

DATE IN 10-26-04	SUSPENSE	ENGINEER Stagner	LOGGED IN 10-27-04	TYPE NSL	APP NO. P5em0430130853
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505



ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] **[NSP-Non-Standard Proration Unit]** **[SD-Simultaneous Dedication]**
[DHC-Downhole Commingling] **[CTB-Lease Commingling]** **[PLC-Pool/Lease Commingling]**
[PC-Pool Commingling] **[OLS - Off-Lease Storage]** **[OLM-Off-Lease Measurement]**
[WFX-Waterflood Expansion] **[PMX-Pressure Maintenance Expansion]**
[SWD-Salt Water Disposal] **[IPI-Injection Pressure Increase]**
[EOR-Qualified Enhanced Oil Recovery Certification] **[PPR-Positive Production Response]**

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication
☒ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify _____

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☒ Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners
 [B] ☐ Offset Operators, Leaseholders or Surface Owner
 [C] ☐ Application is One Which Requires Published Legal Notice
 [D] ☐ Notification and/or Concurrent Approval by BLM or SLO
 U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
 [E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,
 [F] ☐ Waivers are Attached

[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

JAMES BRUCE
 PO BOX 1056
 SANTA FE NM 87504

Signature

Title

Date

e-mail Address

2004 OCT 26 PM 3 59

JAMES BRUCE
ATTORNEY AT LAW

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SANTA FE, NEW MEXICO 87501

(505) 982-2043 (Phone)
(505) 660-6612 (Cell)
(505) 982-2151 (Fax)

jamesbruc@aol.com

October 26, 2004

Michael E. Stogner
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Dear Mr. Stogner:

Pursuant to Division Rule 104.F(2), Apache Corporation applies for administrative approval of an unorthodox oil well location for the following well:

<u>Well:</u>	Southland Royalty A Well No. 21
<u>Location:</u>	1310 feet FSL & 480 feet FEL
<u>Well Unit:</u>	SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 4, Township 21 South, Range 37 East, N.M.P.M., Lea County, New Mexico

The well will be drilled to test the Blinebry formation (Blinebry Oil & Gas Pool), Tubb formation (Tubb Oil & Gas Pool), and Drinkard formation (Drinkard Pool). The Blinebry Oil & Gas Pool and Tubb Oil & Gas Pool are prorated pools, and the special rules of each pool provide for (1) oil well units of 40 acres, (2) gas well units of 160 acres, and (3) a well unit may not be simultaneously dedicated to an oil well and a gas well. The Drinkard Pool is spaced on statewide rules.

The SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 4 will be **simultaneously** dedicated to the proposed well and to the Southland Royalty A Well Nos. 4 and 19 (Drinkard only in the No. 19), and applicant requests approval of the simultaneous dedication.

The application is based on geologic and engineering reasons. A complete discussion, with appropriate exhibits, is attached as Exhibit A. Existing wells in the SE $\frac{1}{4}$ of Section 4 are located in the approximate center of each quarter-quarter section. The reservoirs in the three pools are compartmentalized, and applicant believes that drilling the infill wells will recover reserves which will not be recovered by existing wells. This theory has been tested in applicant's Northeast Drinkard Unit, located to the east

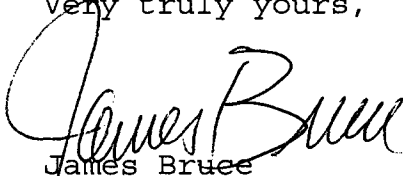
of the proposed well. In addition, applicant desires to complete in all three zones to enhance project economics.

Exhibit A contains a listing of the Blinebry/Tubb/Drinkard wells offsetting the proposed well. It shows that the existing wells are oil wells. Thus, the infill well will not violate the special pool rules for the Blinebry Oil & Gas Pool and Tubb Oil & Gas Pool.

Attached as Exhibit B is a land plat, highlighting the proposed well's location. The NE $\frac{1}{4}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$, and S $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 4 (and the NE $\frac{1}{4}$ of Section 9) are covered by a single fee lease, which has **common royalty, overriding royalty, and working interest ownership**. Therefore, there are no offset interest owners or adversely affected parties to notify of this application.

Please call me if you need any further information on this matter.

Very truly yours,

A handwritten signature in cursive script that reads "James Bruce". The signature is written in dark ink and is positioned above the printed name.

James Bruce

Attorney for Apache Corporation

Application of Apache Corporation for administrative
approval of an unorthodox well location:

40 acres – 1310' FSL & 430' FEL
Section 4, Township 21 South, Range 37 East, NMPM
Lea County, New Mexico

PRIMARY OBJECTIVES: Blinebry, Tubb, and Drinkard

In support:

1. Apache Corporation (Apache) is the operator of the proposed **Southland Royalty A #21** well (**Exhibit 1**).
2. The proposed unorthodox location is offset by the following wells which are, or have been productive from various combinations of the Blinebry, Tubb, and Drinkard (**Exhibit 2**).

				CUM B-T-D	DAILY B-T-D	CURRENT
OPER	WELL	LOC	RESRVR	O/G/W	O/G/W	POOL
Apache	Southland Royalty A #7	4-Q	B-D	287/4531/61	6/57/2	Blinebry Oil and Gas AND Drinkard
Apache	Southland Royalty A #4	4-X	B-T-D	282/4787/19	0/0/0	Penrose Skelly Grayburg
Apache	Southland Royalty A #19	4-X	DKRD	3/19/2	31/211/21	Drinkard
Apache	NEDU #301	3-P	B-T-D	54/1600/194	0/0/0	Eunice, Blinebry, Tubb, Drinkard, North
Apache	NEDU #302	3-U	B-T-D	471/4101/106	11/59/32	Eunice, Blinebry, Tubb, Drinkard, North
Apache	NEDU #332	3-U	B-T-D	17/161/99	6/109/50	Eunice, Blinebry, Tubb, Drinkard, North

MBO
MMCFG
MBW

BOPD
MCFGPD
BWPD

3. The proposed **Southland Royalty A #21** unorthodox Blinebry, Tubb, and Drinkard location of 1310' from south line and 430' from east line is predicated by geological and drainage considerations:

a. **Blinebry, Tubb and Drinkard**

The Blinebry, Tubb, and Drinkard Formations are members of the Yeso Group, Permian Leonardian in age. Portions of the Eunice area were



unitized by Shell in 1987 into the Northeast Drinkard Unit for waterflood operations. The unit is governed by the North Eunice Blinebry-Tubb-Drinkard Field Rules. The stratigraphic relationships, specifically top of Blinebry being 75' above the Blinebry Marker, and fluid contacts, specifically Blinebry GOC at -2255 and Drinkard OWC at -3225, employed by Shell in the unitization hearings have been used here.

All three formations are shallow marine carbonates, consisting primarily of dolomite. The Tubb has appreciable clastic content and the Drinkard becomes limey toward its base. Anhydrite can occur throughout the interval. Porosity and permeability are low. Distribution and continuity of individual zones of porosity and permeability are erratic. Wells are not capable of draining a full 40 Acre Spacing Unit. In fact, Apache's calculations indicate drainage area is approximately 20 Acres.

Structure is significant in that it controls the fluid distribution and amount of pay above and below the Blinebry and Drinkard oil-gas contacts.

Apache approached its evaluation by mapping log derived SoPhiH for each of the four major reservoirs (Blinebry Gas Cap, Blinebry Oil Leg, Tubb, and Drinkard). This analysis required modern neutron-density and resistivity logs for any well to be used. Many wells thus had to be excluded from analysis because of the vintage of downhole logs or lack of a full suite of logs. Sufficient new well control exists in and near the Northeast Drinkard Unit to allow this interpretation.

Reservoir engineering used the four SoPhiH maps to estimate drainage of each offsetting well in each reservoir. Recoverable reserves for this location are calculated as the volumetrics under a 20 A radius (less if the direct offsets were not capable of draining 20 A) with reduced reservoir pressure where drainage has occurred. Drainage offsetting this location is as follows:

SEC	LEASE NAME	WELL	PROD ZONE NAME	EUR			DRAINED ACRES
				OIL	WATER	GAS	
4	Southland Royalty A	7	BLINEBRY GAS CAP	2	1	234	8
4	Southland Royalty A	4	BLINEBRY GAS CAP	0	0	0	0
4	Southland Royalty A	19	BLINEBRY GAS CAP	6	6	612	20
3	Northeast Drinkard Unit	301	BLINEBRY GAS CAP	0	0	0	0
3	Northeast Drinkard Unit	302	BLINEBRY GAS CAP	0	0	0	0
4	Southland Royalty A	7	BLINEBRY OIL LEG	116	12	753	25
4	Southland Royalty A	4	BLINEBRY OIL LEG	67	5	436	15
4	Southland Royalty A	19	BLINEBRY OIL LEG	60	20	350	15
3	Northeast Drinkard Unit	301	BLINEBRY OIL LEG	0	0	0	0
3	Northeast Drinkard Unit	302	BLINEBRY OIL LEG	0	0	0	0

4	Southland Royalty A	7	TUBB	0	0	23	1
4	Southland Royalty A	4	TUBB	37	4	3663	165
4	Southland Royalty A	19	TUBB	6	6	612	20
3	Northeast Drinkard Unit	301	TUBB	5	0	476	20
3	Northeast Drinkard Unit	302	TUBB	0	0	0	0
4	Southland Royalty A	7	DRINKARD	81	9	530	27
4	Southland Royalty A	4	DRINKARD	176	10	1148	64
4	Southland Royalty A	19	DRINKARD	60	20	360	20
3	Northeast Drinkard Unit	301	DRINKARD	27	0	176	10
3	Northeast Drinkard Unit	302	DRINKARD	208	3	1352	85

Volumetrics for the proposed location are as follows:

		PROD ZONE NAME	RESERVOIR	DRAINAGE	EUR	
			PRESSURE	ACRES	OIL	GAS
SOUTHLAND ROYALTY A	21	BLINEBRY GAS CAP	1500	20	3	256
		BLINEBRY OIL LEG	1900	20	79	512
		TUBB	700	20	1	46
		DRINKARD	500	20	0	0
		TOTAL			82	814

b. Blinebry Gas Cap (Exhibit 3)

Thickness of the Blinebry Gas Cap is partially related to the subsea top of the Blinebry. The higher the top, the thicker the gas cap can be. Using a 5% threshold, porosity averages 10.5% and water saturation averages 29% in 92 wells selected for analysis. SoPhiH at this location is expected to be 3.6'.

c. Blinebry Oil Leg (Exhibit 4)

Thickness of the Blinebry Leg is partially related to the subsea top of the Blinebry, the higher the top, the thinner the oil leg might be. Using a 5% threshold, porosity averages 8.7% and water saturation averages 32% in 92 wells selected for analysis. SoPhiH at this location is expected to be 6.5'.

d. Tubb (Exhibit 5)

The Tubb is generally considered to be a gas reservoir. No gas-oil or gas water contact has been suggested. Using a 5% porosity threshold and a 50 APIU Gamma ray threshold because of the greater amount of clastic material, porosity averages 8.4% and water saturation averages 30% in 91 wells selected for analysis. SoPhiH at this location is expected to be 5.2'.

e. Drinkard (Exhibit 6)

The thickness of the Drinkard is also related to its subsea position, the higher the top, it can be. Using a 5% threshold, porosity averages 9.1% and water saturation averages 25% in 82 wells selected for analysis. SoPhiH at this location is expected to be 6.0'.

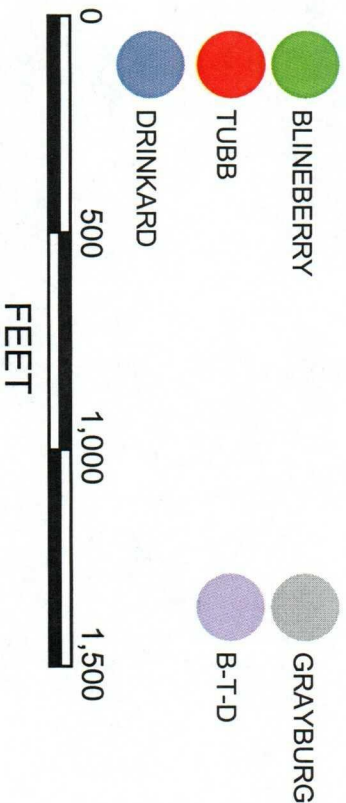
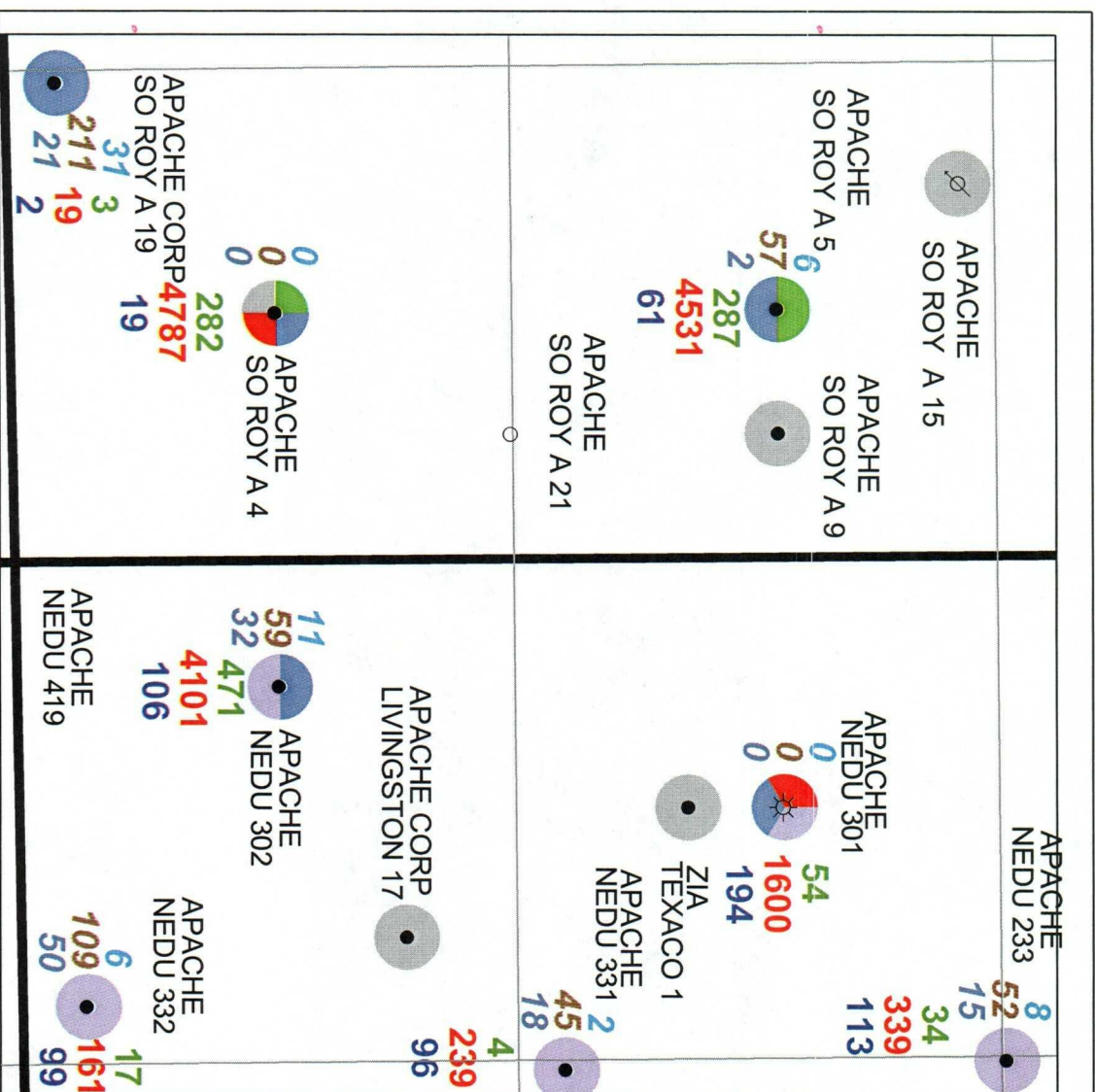
f. Drainage

The proposed **Southland Royalty A #21** location is designed to approximate a 20 Acre infill location. It is approximately equidistant from the Southland Royalty A #5 and #4 wells and greater than the standard 330' off the section line.

4. Notice

a. Apache is the operator of the Blinebry, Tubb, and Drinkard wells toward which the proposed well will encroach, being the Southland Royalty A #5 and #19, and is also the only working interest owner. Additionally, all three reservoirs are contained within one oil and gas lease (Southland Royalty A) with common working and revenue interest owners. Therefore, there are no adversely affected parties and no one was notified of the application.

5. Approval of this application will afford the interest owners in this spacing unit an opportunity to recover oil and gas which would not otherwise be recovered and to do so without violating correlative rights.




- WELL SYMBOLS**
- Location Only
 - Oil Well
 - ☀ Gas Well
 - ⊖ Dry

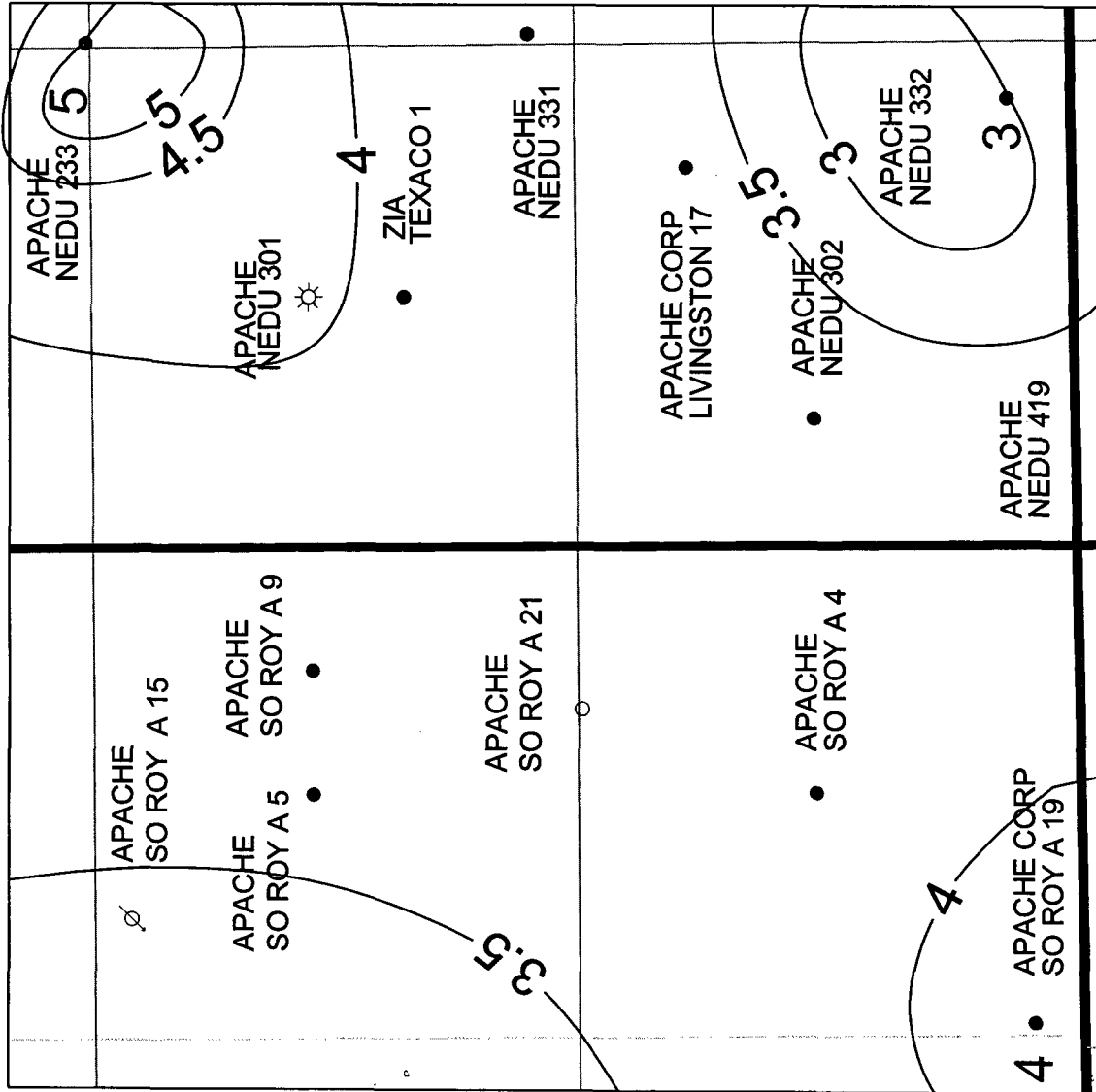
POSTED WELL DATA

CURRENT BOPD
CURRENT MCFD
CURRENT BWPD

● OPERATOR WELL LABEL

MBO
MMCFG
MBW

 <p>APACHE CORPORATION CENTRAL REGION</p>	
<p>TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224</p>	
<p>SO. ROY. A #21</p>	
<p>SEC 4-T21S-R37E LEA COUNTY, NEW MEXICO</p>	
<p>EXHIBIT 2</p>	
<p>WELL INFORMATION</p>	
DATE: 7/22/04	DWG: PROD (CURTIS)OCD-NM2004.BTD)



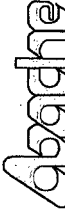
GAMMA RAY LTE 40 APIU
 XPHI GTE 5%
 SW LTE 50%

WELL SYMBOLS

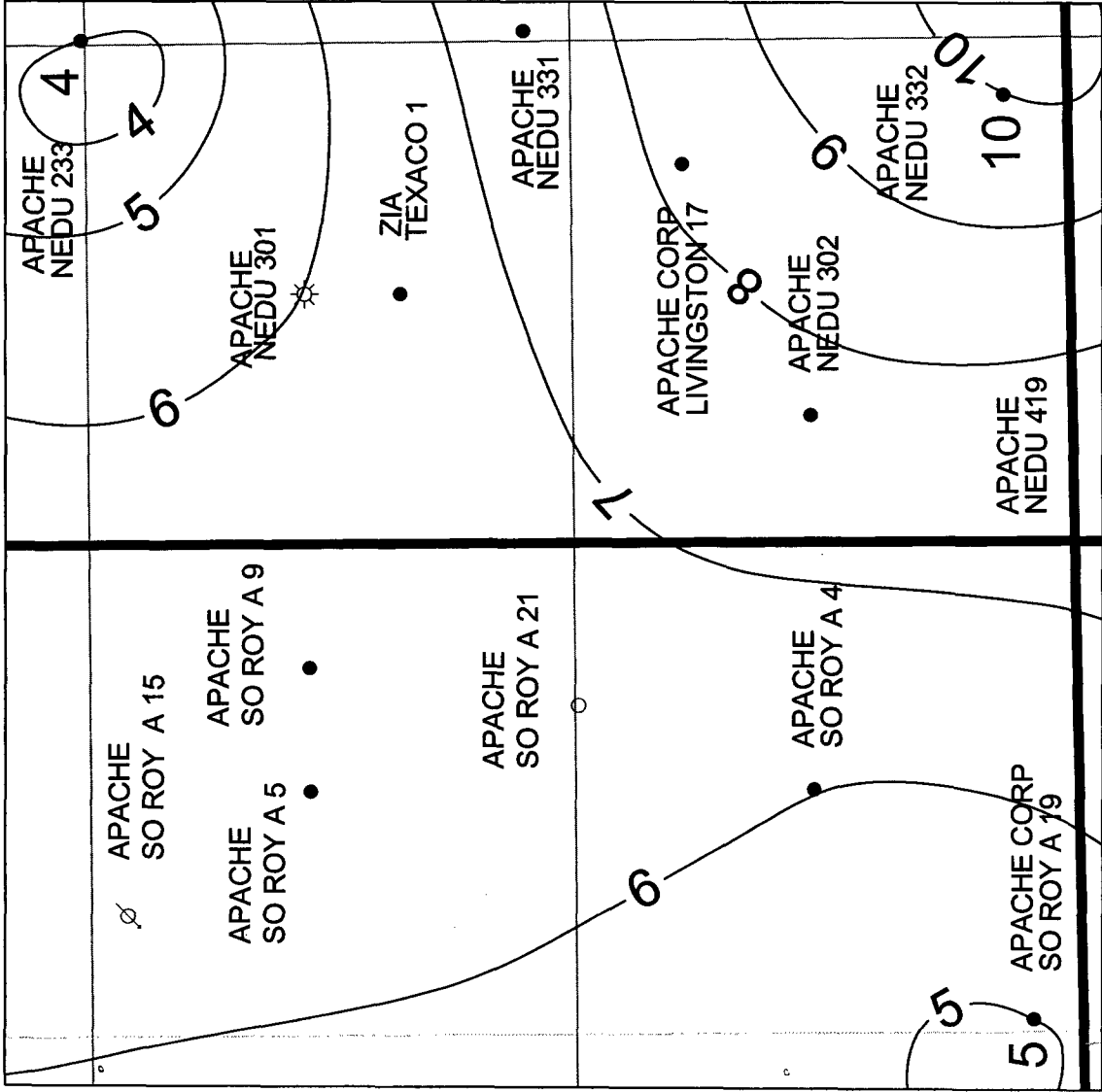
- Location Only
- Oil Well
- ☼ Gas Well
- ⊖ Dry

POSTED WELL DATA

BLBY GAS CAP
 SOPHIH ● OPERATOR
 WELL LABEL

 TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224 CORPORATION CENTRAL REGION	
SO. ROY. A #21	
SEC 4-T218-R37E LEA COUNTY, NEW MEXICO	
EXHIBIT 3	
BLBY GAS CAP SOPHIH	
DATE: 7/22/04	DWG: PROD (CURTIS/OCD-NM/2004 LTD)






GAMMA RAY LTE 40 APIU
 XPHI GTE 5%
 SW LTE 50%

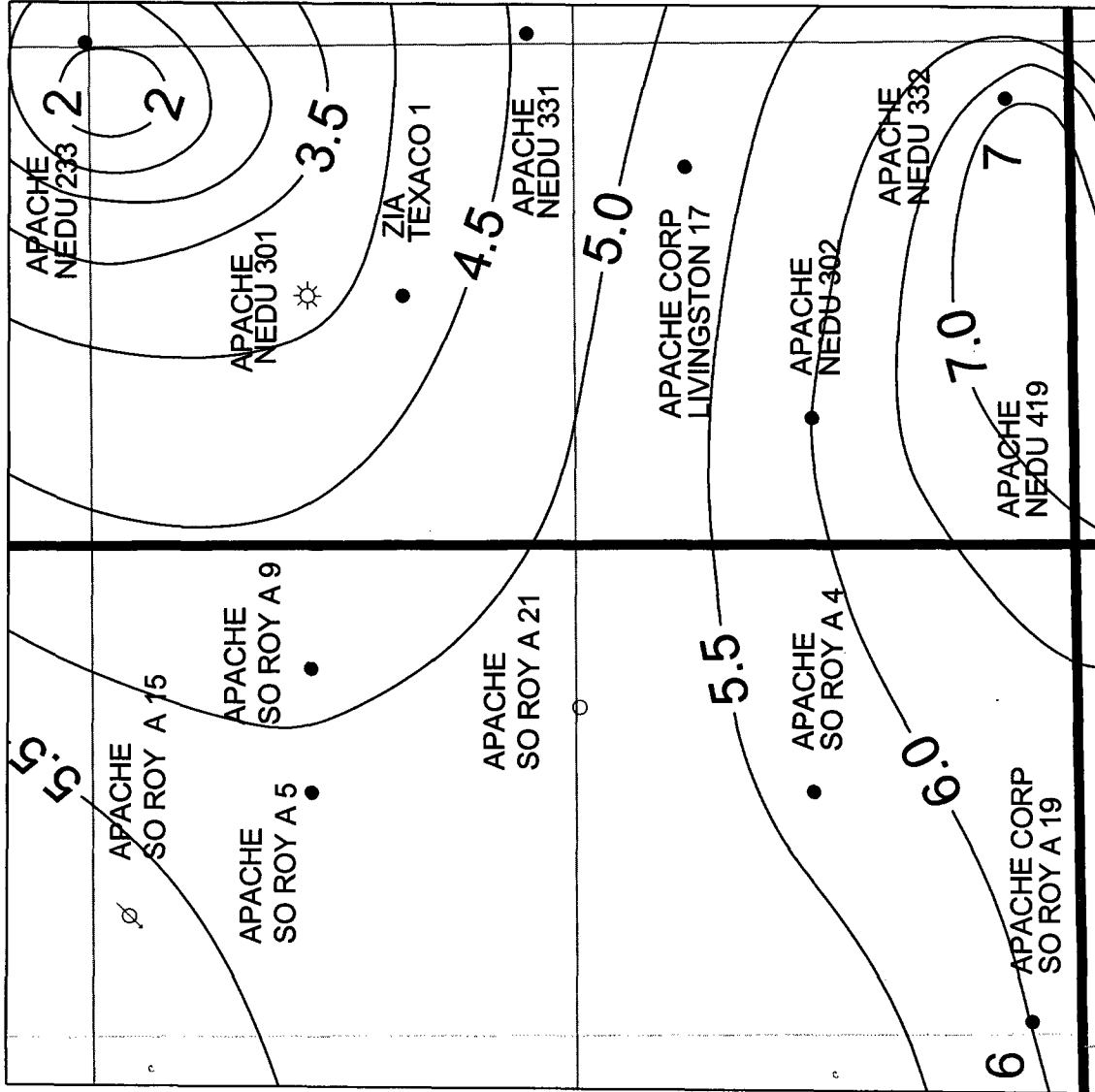
WELL SYMBOLS

- Location Only
- Oil Well
- ☼ Gas Well
- ⊖ Dry

POSTED WELL DATA

BLBY OIL LEG
 SOPHIH ● OPERATOR
 WELL LABEL

 TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224 CORPORATION CENTRAL REGION	
SO. ROY. A #21	
SEC 4-T218-R37E LEA COUNTY, NEW MEXICO	
EXHIBIT 4	
BLBY OIL LEG SOPHIH	
DATE: 7/22/04	DWG: PROD (CURTIS/OCD-NM2004 LTD)




GAMMA RAY LTE 50 APIU
 XPHI GTE 5%
 SW LTE 50%

WELL SYMBOLS

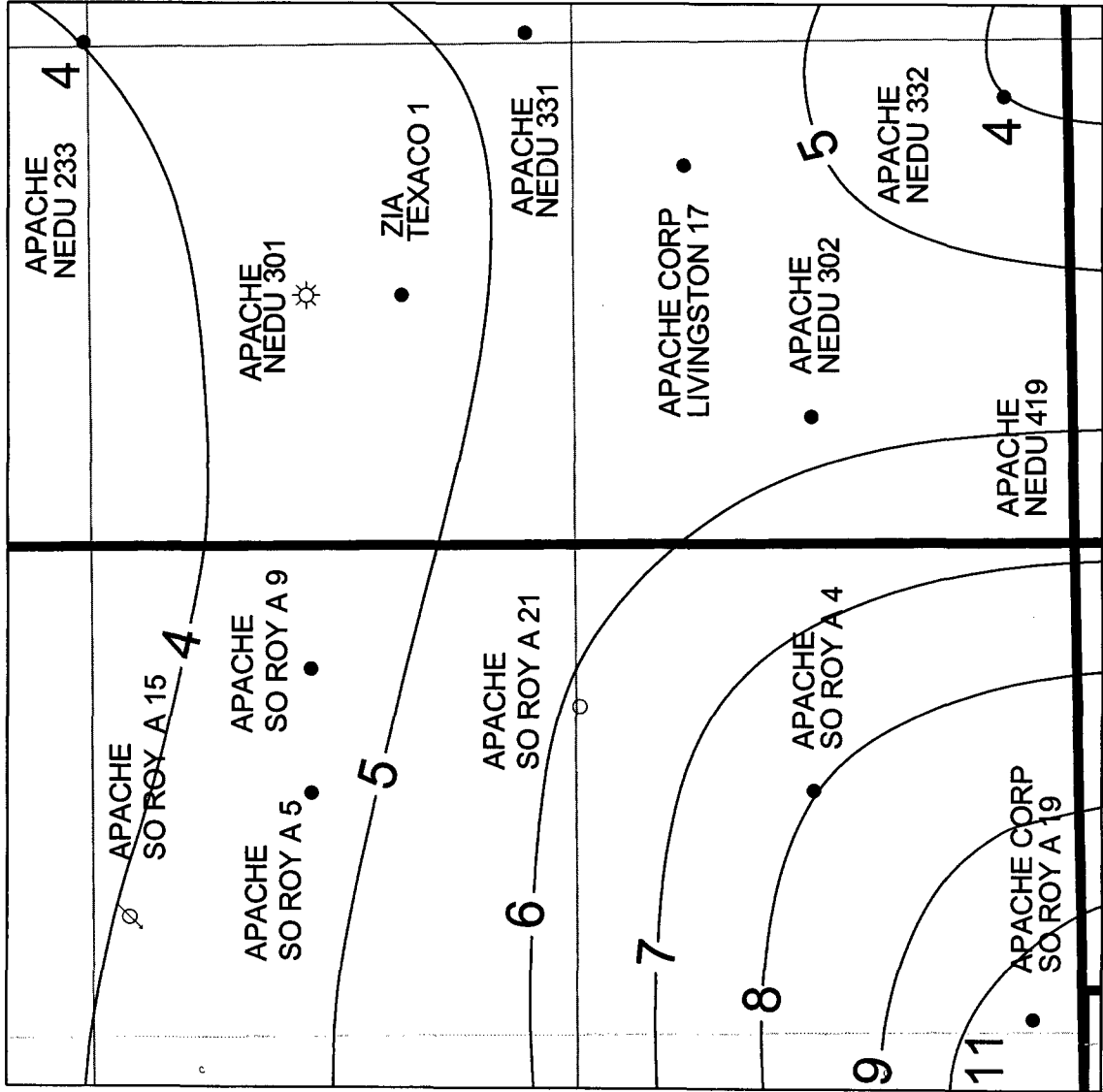
- Location Only
- Oil Well
- ☼ Gas Well
- ⊖ Dry

POSTED WELL DATA

TUBB
 SOPHIH ● OPERATOR
 WELL LABEL

 TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74138-4224 CORPORATION CENTRAL REGION	
SO. ROY. A #21	
SEC 4-T218-R37E LEA COUNTY, NEW MEXICO	
EXHIBIT 5	
TUBB SOPHIH	
DATE: 7/22/04	DWG: PROD (CURTIS/OCD-NM2004 BTD)






GAMMA RAY LTE 40 APIU
 XPHI GTE 5%
 SW LTE 50%

WELL SYMBOLS

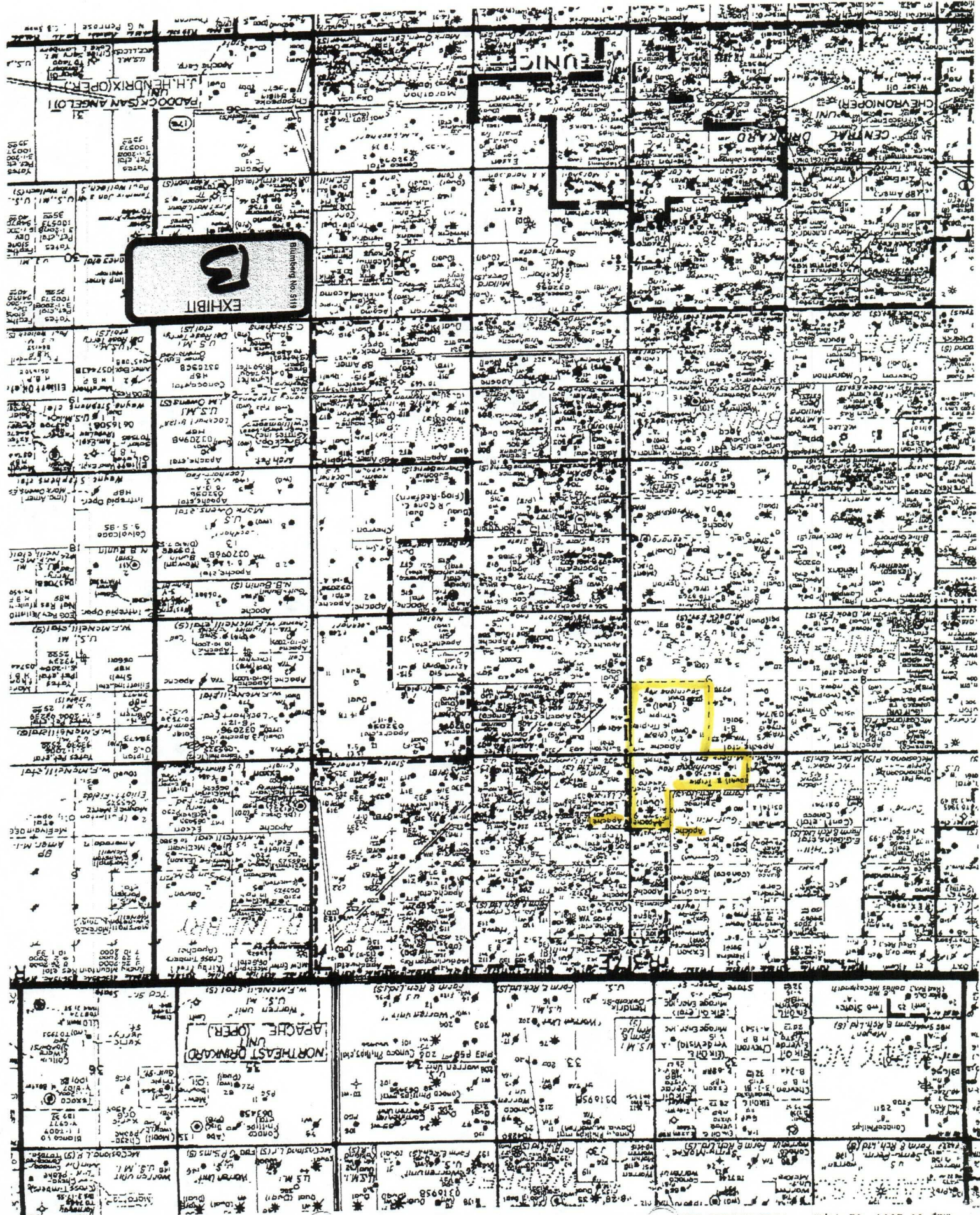
- Location Only
- Oil Well
- ☼ Gas Well
- ⊙ Dry

POSTED WELL DATA

DRKD
SOPHIH ● OPERATOR
 WELL LABEL

 CORPORATION CENTRAL REGION	TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224
SO. ROY. A #21	
SEC 4-T21B-R37E LEA COUNTY, NEW MEXICO	
EXHIBIT 6 DRKD SOPHIH	
DATE: 7/22/04	DWG: PROD (CURTIS/OCD-NM2004 LTD)





Blanching No. 5118
EXHIBIT

Stogner, Michael

From: Stogner, Michael
Sent: Friday, December 03, 2004 8:13 AM
To: 'JamesBruc@aol.com'
Cc: Ezeanyim, Richard
Subject: RE: Apache Corp./NSL applications in 21S-37E

Your request is duly noted and I will make every effort to accommodate Apache's needs.

-----Original Message-----

From: JamesBruc@aol.com [mailto:JamesBruc@aol.com]
Sent: Friday, December 03, 2004 7:41 AM
To: mstogner@state.nm.us
Subject: Apache Corp./NSL applications in 21S-37E

Mike: I know you have approximately one billion other things on your desk, but Apache is really bothering me for another NSL approval, so they can drill this month. I think there are three pending. As always, anything you can do will help. Thanks.

If you want to call and scream at me to relieve the pressure, I'm at your service (982-2043).

Jim

This email has been scanned by the MessageLabs Email Security System.
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