of November, 2016, I served a true and correct copy of the foregoing *Pre-Hearing Statement of Lime Rock Resources II-A, L.P.* via email to:

David Brooks, Esq.  
Energy, Minerals and Natural Resources  
Department of the State of New Mexico  
1220 S. St. Francis Drive  
Santa Fe, NM 87505  
[Davidk.Brooks@state.nm.us](mailto:Davidk.Brooks@state.nm.us)

*Council for the Oil Conservation Division*

Michael H. Feldewert, Esq.  
Jordan L. Kessler, Esq.  
Holland & Hart, LLP  
Post Office Box 2208  
Santa Fe, NM 87504-2208  
[mfeldewert@hollandhart.com](mailto:mfeldewert@hollandhart.com)  
[jlkessler@hollandhart.com](mailto:jlkessler@hollandhart.com)

*Counsel for COG Operating, LLC, OXY USA  
Inc. and Fasken Oil and Ranch Ltd.*

Karin V. Foster  
Southwest Government Affairs, LLC  
5805 Mariola Place, NE  
Albuquerque, NM 87111  
[Karin@SWgovernmentAffairs.com](mailto:Karin@SWgovernmentAffairs.com)

*Counsel for the Independent Petroleum  
Association of New Mexico*

Ryan Flynn  
New Mexico Oil & Gas Association  
Post Office Box 1864  
Santa Fe, NM 87504  
[flynn@nmoga.org](mailto:flynn@nmoga.org)

*Counsel for the New Mexico Oil &  
Gas Association*

AJ Olsen, Esq.  
Alvin F. Jones, Esq.  
Olivia R. Mitchell, Esq.  
P.O. Box 1415  
Roswell, NM 88202-1415  
[ajolsen@h2olawyers.com](mailto:ajolsen@h2olawyers.com)  
[ajones@h2olawyers.com](mailto:ajones@h2olawyers.com)  
[omitchell@h2olawyers.com](mailto:omitchell@h2olawyers.com)

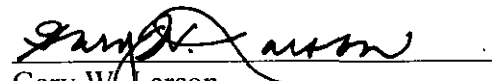
*Counsel for the Pecos Valley Artesian  
Conservancy District*

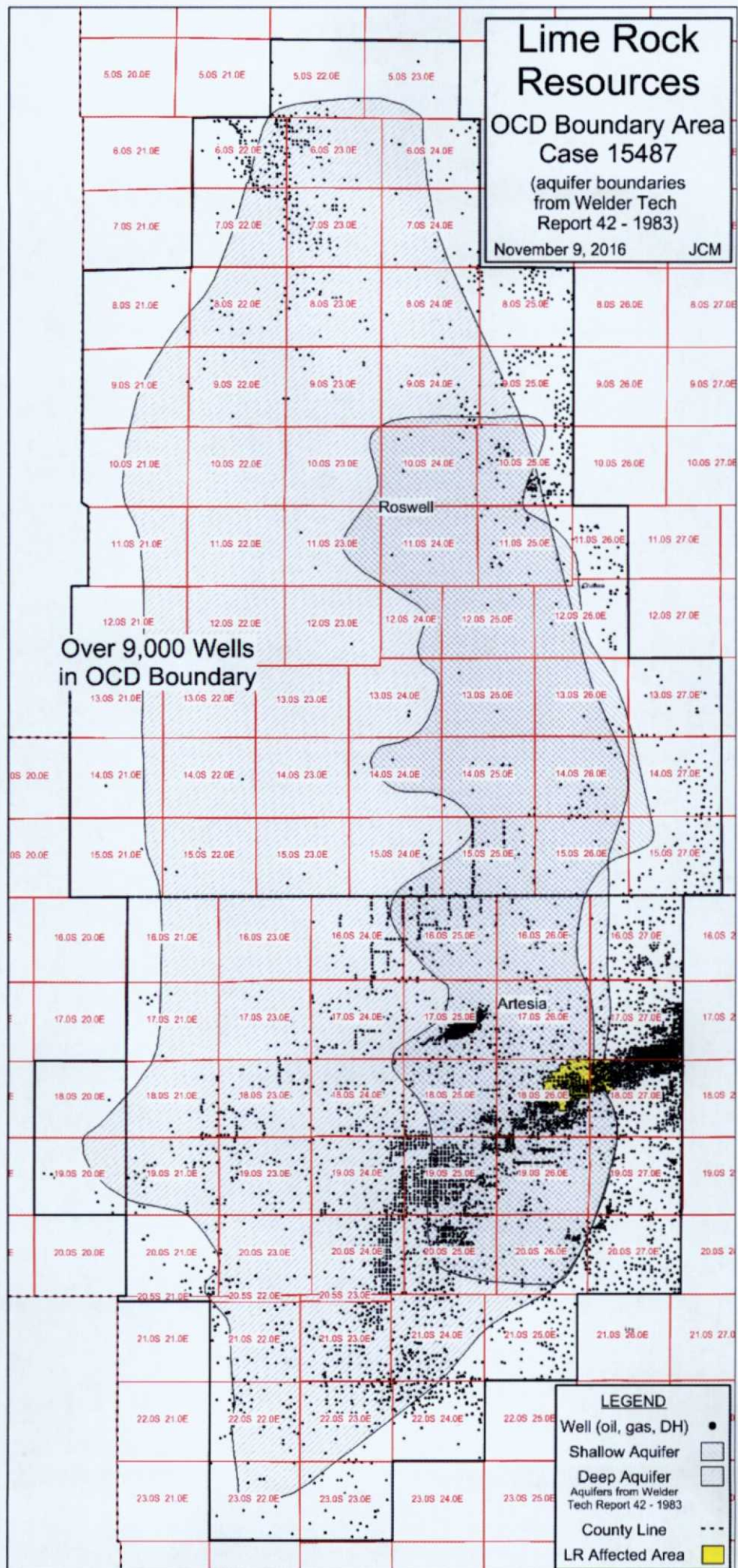
James Bruce  
Post Office Box 1056  
Santa Fe, NM 87504  
[jamesbruc@aol.com](mailto:jamesbruc@aol.com)

*Counsel for Mack Energy Corporation and  
Devon Energy Production Company, L.P.*

Pablo Seifert  
407 Galisteo, Suite 101  
Santa Fe, NM 87501  
[Pablo.Seifert@state.nm.us](mailto:Pablo.Seifert@state.nm.us)

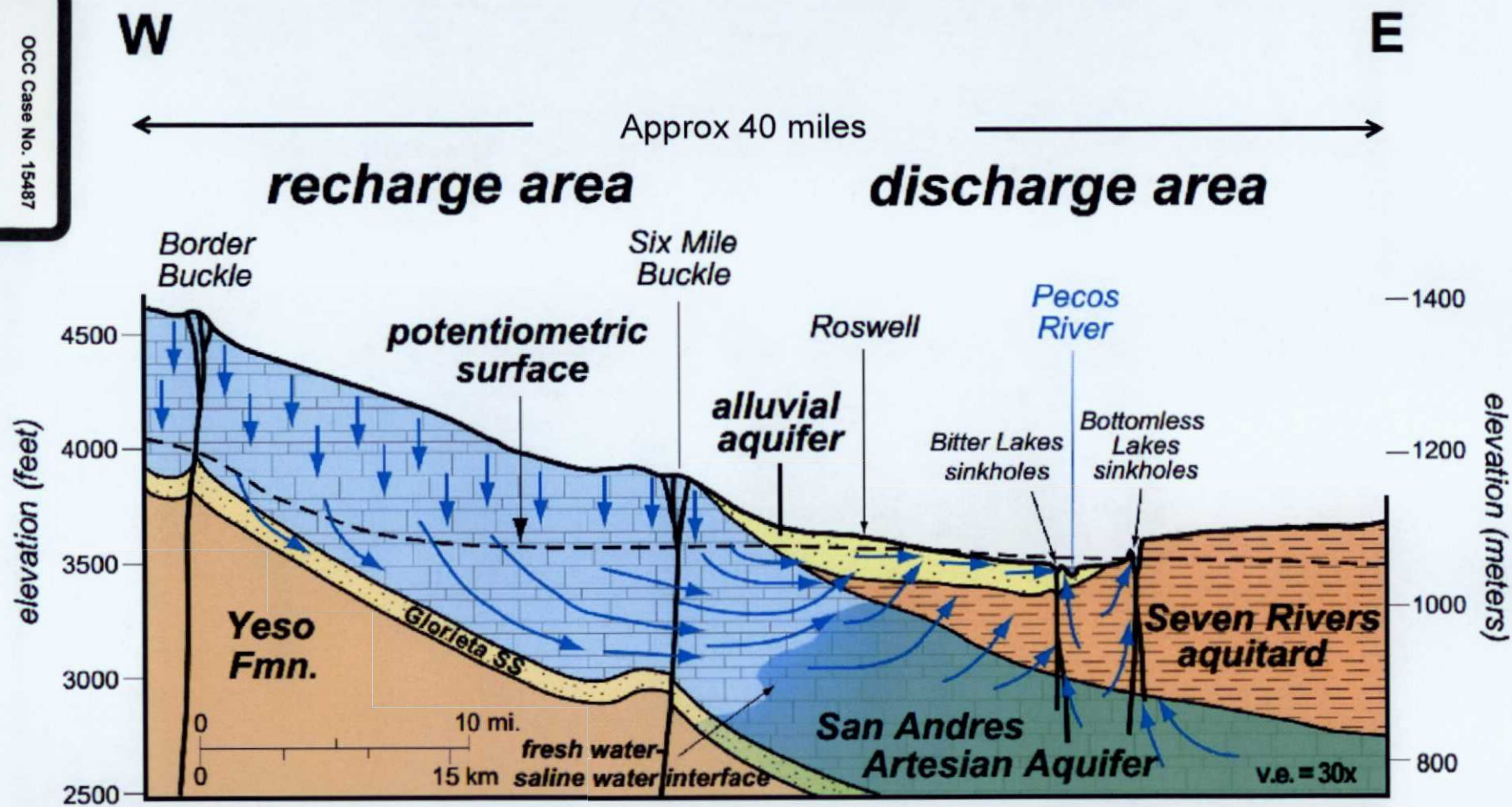
*Counsel for the Office of the State Engineer*

  
\_\_\_\_\_  
Gary W. Larson



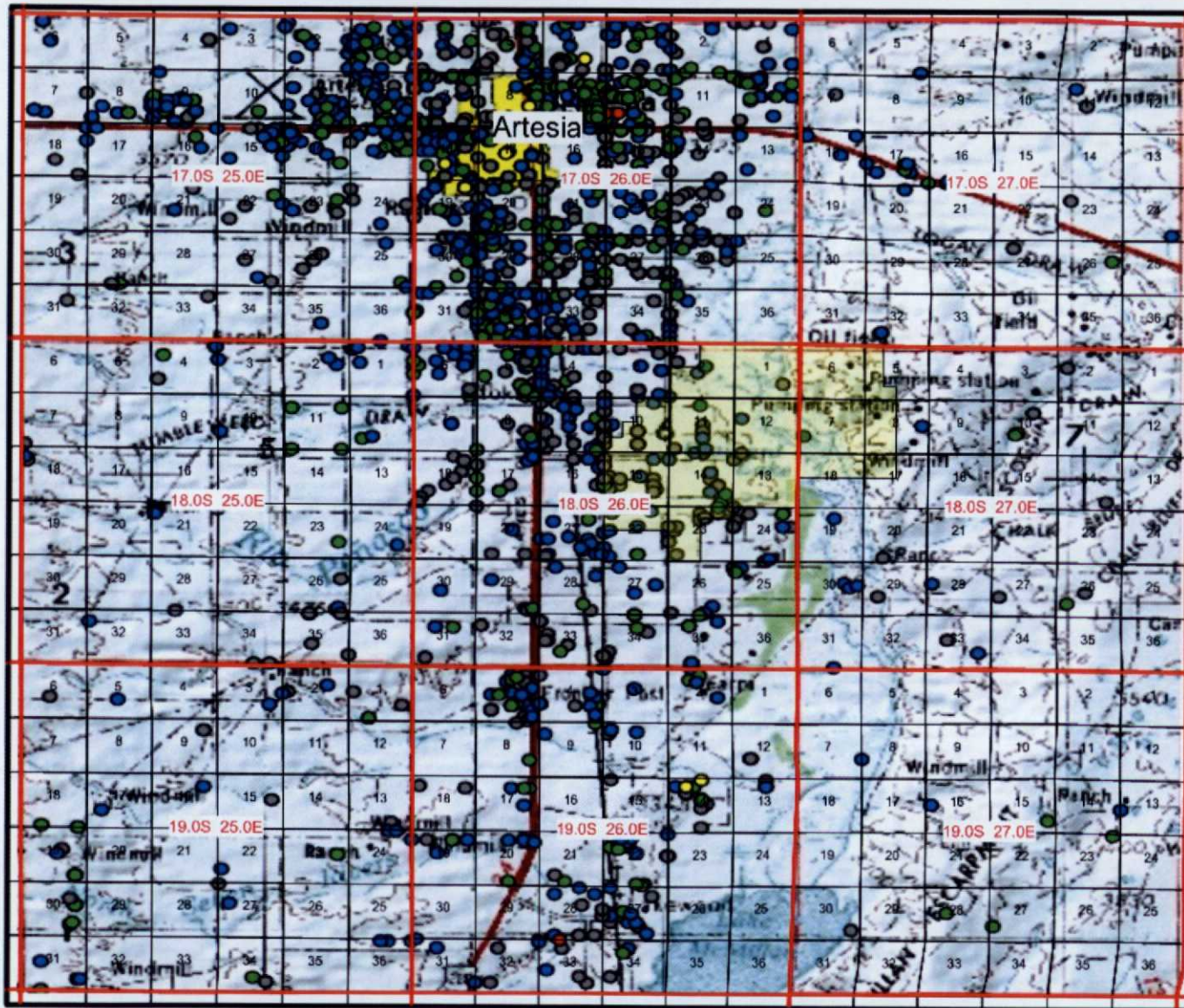
OCC Case No. 15487  
LIME ROCK RESOURCES II-A  
**Exhibit # 1**





**Figure 2**—West-east hydrostratigraphic section illustrating regional ground water flow patterns within the artesian and shallow aquifers. Arrows indicate general direction of ground water flow. Line of section shown in figure 1.





# Lime Rock Resources Oil Industry - Water Industry

## Water Well Locations 9 Township Area

November 8, 2016

JCM

**Legend**  
(Water well spots and designations  
from OSE website)  
Lime Rock  
affected acreage in Yellow

- Active
- Capped
- Inactive
- Pending
- Plugged
- Oil, Gas, or P&A
- Other Values

OCC Case No. 15487

LIME ROCK RESOURCES II-A  
**Exhibit # 3**



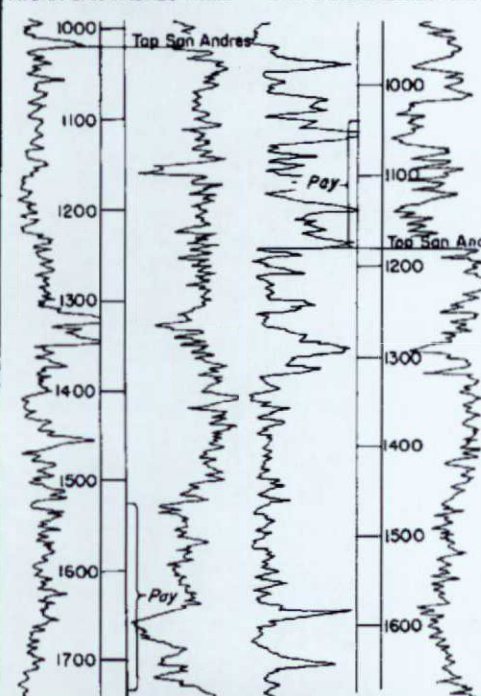
Lime Rock Acreage in Yellow

R 26 E

Outline of RGS Atoka SA  
Study Cum 8 MMBO 12 BCF  
8 MMBW (157 wells)

Atoka Grayburg  
395 MBO 1.9 MMBW  
13 Depth 950' - 990'  
14H 134 BOPD 50 psi  
flowing on 16/64 ck

TYPE LOG  
ATOKA SAN ANDRES POOL



TYPE LOG  
DAYTON GRAYBURG POOL

Outline of RGS Dayton SA Study  
Cum 10 MBO 807 MCF 11.6 MBW

Outline of RGS Dayton  
GB Study, Cum 245 MBO  
197 MMCF 22 MBW

ATOKA SAN ANDRES POOL  
&  
DAYTON GRAYBURG POOL  
EDDY COUNTY, NEW MEXICO  
STRUCTURAL CONTOURS ON  
TOP OF SAN ANDRES

SCALE IN FEET  
4000' 8000'

OCTOBER, 1956

R 26 E

OCC Case No. 15487

LIME ROCK RESOURCES II-A

Exhibit # 4

Data prepared by: Symposium Committee  
 Affiliation: Roswell Geological Society  
 Date: Aug. 31, 1960

Field Name: Dayton San Andres  
 Location: Sec. 27, 35, T.18 S., R. 26 E.  
 County & State: Eddy Co., N. Mex.

DISCOVERY WELL: Simms & Reese #3 Fedell  
 COMPLETION DATE: July 5, 1956  
 PAY ZONE: San Andres (Permian). Gray to tan fine crystalline dolomite. Production is from a series of thin porosity zones in the upper 600 feet of the San Andres. Porous zones vary in thickness and stratigraphic position.

## TYPICAL CORE ANALYSIS OF A PAY INTERVAL IN THIS FIELD:

Perm. in millidarcys		% Porosity	Liquid Saturation (% of pore space)	
Horizontal	Vertical		Water	Oil

OTHER SHOWS ENCOUNTERED IN THIS FIELD: Shows are found in the lower Queen Grayburg section.

TRAP TYPE: Stratigraphic

NATURE OF OIL: Gravity 37° API

NATURE OF GAS: None reported

NATURE OF PRODUCING ZONE WATER:

Resistivity:

ohm-meters @

°F.

	Total Solids	Na+K	Ca	Mg	Fe	SO <sub>4</sub>	Cl	CO <sub>3</sub>	HCO <sub>3</sub>	OH	H <sub>2</sub> S
ppm											

INITIAL FIELD PRESSURE: Not available

TYPE OF DRIVE: Water

NORMAL COMPLETION PRACTICES: Casing is set through pay and perforated. Formation is then given a small treatment of mud acid followed by sandfrac.

## PRODUCTION DATA:

Year	Type	No. of wells @ yr. end		Production Oil in barrels Gas in MMCF	
		Producing	Shut in or Abnd.	Annual	Cumulative
1956	oil	1		301	301
	gas				
1957	oil		1	292	593
	gas				
1958	oil	1	1	212	805
	gas				
1959	oil	1	1	305	1,110
	gas				
1960*	oil	1	1	107	1,217
	gas				

\* 1960 Figure is production to July 1, 1960.

Data prepared by: Symposium Committee  
 Affiliation: Roswell Geological Society  
 Date: 10-30-56

Field Name: Dayton (Grayburg)  
 Location: Secs. 24, 25, 26, & 35, T. 18 S., R. 26 E.  
 County & State: Eddy County, New Mexico

DISCOVERY WELL: Bassett & Birney et al #1 Platt

COMPLETION DATE: 9-3-40

PAY ZONE: Grayburg dolomite & sand: The oil occurrence is found in a 150' interval above the San Andres with most of the production coming from the Grayburg sands. The dolomite is tan and gray, finely crystalline, sandy in spots, also having anhydrite inclusions; the oil apparently comes from fracture porosity. The sand is largely fine grained, gray quartz with dolomitic cementing material; however, on sand interval that probably carries throughout the pool and has the best shows, is medium to coarse grained gray quartz with the grains rounded and frosted.

TYPICAL CORE ANALYSIS OF A PAY INTERVAL IN THIS FIELD:

Perm. in millidarcys		% Porosity	Liquid Saturation (% of pore space)	
Horizontal	Vertical		Water	Oil
4		9	50	32

OTHER SHOWS ENCOUNTERED IN THIS FIELD: Shows are found in San Andres formation.

TRAP TYPE: Stratigraphic.

NATURE OF OIL: Gravity 36° A.P.I.

NATURE OF GAS: Sweet.

NATURE OF PRODUCING ZONE WATER: No Analysis

Resistivity: \*\* ohm-meters @ °F.

	Total Solids	Na/K	Ca	Mg	Fe	SO <sub>4</sub>	Cl	CO <sub>2</sub>	HCO <sub>3</sub>	OH	H <sub>2</sub> S
ppm											

INITIAL FIELD PRESSURE: Information not available.

TYPE OF DRIVE: Gas solution drive.

NORMAL COMPLETION PRACTICES: Wells were completed open hole and shot with nitro-glycerine.

#### PRODUCTION DATA:

No. of wells @ yr. end				Production		No. of wells @ yr. end				Production	
Year	Type	Prod.	Shut in or Abnd.	Oil in barrels Gas in MMCF		Year	Type	Prod.	Shut in or Abnd.	Oil in barrels Gas in MMCF	
				Annual	Cumulative					Annual	Cumulative
1941	oil			30,219	38,889	1949	oil	11	7	6,022	136,543
	gas						gas				
1942	oil			17,599	56,488	1950	oil	10	8	4,969	141,512
	gas						gas				
1943	oil			16,853	73,341	1951	oil	10	8	3,639	145,151
	gas						gas				
1944	oil			18,757	92,098	1952	oil	12	7	3,849	149,000
	gas						gas				
1945	oil			16,178	108,276	1953	oil	10	9	4,029	153,029
	gas						gas				
1946	oil	10	5	8,045	116,321	1954	oil	10	9	3,828	156,857
	gas						gas				
1947	oil	10	5	7,232	123,553	1955	oil	10	9	3,398	160,255
	gas						gas				
1948	oil	10	5	6,968	130,521	1956*	oil	10	9	1,263	161,518
	gas						gas				

\* 1956 Figure is production to 5-1-56.

Refer to map of Atoka-San Andres Field for nature of shallow structure.

Data prepared by: Symposium Committee  
 Affiliation: Roswell Geological Society  
 Date: 10-30-56

Field Name: Atoka (San Andres)  
 Location: Sec. 9, 10, 11, 14, 15, 21 & 22, T. 18 S.,  
 County & State: R. 26 E.

Eddy County, New Mexico

DISCOVERY WELL: Jones #1 Terry.

COMPLETION DATE: 2-28-56

PAY ZONE: San Andres dolomite: The pay interval occurs in a fine to medium crystalline brown dolomite, having anhydrite inclusions, 500-650' below the top of the San Andres.

Shows are found both above and below this interval; however, these shows ranges from pin point and pin head to inter-crystalline, with apparently a preponderance of production coming from the intervals with inter-crystalline porosity.

TYPICAL CORE ANALYSIS OF A PAY INTERVAL IN THIS FIELD:

Perm. in millidarcys		% Porosity	Liquid Saturation (% of pore space)	
Horizontal	Vertical		Water	Oil
1.4		9	39	15.5

OTHER SHOWS ENCOUNTERED IN THIS FIELD: Shows are found in Lower Queen-Grayburg Section.  
 Refer to Dayton-Grayburg Field.

TRAP TYPE: Stratigraphic  
 NATURE OF OIL: 37° A.P.I. Gravity  
 NATURE OF GAS: Sweet  
 NATURE OF PRODUCING ZONE WATER:

Resistivity: 05 ohm-meters @ 75 °F.

	Total Solids	Na/K	Ca	Mg	Fe	SO <sub>4</sub>	Cl	CO <sub>2</sub>	HCO <sub>3</sub>	OH	H <sub>2</sub> S
ppm	218.581	79,500	2240	2135	0	4140	130,000		566		90

INITIAL FIELD PRESSURE: 610 psi.

TYPE OF DRIVE: Gas Solution

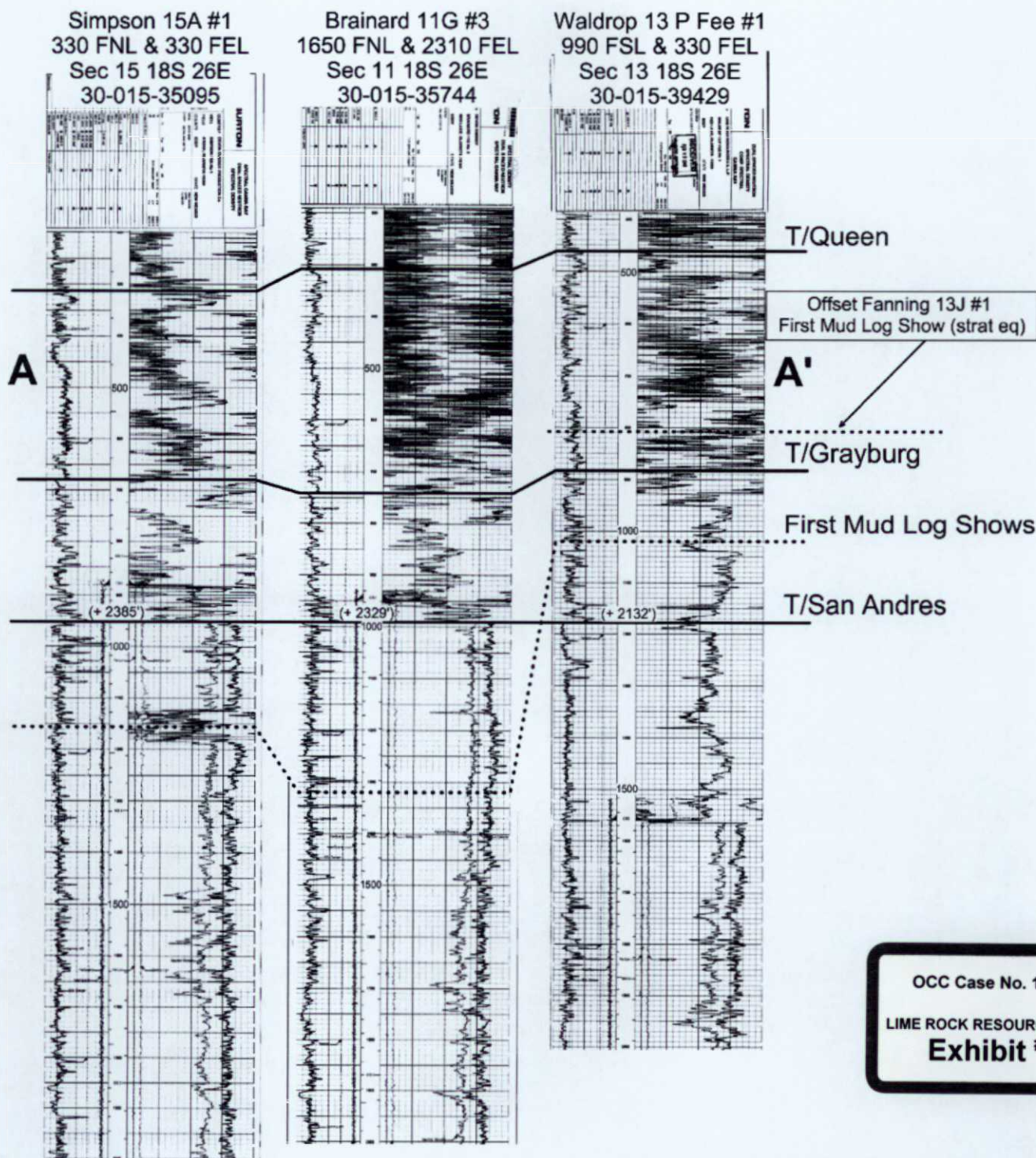
NORMAL COMPLETION PRACTICES: Casing is set through pay and perforated, formation is then stimulated with a small amount of MCA followed by a sand-frac.

PRODUCTION DATA:

No. of wells @ yr. end				Production		No. of wells @ yr. end				Production	
Year	Type	Prod.	Shut in or Abnd.	Oil in barrels Gas in MMCF		Year	Type	Prod.	Shut in or Abnd.	Oil in barrels Gas in MMCF	
				Annual	Cumulative					Annual	Cumulative
1941	oil					1949	oil				
	gas						gas				
1942	oil					1950	oil				
	gas						gas				
1943	oil					1951	oil				
	gas						gas				
1944	oil					1952	oil				
	gas						gas				
1945	oil					1953	oil				
	gas						gas				
1946	oil					1954	oil				
	gas						gas				
1947	oil					1955	oil				
	gas						gas				
1948	oil					1956*	oil	1		2,048	2,048
	gas						gas				

\* 1956 Figure is production to 5-1-56.





OCC Case No. 15487

LIME ROCK RESOURCES II-A

**Exhibit # 5**

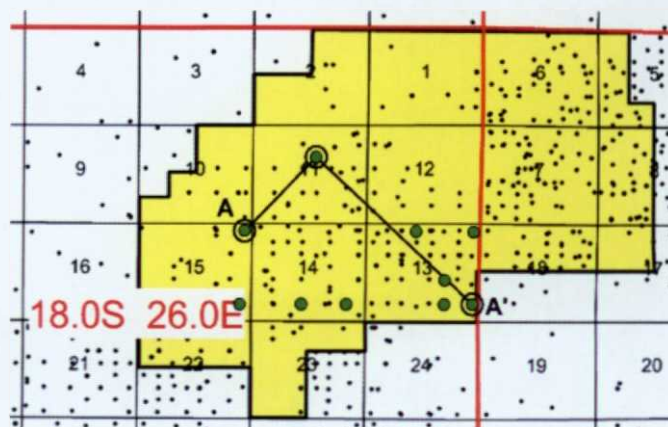
## Lime Rock Resources Stratigraphic X-Section

### Tops & Shallowest Mud Log Shows

November 8, 2016

JCM

● = wells used for first mud log show data  
stats. Shallowest 740' (13J), deepest  
1,320' (11G), average 1,176'.





# QUALITY LOGGING, INC

P.O. Box 2463

MIDLAND, TX 79702

(432)682-7168

OCC Case No. 15487

LIME ROCK RESOURCES II-A

Exhibit # 6

COMPANY: Lime Rock Resources II-A, L.P.

WELL: FANNING 13 J #1

FIELD: \_\_\_\_\_ COUNTY: EDDY STATE: NM

LOCATION: 2310' FSL & 1650' FEL

Section 13-T18S-R26E (NE Unit J)

Interval Logged: 450 To: 4326 G.L.: 3293.3 K.B.: 3306.7

Date Logged: 10-2-12 To: 10-8-12 Spud Date: \_\_\_\_\_

Rig: UNITED DRILLING #22 Unit No.: \_\_\_\_\_

Loggers: MIKE HERRING, CHRIS JAMES

Api No.: 30-015-40484

Filename: fanning\_13\_j\_-1.mlw

Geologist: STAN BISHOP

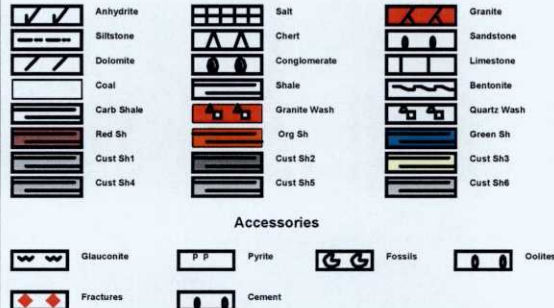
## Abbreviations:

NB...New Bit  
CO...Circ Out  
NR...No Returns  
TG...Trip Gas  
WOB...Wt on Bit  
RPM...Rev/Min  
SG...Survey Gas  
DST...Drill Stem Test  
DS...Directional Survey  
CG...Connection gas  
LAT...Logged After Trip  
PP...Pump Pressure  
SPM...Strokes/Min  
DTG...Down Time Gas

## Mud Data

WT...Weight  
PH...Acidity  
CHL...Chlorides  
V...Viscosity  
F...Filtrate  
SC...Solids Content

## Lithology Symbols:



## Accessories

## Gas Chromatograph Analysis:

HW  
C1  
C2  
C3  
IC4  
NC4  
IC5

## Drilling Rate

MIN/FT

Vis  
Por  
Tr /  
p  
f  
g

## Lithology

%  
Oil  
Flu  
Tr /  
p f g  
p f g

## Descriptions/Remarks

## Total Gas/Chromatograph

MWH OT

50-CJ OT

COMMENCE 2 MAN LOGGING  
ON 10-2-2012

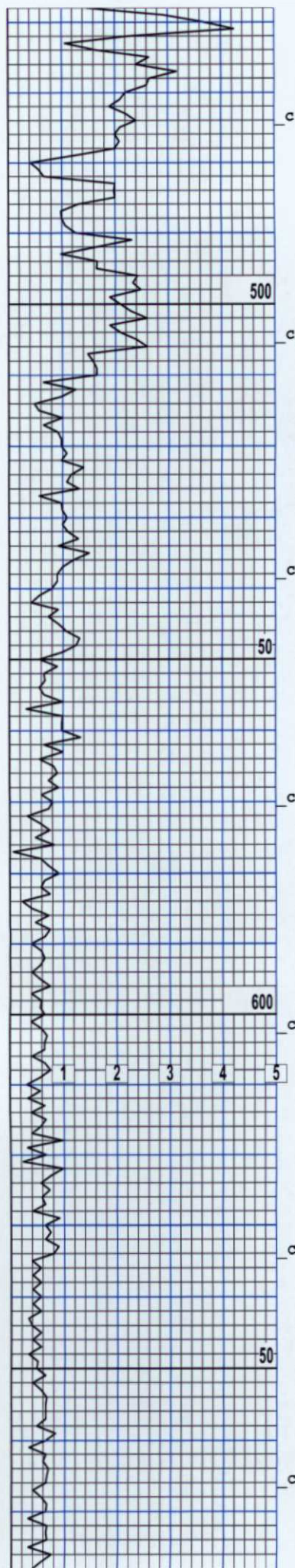
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REED 10063565 JETS:  
6-15'S IN AT 450'

WOB 13.4K  
RPM 56  
PP 827  
SPM 121

WT 9.8  
VIS 30  
PH 11

Surf Csg  
Landing Depth





SS: BFF, AMBER, CLR,  
TRNSL, VF TO FGRN, LSLY  
CONS W/ DOLO CMT, SBRND  
TO SBANG, MOD WLL SRTD,  
ARG IP

DOL: DKTN, LTBRN, TN  
MICXLN, FRM TO MOD FRM,  
CHLKY, ANHY IP, SHLY IP

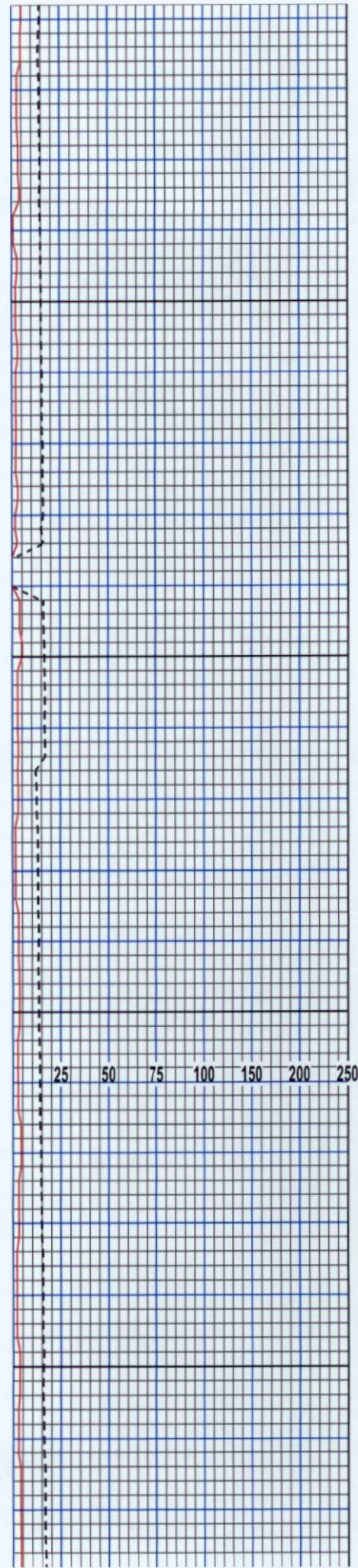
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FRM, DOLO IP, SHLY IP

SH: RST RD, RD, RD/BRN,  
SFT TO FRM, SBLKY, ETHY  
SLTY

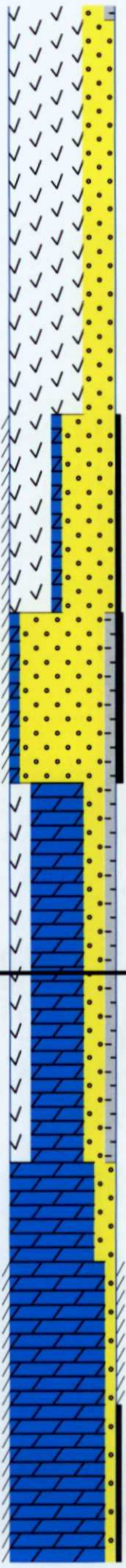
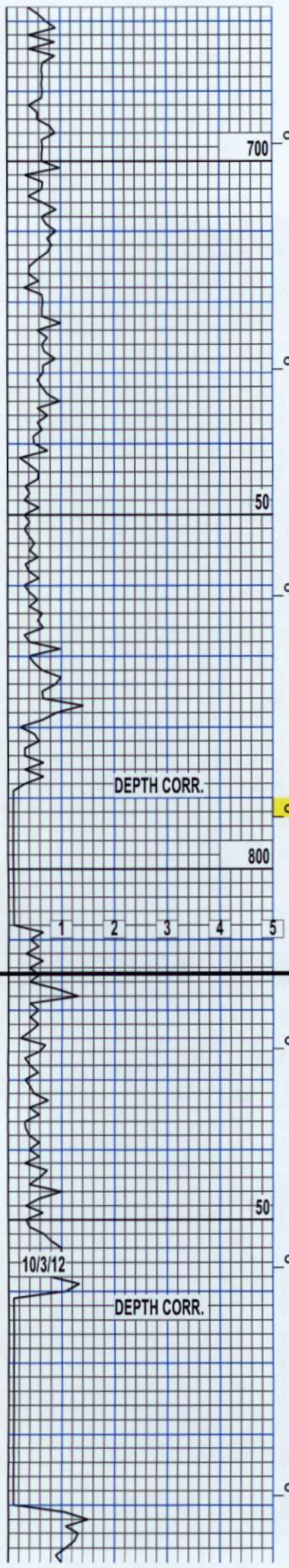
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CLR, OPQ, VFXLN, MOD  
FRM TO FRM, SHLY IP

DOL: DKTN, TN, LTTN,  
VF TO MICXLN, MOD FRM  
TO FRM, CHLKY, ANHY IP,  
SHLY IP, MSTLY CLN

SS: CLR, TRNSL, AMBER,  
VF TO FGRN, MSTLY CONS,  
SM LSLY CONS, SBRND TO  
SBANG, WLL SRTD, ARG IP







SS: CLR, TRNSL, AMBER,  
VF TO FGRN, MSTLY CONS  
W/ DOLO IP, SBRND TO  
SBANG, WLL SRTD, ARG  
IP

ANHY: OFF WHT, TRNSL,  
CLR, SL LTTN, VFXLN,  
MOD FRM TO FRM, DOLO  
IP, SNDY IP, CLN

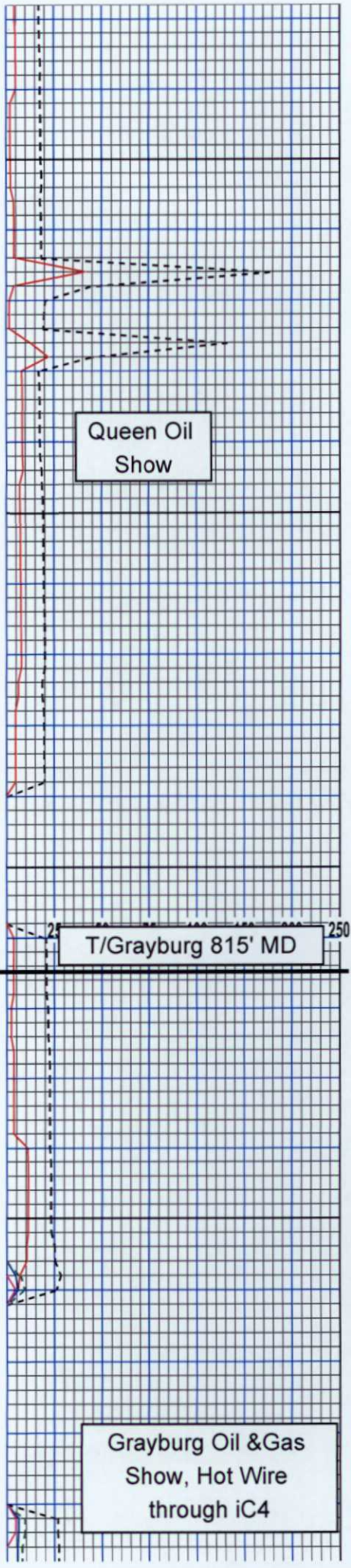
SS: CLR, TRNSL, AMBER,  
BFF, SM GRN, VFGRN,  
LSLY CONS W/ DOLO CMT,  
SBRND TO SBANG, ARG IP,  
20% YL FLUOR, PR SLI  
STRMNG YL CUT, PR RES  
RNG, TR DKBRN OIL STN

SS: CLR, TRNSL, AMBER,  
BFF, VFGRN, LSLY CONS W/  
DOLO CMT, SBRND TO  
SBANG, ARG IP, 30% YL  
FLUOR, PR SLI STRMNG YL  
CUT, PR RES RNG, TR  
DKBRN OIL STN

DOL: TN, LTTN, DKTN,  
VF TO MICXLN, FRM TO  
V FRM, SM CHLKY, ANHY  
IP, SNDY IP, SHLY IP,  
SM VGGY, TR FLUOR, TR  
CUT

DOL: LTBRN, DKTN, TN,  
LTTN, LTPNK, VFXLN,  
MOD FRM TO V FRM, SM  
CHLKY, ANHY IP, SNDY IP  
TR FLUOR, TR CUT

DOL: DKTN, TN, BFF,  
LTTN, OFF WHT, VF TO  
MICXLN, V FRM TO FRM,  
SM CHLKY, ANHY IP, SNDY  
IP, 20% YL FLUOR, PR  
FST STRMNG YL CUT, PR

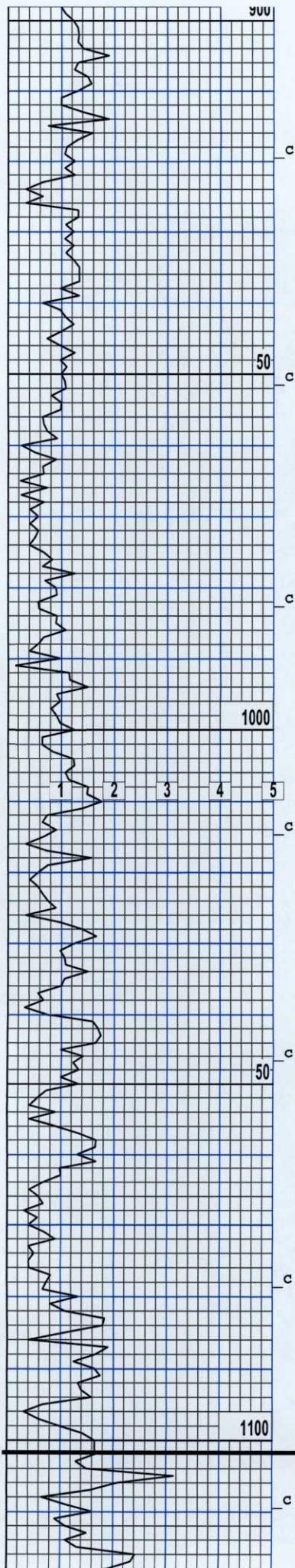


Queen Oil  
Show

T/Grayburg 815' MD

Grayburg Oil & Gas  
Show, Hot Wire  
through iC4





RES RNG, TR BLDNG GAS  
BUBBLE, TR DKBRN OIL  
STN

DOL: DKTN, TN, BFF,  
LTBRN, LTPNK, VF TO  
MICXLN, FRM TO V FRM,  
CHLKY IP, SNDY IP,  
ANHY IP, SHLY IP, 30%  
YL FLUOR, PR FST STRMNG  
YL CUT, PR RES RNG, TR  
GAS BUBBLE

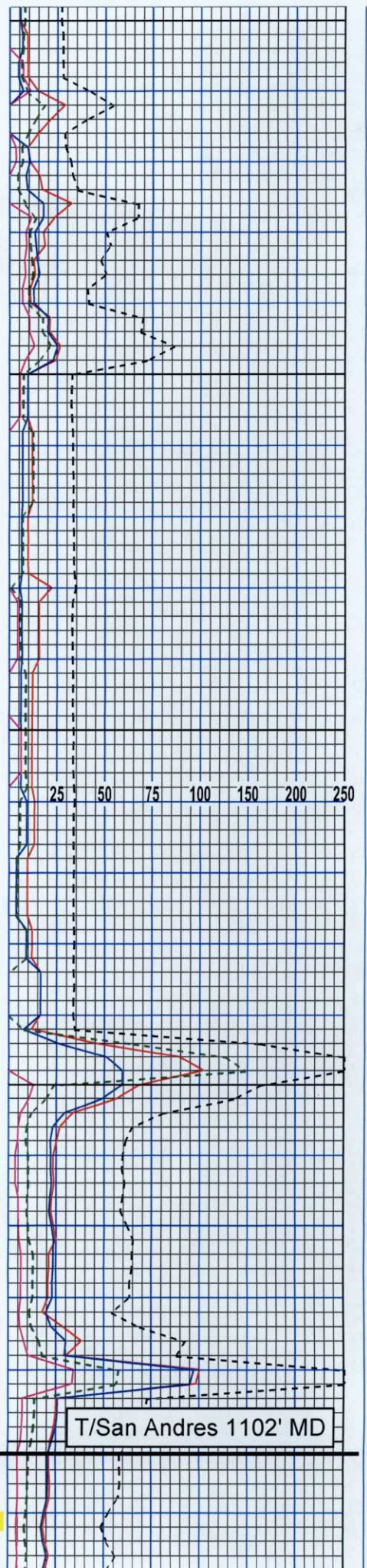
DOL: LTBRN, DKTN, TN,  
LTTN, BFF, GRY, OFF WHT  
VF TO FXLN, MOD FRM TO  
MOD HD, SM DNS, CHLKY  
IP, SNDY IP, TR FLUOR,  
TR CUT

SS: CLR, LTGRY, TRNSL,  
VF TO FGRN, WLL CONS/  
W DOLO CMT, SBRND TO  
SBANG, MOD SRTD, TR  
FOSS

ANHY: OFF WHT, TRNSL,  
FRSTD, VFXLN, FRM TO  
V FRM, DOLO IP

DOL: DKTN, TN, LTTN,  
OFF WHT, BFF, VF TO  
MICXLN, MOD FRM TO  
MOD HD, SM DNS, CHLKY  
IP, ANHY IP, SNDY IP,  
10% MED YL FLUOR, PR  
SLI STRMNG YL CUT, PR  
RES RNG, TR BLDNG GAS  
BUBBLE

DOL: LTTN, OFF WHT, TN,  
VF TO MICXLN, FRM TO  
V FRM, CHLKY IP, SUCRO  
IP, ANHY IP, SNDY IP,  
10% MED YL FLUOR, PR MED  
YL CUT, PR RES RNG



T/San Andres 1102' MD



# Lime Rock Resources

Terry 14C #2 Daily Drilling Report Sec 14 T18S R26E

8/28/2016

OCC Case No. 15487

LIME ROCK RESOURCES II-A

**Exhibit # 7**

Time Log of Operations						
Start Time	Dur (hr)	Cum Dur (hr)	End Time	Code 1	Code 2	Com
06:00	1.00	1.00	07:00	Run	Casing & Cement	Finished Running 10 Jts 13 3/8 - J55-54.50# Casing / Set Depth 425 ft.
07:00	0.50	1.50	07:30	Rig Down	Casing Crew	Circulate Casing / Rig Down Casing Crew.
07:30	1.00	2.50	08:30	Rig Up	Other	Rig Up Allied Cement Crew / Circulate Casing.
08:30	0.25	2.75	08:45	Safety meeting	.	Safety Meeting With Rig Crew & Cement Crew.
08:45	1.00	3.75	09:45	Cement	Casing	Cemented With Allied / Pumped 440 Sks Class C / Bumped Plug @ 09:36 Mst / Circulated 245 sks or 59 Bbl's to Surface / Plug Held.
09:45	5.00	8.75	14:45	Waiting on cement	.	WOC / Rig Down Cementers.
14:45	3.25	12.00	18:00	Install	Wellhead	Cut Off 13 3/8 Casing / Weld On 13 3/8 Wellhead.
18:00	5.00	17.00	23:00	Nipple up/down diverter system	.	Nipple Up 2 Spools & Hydrill / Build New Flow Nipple/Picked Up D.C Function Tested Hydrill.
23:00	3.00	20.00	02:00	Pick up	BHA	Picked Up Directional Tools / Tested & Scribed Tools / Installed MWD & Tested.
02:00	1.00	21.00	03:00	Trip In Hole	BHA	Tripped in Stds D.C's From Derrick / Tested casing 600 Psi 30 Minutes (OK)
03:00	1.00	22.00	04:00	Drill cement/drill out cement/drill float & shoe	.	Drill Shoe Track ( Tagged @ 378 ft)
04:00	2.00	24.00	06:00	Drilling	.	Drilled from 425 ft to 480 ft / Rop 27 ft hr / Full Returns

8/29/2016

Start Time	Dur (hr)	Cum Dur (hr)	End Time	Code 1	Code 2	Com
06:00	6.00	6.00	12:00	Drilling	.	Drilled From 480 ft to 743 ft/ Rop 43 Ft Hr / Full Returns / Had Oil Show In Samples @ 681 ft / Stop Drilling.
12:00	0.25	6.25	12:15	LUBRICATE RIG	.	Service Rig.
12:15	1.00	7.25	13:15	Circulate and Condition	.	Pumped 2 Hi Vis Sweeps to Surface.
13:15	1.00	8.25	14:15	Rig up	Casing Crew	Rig Up Bull Rogers Casing crew.
14:15	0.25	8.50	14:30	Safety meeting	.	Safety Meeting With Rig crew & Casing Crew.
14:30	2.00	10.50	16:30	Run	Casing & Cement	Ran 15 Jts 8 5/8 - 24#-J55 Casing Set Depth 630 ft.
16:30	1.00	11.50	17:30	Circulate and Condition	.	Circulate /Casing / Rig Down Casing Crew.
17:30	0.50	12.00	18:00	Condition mud & circulate	.	Circulate Casing.
18:00	1.00	13.00	19:00	Rig Up	Other	Rig Up Cement Crew.
19:00	0.25	13.25	19:15	Safety meeting	.	Safety Meeting With Rig Crew & Cement Crew.
19:15	0.25	13.50	19:30	Rig Up	Other	Install Cement Head.
19:30	1.00	14.50	20:30	Cement	Casing	Pumped 150 Sks C Lead + 200 sks C Tail / Bumped Plug @ 21:00 Mst / Plug Heeld / Circulated 86 Sks Or 37 Bbl's.
20:30	6.00	20.50	02:30	Waiting on cement	.	WOC & Clean Pits / Lift Hydrill Set Slips /Cut Off 8 5/8 Casing/Weld On Slip On Collar.
02:30	3.50	24.00	06:00	Nipple up BOP	.	Nipple Up 2K Bop & Choke System

# **Lime Rock Resources**

## **OCD Hearing Case 15487**

November 9, 2016

Review of cost and economics of one surface casing string versus a short surface and intermediate casing string for a 4,600' Yeso well.  
(2016 constant dollars, EIA price forecast)

Increased cost for one Yeso well per current OCD rule proposal: \$150,100 or 16%

**Added Cost:**

Rig, fuel, offsite cuttings disposal, water, mud, rentals	\$92,300
Supervision, trucking, pressure control, contract services	\$12,700
Cement services, bits, logging	\$25,600
Tangibles	\$19,500

Estimated development drilling well count for 1 year: 25

Total increased cost for 1 year: \$3,753,000

Estimated development drilling locations total: 381

Total Increased cost for life of project: \$57,188,000

Decrease (reduction) in annual well count based upon fixed budget: 4

Decrease (reduction) in lifetime well count based upon fixed budget: 61

Decrease in 15.2 year life of project: 2.4 years

Decrease in undiscounted cash flow due to annual well reduction: \$14,904,000

Decrease in undiscounted cash flow due to lifetime well reduction: \$227,286,000

Est decrease in NM tax and royalty revenue based on annual reduction: \$4,628,000

Est decrease in NM tax and royalty revenue based on lifetime reduction: \$70,577,000

As proposed, the new rule for running surface casings in the Roswell Artesian Water Basin does not offer an increased level of protection of public health and the environment, neither does it prevent the waste of oil and gas pursuant to the mandates of the Oil and Gas Act, it actually assures it.

OCC Case No. 15487

LIME ROCK RESOURCES II-A

**Exhibit # 8**