

DATE IN 6.9.05	SUSPENSE 6/24/2005	ENGINEER C. Hanach	LOGGED IN 6.10.05	TYPE PMX	APP NO. BEN0516130367
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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



**RECEIVED**

JUN - 9 2005

**ADMINISTRATIVE APPLICATION CHECKLIST** OIL CONSERVATION  
 DIVISION

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

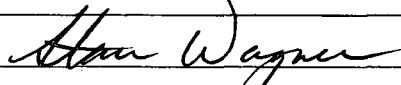
- [3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

- [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.

Stan Wagner		Regulatory Analyst	6/6/05
Print or Type Name	Signature	Title	Date
		Stan_Wagner@eogresources.com	
		e-mail Address	

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: Secondary Recovery ☒ Pressure Maintenance Disposal ☐ Storage  
Application qualifies for administrative approval? ☒ Yes ☐ No
- II. OPERATOR: EOG Resources, Inc.  
ADDRESS: P.O. Box 2267 Midland, TX 79702  
CONTACT PARTY: Stan Wagner PHONE: 432 686 3689
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.  
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☒ Yes ☐ No  
If yes, give the Division order number authorizing the project: R-11388, R-11389
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
  2. Whether the system is open or closed;
  3. Proposed average and maximum injection pressure;
  4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
  5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- \*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- \*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- \*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- NAME: Stan Wagner TITLE: Regulatory Analyst  
SIGNATURE:  DATE: 5/24/05  
E-MAIL ADDRESS: stan.wagner@eogresources.com
- \* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: submitted January 1994



**EOG Resources, Inc.**  
4000 North Big Spring, Suite 500  
Midland, TX 79705  
(915) 686-3600

May 24, 2005

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Mark McCloy  
P.O. Box 1076  
Jal, New Mexico 88252

Re: Application of EOG Resources, Inc. for administrative approval of  
Expansion of its Red Hills North Unit Pressure Maintenance Project, Lea  
County, New Mexico.

Ladies and Gentlemen:

Enclosed please find a copy of the application of EOG Resources, Inc. (Oil Conservation Division Form C-108) in the above-referenced matter for approval of the expansion of its Red Hills North Unit Pressure Maintenance Project with the addition of two injection wells: the Red Hills North Unit Well No. 801 located 1827 feet from the North line and 660 feet from the West line of Section 18, and the Red Hills North Unit Well No. 904 located 1000 feet from the North line and 1700 feet from the West line of Section 17, both in Township 25 South, Range 34 East, NMPM, Lea County, New Mexico. EOG proposes to re-inject water produced from the Bone Spring formation into the unitized interval of the Bone Spring formation in the Red Hills North Unit Area at measured depths of 12510 feet to 14480 feet in Well No. 801 and 12707 feet to 13200 feet in Well No. 904. This injection will occur with a maximum injection pressure of 3700 psi and a maximum injection rate of 3000 barrels of water per day as fully described in the application.

This application is provided to you as owner of the surface of the land upon which each of the subject wells is located. If you object to this application your objection must be filed in writing with the Santa Fe Office of the Oil Conservation Division located at 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505 within 15 days of the date of this letter. If there is no objection, the Division Director may approve this application.

Sincerely,

EOG RESOURCES, INC.

Stan Wagner  
Regulatory Analyst



**EOG Resources, Inc.**  
4000 North Big Spring, Suite 500  
Midland, TX 79705  
(915) 686-3600

May 24, 2005

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Bureau of Land Management  
2909 West 2<sup>nd</sup> Street  
Roswell, New Mexico 88201

Re: Application of EOG Resources, Inc. for administrative approval of  
Expansion of its Red Hills North Unit Pressure Maintenance Project, Lea  
County, New Mexico.

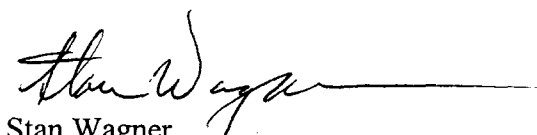
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Sincerely,

EOG RESOURCES, INC.

  
Stan Wagner  
Regulatory Analyst

UNITED STATES POSTAL SERVICE

MIDLAND/ODESSA TX 79705/27/05

First-Class Mail  
Postage & Fees Paid  
USPS : 23  
Permit No. G-10

- Sender: Please print your name, address, and ZIP+4 in this box •

EOG Resources, Inc.  
Attn: Stan Wagner  
P.O. Box 2267  
Midland, TX 79702



## SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

## 1. Article Addressed to:

Bureau of Land Management  
2909 West 2nd St.,  
Roswell, NM 88201

## 2. Article Number

(Transfer from service label)

7000 0520 0020 9193 9045

Form 3811, August 2001

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

X

☐ Agent☐ Addressee

## B. Received by (Printed Name)

## C. Date of Delivery

05/26

D. Is delivery address different from item 1? ☐ YesIf YES, enter delivery address below: ☐ No

## 3. Service Type

☒ Certified Mail☐ Express Mail☐ Registered☐ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

## 4. Restricted Delivery? (Extra Fee)

☐ Yes

Domestic Return Receipt

102595-02-M-1540

SERVICE



First-Class Mail  
Postage & Fees Paid  
USPS  
Permit No. G-10

- Sender: Please print your name, address, and ZIP+4 in this box •

EOG Resources, Inc.  
Attn: Stan Wagner  
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## 1. Article Addressed to:

Mr. Mark McCloy

P.O. Box 1076

Jal, New Mexico 88252

## 2. Article Number

(Transfer from service label)

7000 0520 0020 9193 9038

## COMPLETE THIS SECTION ON DELIVERY

## A. Signature

X Mark McCloy

☐ Agent☐ Addressee

## B. Received by (Printed Name)

MARK McCloy

## C. Date of Delivery

D. Is delivery address different from item 1? ☐ YesIf YES, enter delivery address below: ☐ No

## 3. Service Type

☒ Certified Mail☐ Express Mail☐ Registered☐ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

## 4. Restricted Delivery? (Extra Fee)

☐ Yes

AFFIDAVIT OF PUBLICATION

State of New Mexico,  
County of Lea.

I, KATHI BEARDEN

Publisher

of the Hobbs News-Sun, a  
newspaper published at  
Hobbs, New Mexico, do solemnly  
swear that the clipping attached  
hereto was published once a  
week in the regular and entire  
issue of said paper, and not a  
supplement thereof for a period.

of 1  
\_\_\_\_\_ weeks.

Beginning with the issue dated

May 24 2005  
and ending with the issue dated

May 24 2005

Kathi Bearden

Publisher

Sworn and subscribed to before

me this 24th day of

May 2005

Dora Montz

Notary Public.

My Commission expires  
February 07, 2009  
(Seal)



OFFICIAL SEAL  
DORA MONTZ  
NOTARY PUBLIC  
STATE OF NEW MEXICO

My Commission Expires: \_\_\_\_\_

This newspaper is duly qualified  
to publish legal notices or adver-  
tisements within the meaning of  
Section 3, Chapter 167, Laws of  
1937, and payment of fees for  
said publication has been made.

LEGAL NOTICE  
May 24, 2005

EOG Resources, Inc., P.O. Box 2267, Midland, TX 79702, has filed form C-108 (Applica-  
tion for Authorization To Inject) with the New Mexico Oil Conservation Division seeking ad-  
ministrative approval for a pressure maintenance water injection well.

The Red Hills North Unit No. 801 is located 1827' FNL & 660' FWL, Section 18, Town-  
ship 25 South, Range 34 East, Lea County, New Mexico. Injection water will be sourced  
from area wells producing from the Bone Spring formation. The injection water will be in-  
jected into the Bone Spring formation at a measured depth of 12510' - 14480', a maximum  
surface pressure of 3000 psi, and a maximum rate of 1000 BWPD.

The Red Hills North Unit No. 904 is located 1000' FNL & 1700' FWL, Section 17, Town-  
ship 25 South, Range 34 East, Lea County, New Mexico. Injection water will be sourced  
from area wells producing from the Bone Spring formation. The injection water will be in-  
jected into the Bone Spring formation at a measured depth of 12707' - 13200', a maximum  
surface pressure of 3000 psi, and a maximum rate of 1000 BWPD.

All interested parties opposing the action must file objections or requests for hearing with  
the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
within 15 days. Additional information may be obtained by contacting Stan Wagner at P.O.  
Box 2267, Midland, TX 79702, or 432-686-3600.  
#21548

01105308000

02576476

EOG Resources  
4000 N. Big Springs  
MIDLAND, TX 79702

## INJECTION WELL DATA SHEET

OPERATOR: EOG Resources, Inc.

30-025-36237

WELL NAME &amp; NUMBER: Red Hills North Unit No. 904

WELL LOCATION: 1000' FNL &amp; 1700' FWL

C

FOOTAGE LOCATION

17

SECTION

25S

TOWNSHIP

34E

RANGE

WELLBORE SCHEMATICWELL CONSTRUCTION DATASurface Casing

Bit size 17 1/2" Casing size 17 1/2" Hole Size: 17 1/2" Casing Size: 11 3/8" 670'

12 1/4" 9 5/8" Cemented with: 575 sx. or ft<sup>3</sup>

Top of Cement: Surface Method Determined: CIRC

Intermediate Casing

Hole Size: 12 1/4" Casing Size: 9 5/8"

Cemented with: 1490 sx. or ft<sup>3</sup>

Top of Cement: Surface Method Determined: CIRC

Production Casing

Hole Size: 8 3/4" Casing Size: 7"

Cemented with: 1015 sx. or ft<sup>3</sup>

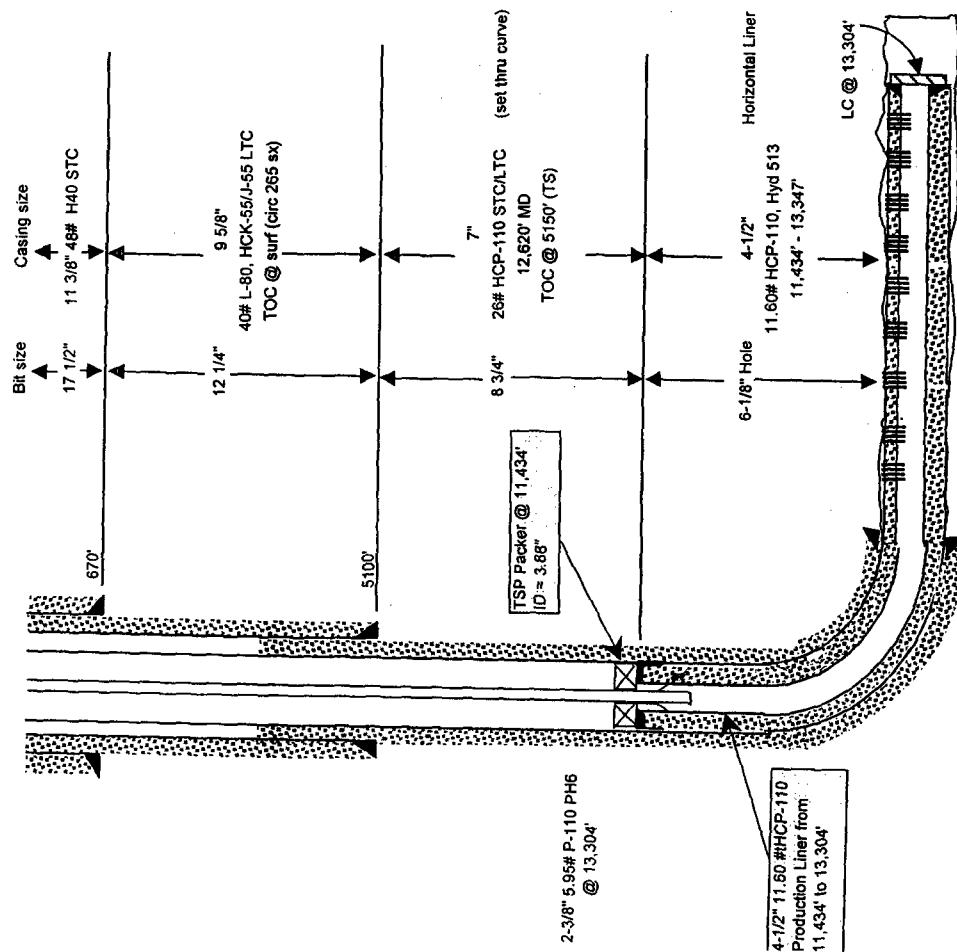
Top of Cement: 5150 Method Determined: Temp Survey

Total Depth: 13849 MD; 12254 VD

Injection Interval

TD 13,849' 12707' feet to 13200' MD

(Perforated or Open Hole; indicate which)



6 1/8" Lateral from KOP 11,912' MD to 13,849' MD. Gross lateral length of 1,937'.  
Perfs: 12,709' (11 holes), 12,939' (13 holes), 13,200' (27 holes) = 51 holes @ 60° phasing.

INJECTION WELL DATA SHEET

Tubing Size: 2 7/8 Lining Material: Plastic Coated

Type of Packer: Halliburton PLS 7" 26#

Packer Setting Depth: +/- 11380'

Other Type of Tubing/Casing Seal (if applicable): \_\_\_\_\_

Additional Data

1. Is this a new well drilled for injection? Yes X No  
 If no, for what purpose was the well originally drilled? Production
2. Name of the Injection Formation: Bone Spring
3. Name of Field or Pool (if applicable): Red Hills; Bone Spring
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. No
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: \_\_\_\_\_  
Next Higher : Delaware 5183' - 9260'  
Next Lower : Wolfcamp 12284' - 13800'

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

N.M. Oil Cons. Division  
1625 N. French Dr.  
Hobbs, NM 88240

FORM APPROVED  
OMB NO. 1004-0137  
Expires: November 30, 2000

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Dry <input type="checkbox"/> Other		5. Lease Serial No. <b>NM94108, NM24490</b>	
b. Type of Completion: <input checked="" type="checkbox"/> New Well <input type="checkbox"/> Work Over <input type="checkbox"/> Deepen <input type="checkbox"/> Plug Back <input type="checkbox"/> Diff. Resvr. Other		6. If Indian, Allottee or Tribe Name	
2. Name of Operator <b>EOG Resources Inc.</b>		7. Unit or CA Agreement Name and No. <b>Red Hills North Unit</b>	
3. Address <b>P.O. Box 2267 Midland TX 79702</b>		8. Lease Name and Well No. <b>Red Hills North Unit 904</b>	
3a. Phone No. (include area code) <b>432 686 3689</b>		9. API Well No. <b>30-025-36237</b>	
4. Location of Well (Report location clearly and in accordance with Federal requirements)* At surface <b>1000' FNL &amp; 1700' FNL, U/L C, Sec 17, T25S, R34E</b> At top prod. interval reported below At total depth <b>1088N 114W</b> <b>332' FNL &amp; 112' FNL, U/L D</b>		10. Field and Pool, or Exploratory <b>Red Hills, Bone Spring</b>	
		11. Sec., T., R., M., or Block and Survey or Area <b>Sec 17, T25S, R34E</b>	
		12. County or Parish <b>Lea</b>	
		13. State <b>NM</b>	
14. Date Spudded <b>11/5/03</b>	15. Date T.D. Reached <b>12/30/03</b>	16. Date Completed <input type="checkbox"/> D & A <input checked="" type="checkbox"/> Ready to Prod. <b>1/30/04</b>	
17. Elevations (DF, RKB, RT, GL)* <b>3337 GL</b>			

18. Total Depth: MD TVD <b>13849</b> <b>12254</b>	19. Plug Back T.D.: MD TVD	20. Depth Bridge Plug Set: MD TVD
21. Type Electric & Other Mechanical Logs Run (Submit copy of each)		22. Was well cored? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Submit analysis) Was DST run <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Submit report) Directional Survey? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (Submit copy)

23. Casing and Liner Record (Report all strings set in well)									
Hole Size	Size/Grade	Wt. (#ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sks. & Type of Cement	Slurry Vol (BBL)	Cement Top*	Amount Pulled
17 1/2	11 3/8	48		670		575 C		Surface	
12 1/4	9 5/8	40		5100		1490 C		Surface	
8 3/4	7	26		12620		1015 H		5150 TS	

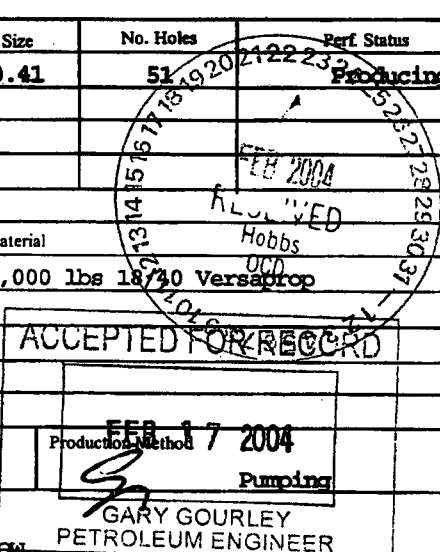
24. Tubing Record								
Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2 7/8	11365							

25. Producing Intervals			26. Perforation Record			
Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) 3rd Bone Spring	12707		12707-13200	0.41	51	Producing
B)						
C)						
D)						

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.	
Depth Interval	Amount and Type of Material
12707-13200	Frac w/ 116,500 gal SpectraFrac G-2500 + 150,000 lbs 18/40 Versaprop

28. Production - Interval A									
Date First Produced <b>1/30/04</b>	Test Date <b>2/7/04</b>	Hours Tested <b>24</b>	Test Production →	Oil BBL <b>134</b>	Gas MCF <b>209</b>	Water BBL <b>169</b>	Oil Gravity	Gas Gravity	Production Method <b>Pumping</b>
Choke Size	Tbg. Press. Flwg. SI <b>200</b>	Csg. Press.	24 Hr. →	Oil BBL	Gas MCF	Water BBL	Gas: Oil Ratio <b>1559</b>	Well Status <b>POW</b>	

28a. Production-Interval B									
Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. →	Oil BBL	Gas MCF	Water BBL	Gas: Oil Ratio	Well Status	



APPLICATION FOR AUTHORIZATION TO INJECT  
RED HILLS NORTH UNIT NO. 904

VII. PROPOSED OPERATION

- (1) Proposed Average Daily Rate and Volume : 1000 BPD  
Proposed Maximum Daily Rate and Volume: 3000 BPD
- (2) Open or Closed System: Closed
- (3) Proposed Average Injection Surface Pressure: 3000 psi  
Proposed Maximum Injection Surface Pressure: 3700 psi  
Note: Original Bone Spring formation BHP 9500 psi.
- (4) Produced Bone Spring Formation Water: 250-300 BPD from  
Red Hills Field (Bone Spring) (see attached analysis)
- (5) N/A

VIII. GEOLOGIC DATA ON INJECTION ZONE

Injection Zone: 3<sup>rd</sup> Bone Spring  
Lithologic Detail: Fine grain sandstone  
Geological Name: 3<sup>rd</sup> Bone Spring  
Thickness: Bone Spring – 3204’  
3<sup>rd</sup> Bone Spring – 384’  
Depth: Bone Spring 9260’ to 12284’  
3<sup>rd</sup> Bone Spring 11900’ to 12284’  
Underground Sources of Drinking Water:  
Geological Name: Triassic  
Base: 600’

IX. PROPOSED STIMULATION

None at this time

X. LOGGING AND TESTING DATA ON INJECTION WELL

Logs have previously been submitted

XI. CHEMICAL ANALYSIS OF WATER FROM FRESH WATER WELLS  
WITHIN ONE MILE OF THE INJECTION WELL

A review of the State Engineers records show no fresh water  
wells within one mile of the injection well.

XII. Available geologic and engineering data has been examined and no evidence has  
been found of open faults or any other hydrologic connection between the  
injection zone and any underground source of drinking water.

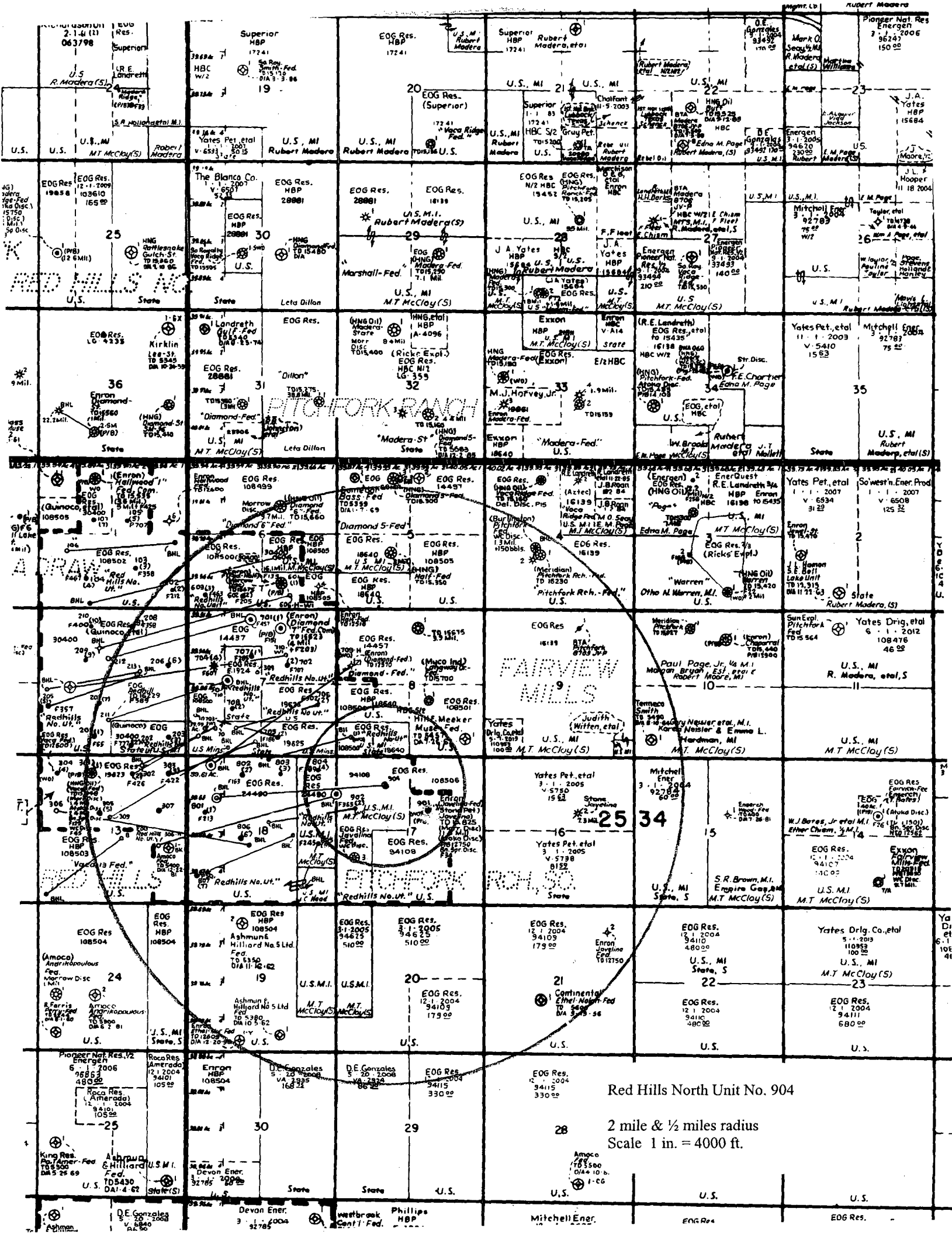
XIII. See attached “Proof of Notice”.

Surface Owner:

Mark McCloy  
P.O. Box 1076  
Jal, NM 88252

Offset Operators:

EOG is the only operator within a ½ mile radius of the injector.



**EOG Resources, Inc.**  
**Tabulation of Data on Wells in Review Area**  
**Application for Authorization to Inject RHNU # 904**

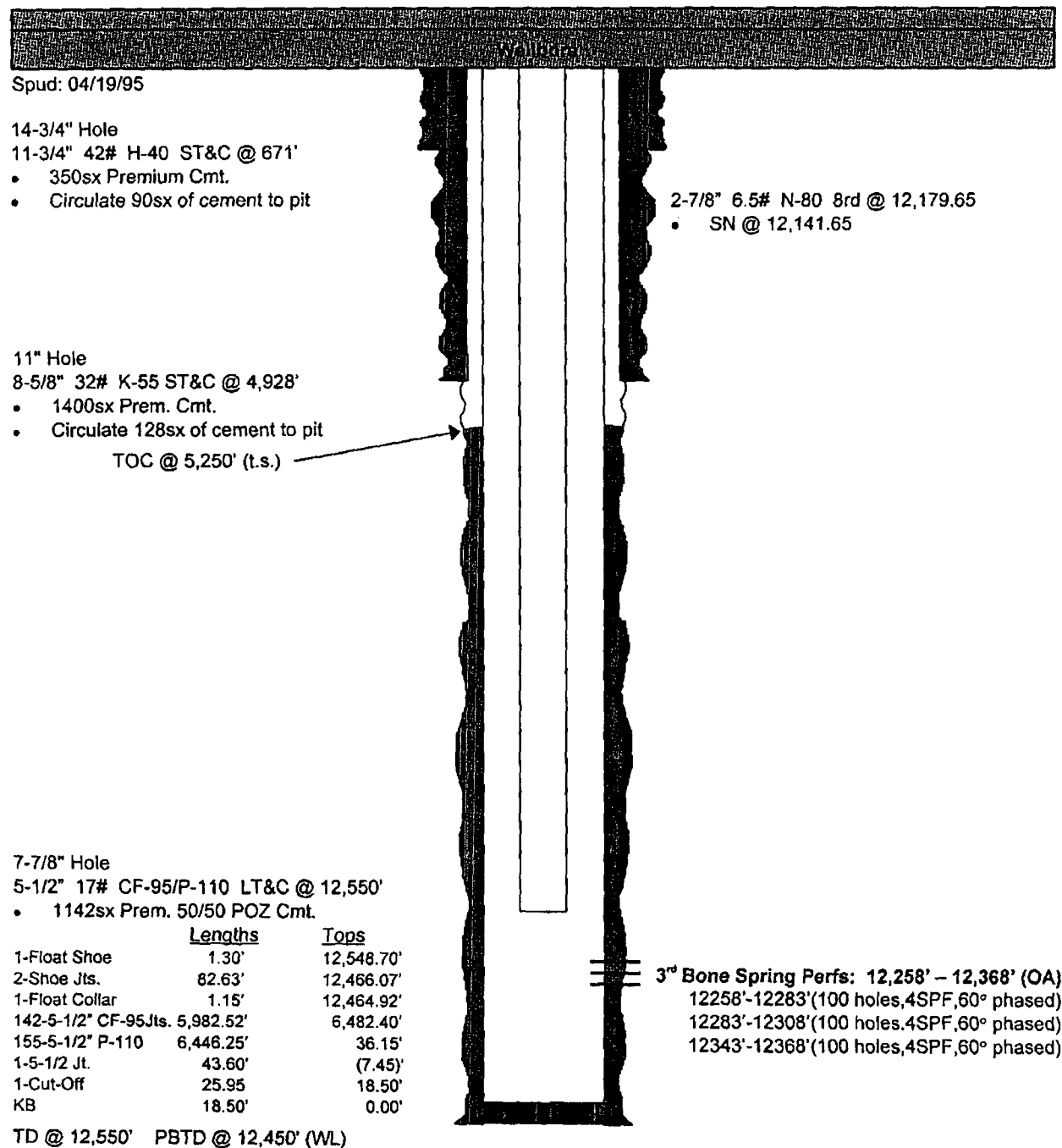
VI.

Operator	Lease/Well	Status	Location	Spud Date	Drilled TD PBD	Surface Casing			Production Casing			Producing Perforations
						Size	Depth	Cement	Size	Depth	Cement	
EOG Resources, Inc.	Red Hills North Unit #804	ACT-Oil	Sec. 18-T25S-R34E	4/19/1995	12550' 12450'	11-3/4"	671'	350sx	5-1/2"	12550'	1142sx	12258'-12368'
EOG Resources, Inc.	Red Hills North Unit #811H	ACT-Oil	Sec. 8-T25S-R34E	6/2/1995	12500' 11855'	11-3/4"	679'	350sx	3-1/2"	15281'	105sx	12644'-15108'
EOG Resources, Inc.	Red Hills North Unit #901H	ACT-Oil	Sec. 17-T25S-R34E	1/23/1995	15820' 12870'	13-3/8"	588'	500sx	5-1/2"	15379'	1576sx	12808'-15170'
EOG Resources, Inc.	Red Hills North Unit #902H	ACT-Oil	Sec. 17-T25S-R34E	7/7/1995	12500' 11854'	11-3/4"	653'	350sx	3-1/2"	15104'	245sx	12494'-14609'
EOG Resources, Inc.	Red Hills North Unit #904H	ACT-Oil	Sec. 17-T25S-R34E	11/5/2003	13849' 13304'	11-3/8"	670'	575sx	4-1/2"	13347'	265sx	12709'-13200'

EOG RESOURCES, INC.  
510' FNL & 660' FWL  
Sec.18-T25S-R34E

RHNU NO.804 / DIAMOND "18" FEDERAL NO. 4  
LEA CO., NEW MEXICO  
DECEMBER 12, 2000

# WELLBORE SCHEMATIC





RHNU No.811H R/E

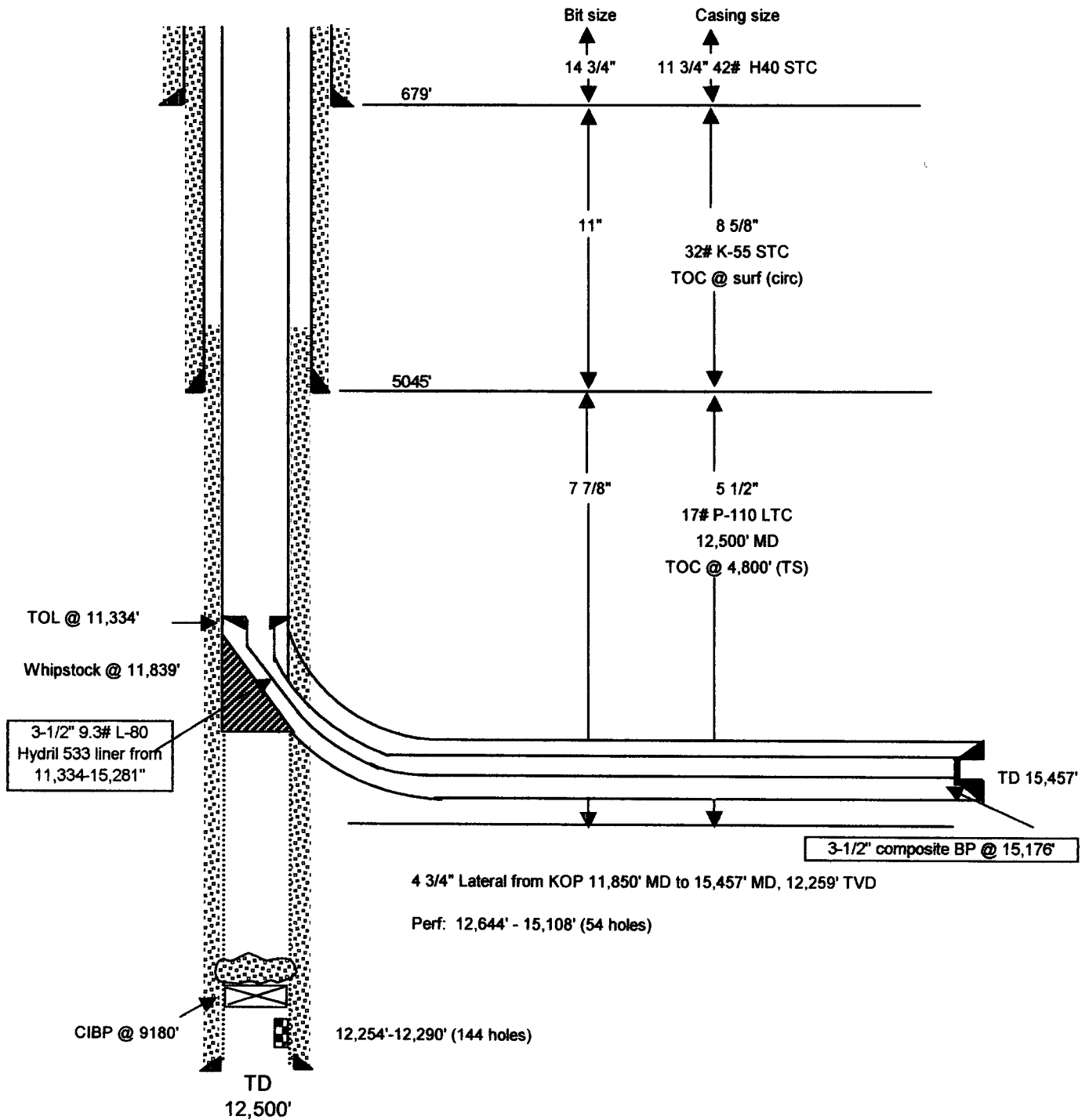
509' FWL & 662' FSL

Sec. 8-25S-34E

Lea County, New Mexico

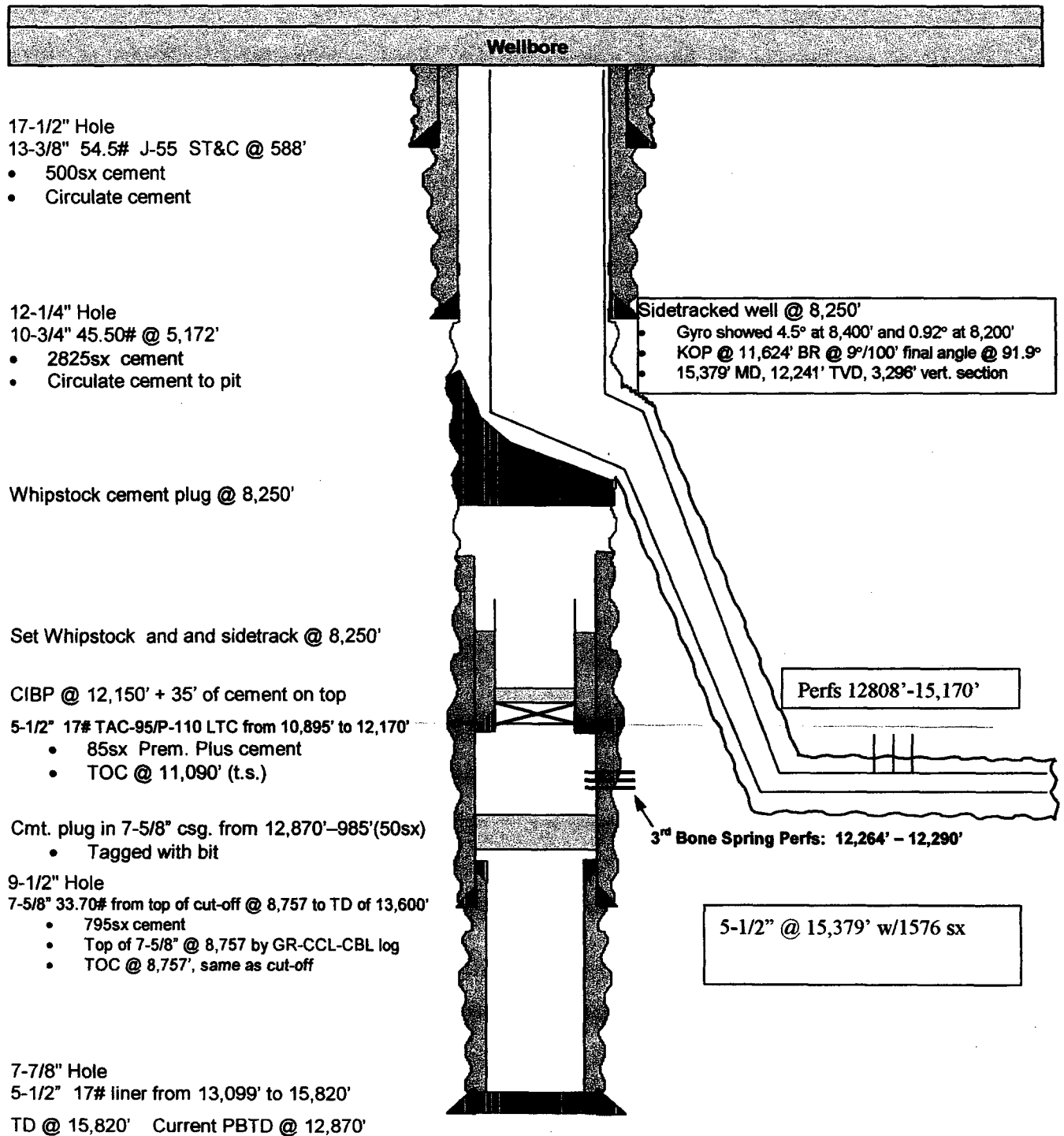
API 30-025-32980

102571



5/24/2005

WELLBORE SCHEMATIC



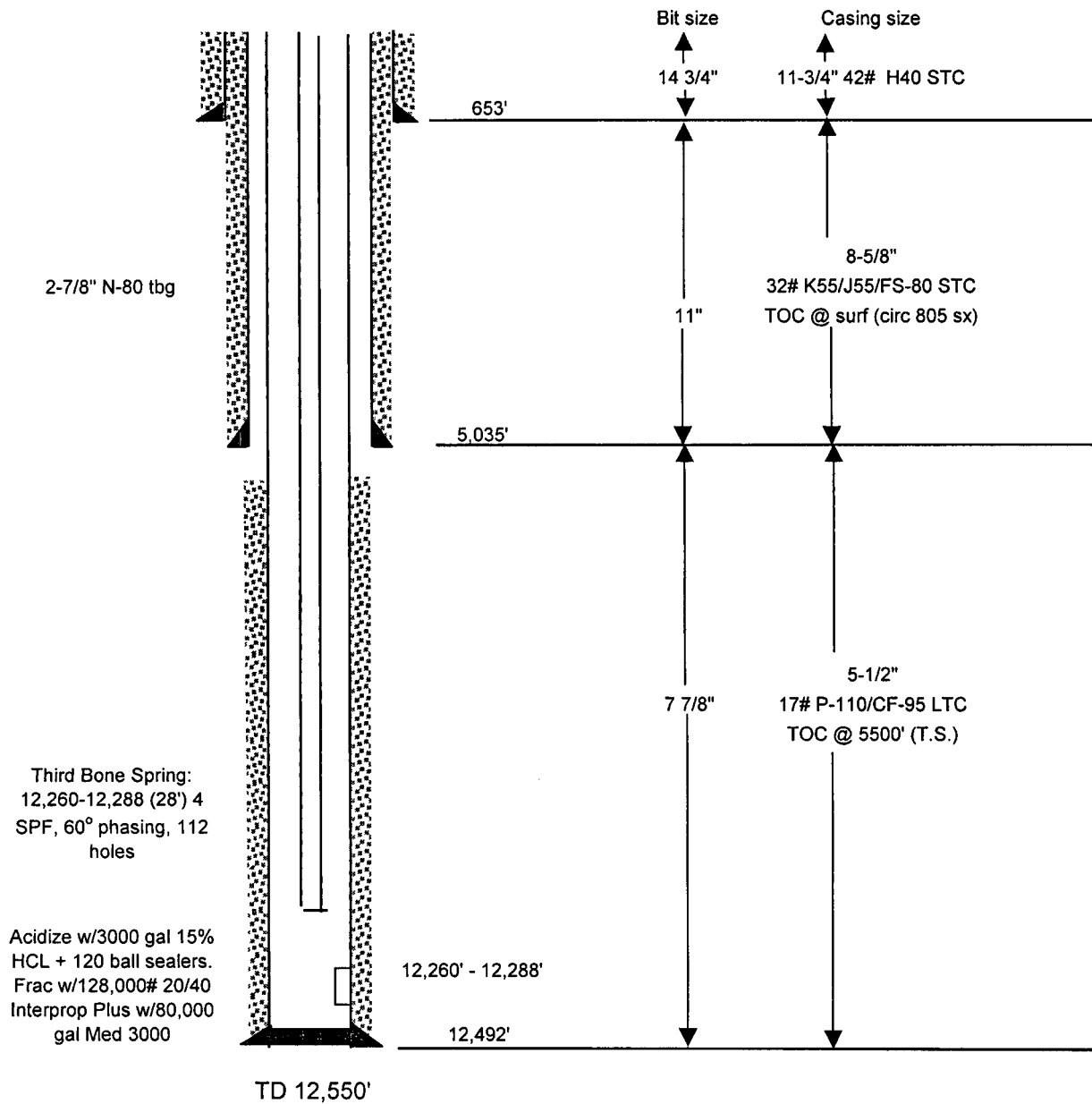


# Red Hills North Unit No. 902

1830' FNL & 660' FWL

Sec. 17-25S-34E

Lea County, New Mexico





# Red Hills North Unit No. 904

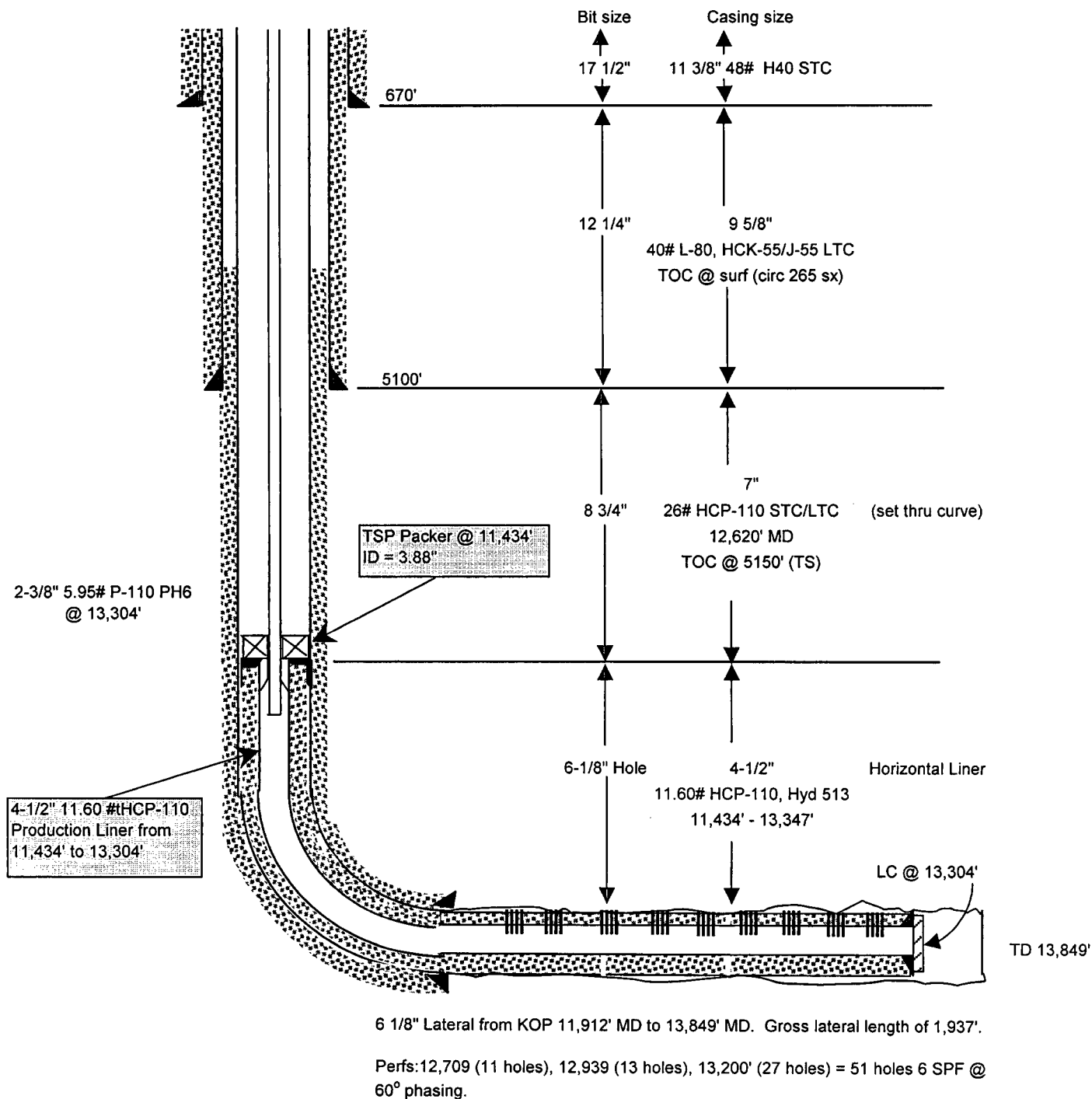
1000' FNL & 1700' FWL

Sec. 17-25S-34E

Lea County, New Mexico

API 30-025-36237

AFE 102599



LATHAM PRINTING CO. 318 N. 4th

## INJECTION WELL DATA SHEET

OPERATOR: EOG Resources, Inc.

WELL NAME &amp; NUMBER: Red Hills North Unit No. 801

WELL LOCATION: 1827' FNL &amp; 660' FWL

E

18

25S

34E

FOOTAGE LOCATION

UNIT LETTER

SECTION

TOWNSHIP

RANGE

30-025-326S1

WELLBORE SCHEMATICWELL CONSTRUCTION DATASurface Casing

Bit size 14 3/4" Casing size 11 3/4" 42# H40 STC  
 877' 11" 8 5/8" 32# HCK55/U-55 STC  
 4989' TOC @ surf (circ)  
 5 1/2" 17# CF-85/P-110 LTC  
 12,514' MD  
 TOC @ 4900' (T.S.)  
 7 7/8" 7 7/8" 5 1/2" 5 1/2"  
 Hole Size: 14 3/4" Casing Size: 11 3/4"  
 Cemented with: 350 sx. or ft<sup>3</sup>  
 Top of Cement: Surface Method Determined: CIRC

Intermediate Casing

Hole Size: 11 Casing Size: 8 5/8  
 Cemented with: 1400 sx. or ft<sup>3</sup>  
 Top of Cement: Surface Method Determined: CIRC

Production Casing

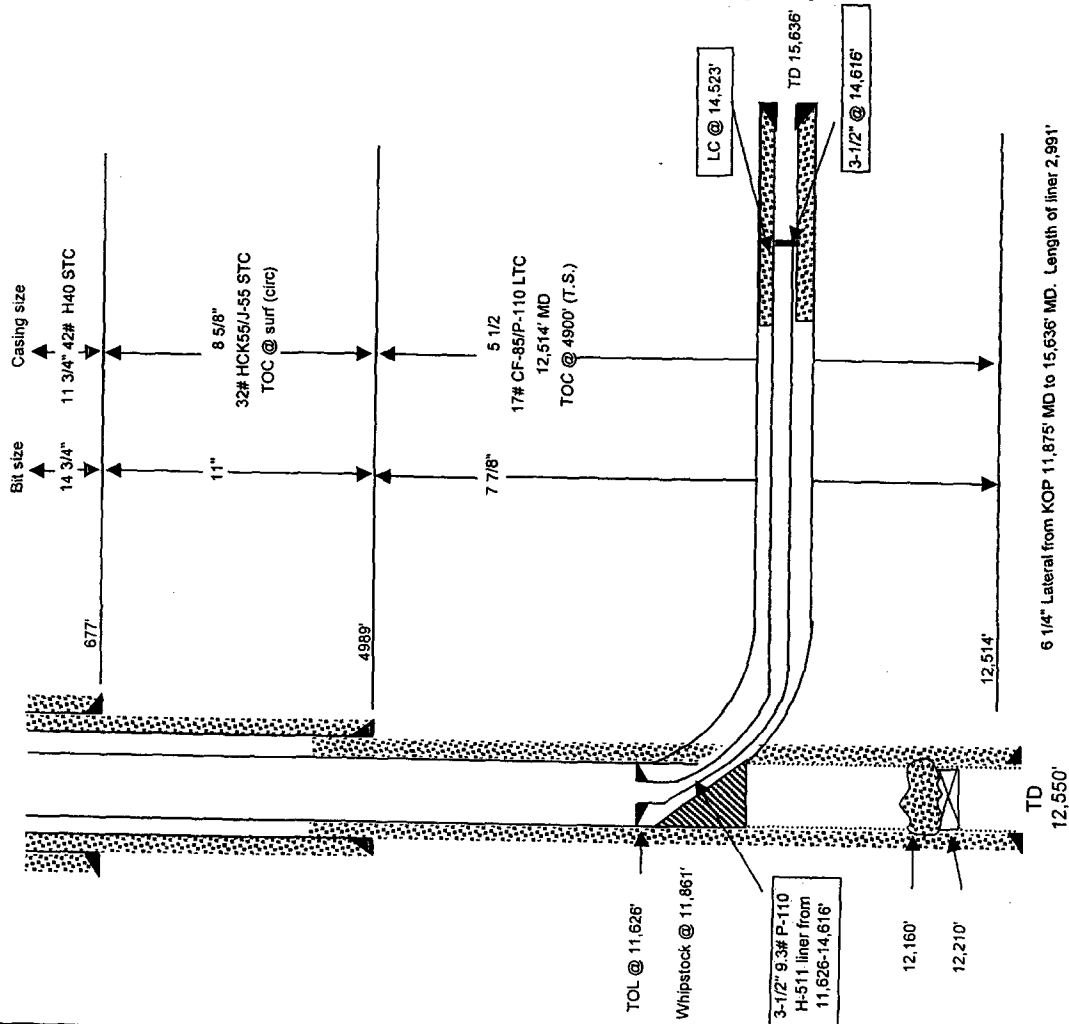
Hole Size: 7 7/8 Casing Size: 5 1/2  
 Cemented with: 1390 sx. or ft<sup>3</sup>  
 Top of Cement: 4900 Method Determined: Temp Survey

Total Depth: 15636 MD; 12258 VD

Injection Interval

12510 feet to 14480

(Perforated or Open Hole; indicate which)



INJECTION WELL DATA SHEET

Tubing Size: 2 7/8 Lining Material: Plastic Coated

Type of Packer: Halliburton PLS 7" 26#

Packer Setting Depth: +/- 11575'

Other Type of Tubing/Casing Seal (if applicable):

Additional Data

1. Is this a new well drilled for injection? Yes X No  
 If no, for what purpose was the well originally drilled? Production
2. Name of the Injection Formation: Bone Spring
3. Name of Field or Pool (if applicable): Red Hills; Bone Spring
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. No
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:
 

<u>Next Higher : Delaware 5183' - 9260'</u>	
<u>Next Lower : Wolfcamp 12284' - 13800'</u>	

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTN.M. Oil Cons. Division  
1625 N. French Dr.  
Hobbs, NM 88240FORM APPROVED  
OMB NO. 1004-0137  
Expires: November 30, 2000

## WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Dry <input type="checkbox"/> Other		5. Lease Serial No. <b>NM24490</b>
b. Type of Completion: <input type="checkbox"/> New Well <input checked="" type="checkbox"/> Work Over <input type="checkbox"/> Deepen <input type="checkbox"/> Plug Back <input type="checkbox"/> Diff. Resvr. Other		6. If Indian, Allottee or Tribe Name
2. Name of Operator <b>EOG Resources Inc.</b>		7. Unit or CA Agreement Name and No. <b>Red Hills North Unit</b>
3. Address <b>P.O. Box 2267 Midland TX 79702</b>		8. Lease Name and Well No. <b>Red Hills North Unit 801</b>
3a. Phone No. (include area code) <b>432 686 3689</b>		9. API Well No. <b>30-025-32651</b>
4. Location of Well (Report location clearly and in accordance with Federal requirements)* At surface <b>1827' FNL &amp; 660' FWL</b> At top prod. interval reported below At total depth <b>1209' FNL &amp; 1085' FWL</b> <i>4195/W</i>		10. Field and Pool, or Exploratory <b>Red Hills, Bone Spring</b>
14. Date Spudded <b>WO 1/30/04</b>		11. Sec., T., R., M., or Block and Survey or Area <b>Sec 18, T25S, R34E</b>
15. Date T.D. Reached <b>3/8/04</b>		12. County or Parish <b>Lea</b>
16. Date Completed <input type="checkbox"/> D & A <input checked="" type="checkbox"/> Ready to Prod. <b>4/4/04</b>		13. State <b>NM</b>
17. Elevations (DF, RKB, RT, GL)* <b>3339 GL</b>		

18. Total Depth: MD TVD <b>15636</b> <b>12258</b>	19. Plug Back T.D.: MD TVD <b>15636</b> <b>12258</b>	20. Depth Bridge Plug Set: MD TVD <b>12210</b> <b>12210</b>
21. Type Electric & Other Mechanical Logs Run (Submit copy of each)		22. Was well cored? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Submit analysis) Was DST run <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Submit report) Directional Survey? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (Submit copy)

23. Casing and Liner Record (Report all strings set in well)									
Hole Size	Size/Grade	Wt. (#ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sk. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
14 3/4	11 3/4	42		676		350 Prem		Surface	
11	8 5/8	32		4689		1400 Prem H		Surface	
7 7/8	5 1/2	17		12514		1150 Prem		4900 TS	
						240 50:50 PZ			
	3 1/2	9.3	11625	14615		110 H			

24. Tubing Record									
Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	
2 7/8	11507								

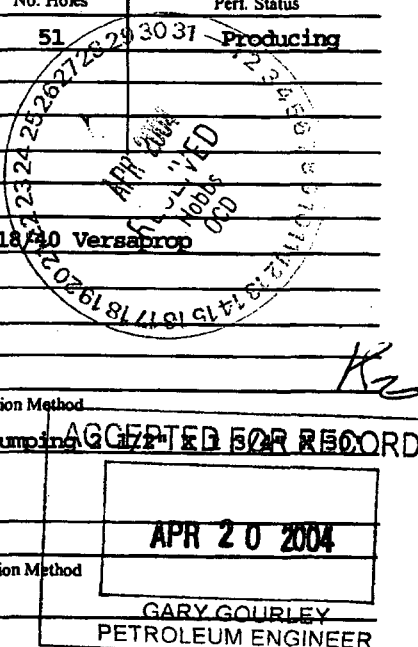
25. Producing Intervals					26. Perforation Record				
Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status			
A) Bone Spring	12510		12510-14480	0.32	51	Producing			
B)									
C)									
D)									

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.									
Depth Interval	Amount and Type of Material								
12510-14480	Frac w/ 160,000 gals SpectraFrac G-2500 + 250,000 # 18/40 Versaprop								

28. Production - Interval A									
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity	Gas Gravity	Production Method
3/31/04	4/9/04	24	→	192	282	59	40.0		Pumping
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. →	Oil BBL	Gas MCF	Water BBL	Gas: Oil Ratio	Well Status	
							1469	POW	

28a. Production-Interval B									
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. →	Oil BBL	Gas MCF	Water BBL	Gas: Oil Ratio	Well Status	

(See instructions and spaces for additional data on reverse side)



casing set and cemented at 636'. Please see attached fresh water analysis.

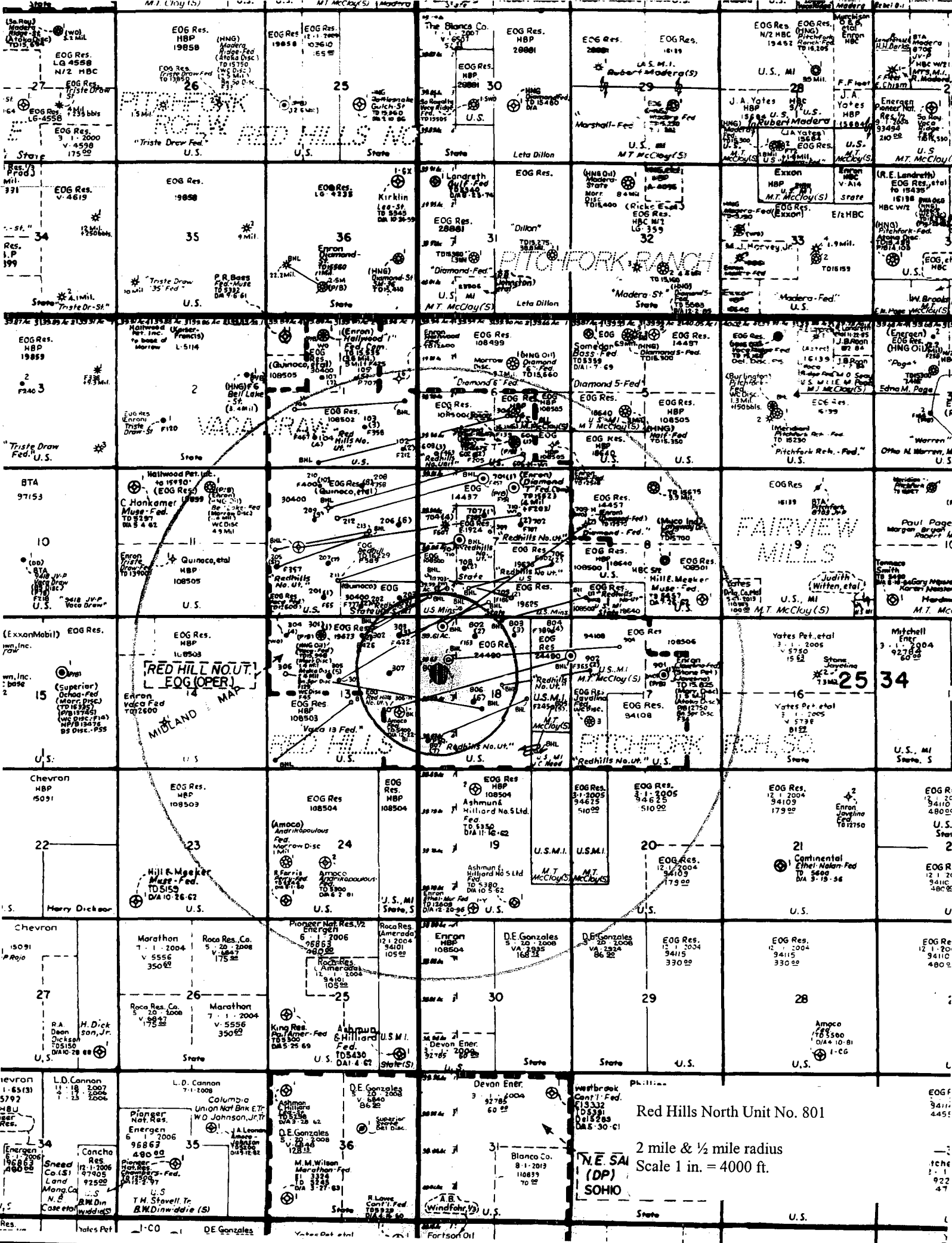
- XII. Available geologic and engineering data has been examined and no evidence has been found of open faults or any other hydrologic connection between the injection zone and any underground source of drinking water.
- XIII. See attached "Proof of Notice".

Surface Owner:

Mark McCloy  
P.O. Box 1076  
Jal, NM 88252

Offset Operators:

EOG is only operator within a ½ mile radius of the injector.



Red Hills North Unit No. 801  
2 mile & 1/2 mile radius  
Scale 1 in. = 4000 ft.

N.E. SAI  
(DP)  
SOHIO

**EOG Resources, Inc.**  
**Tabulation of Data on Wells in Review Area**  
**Application for Authorization to Inject RHNU #801**

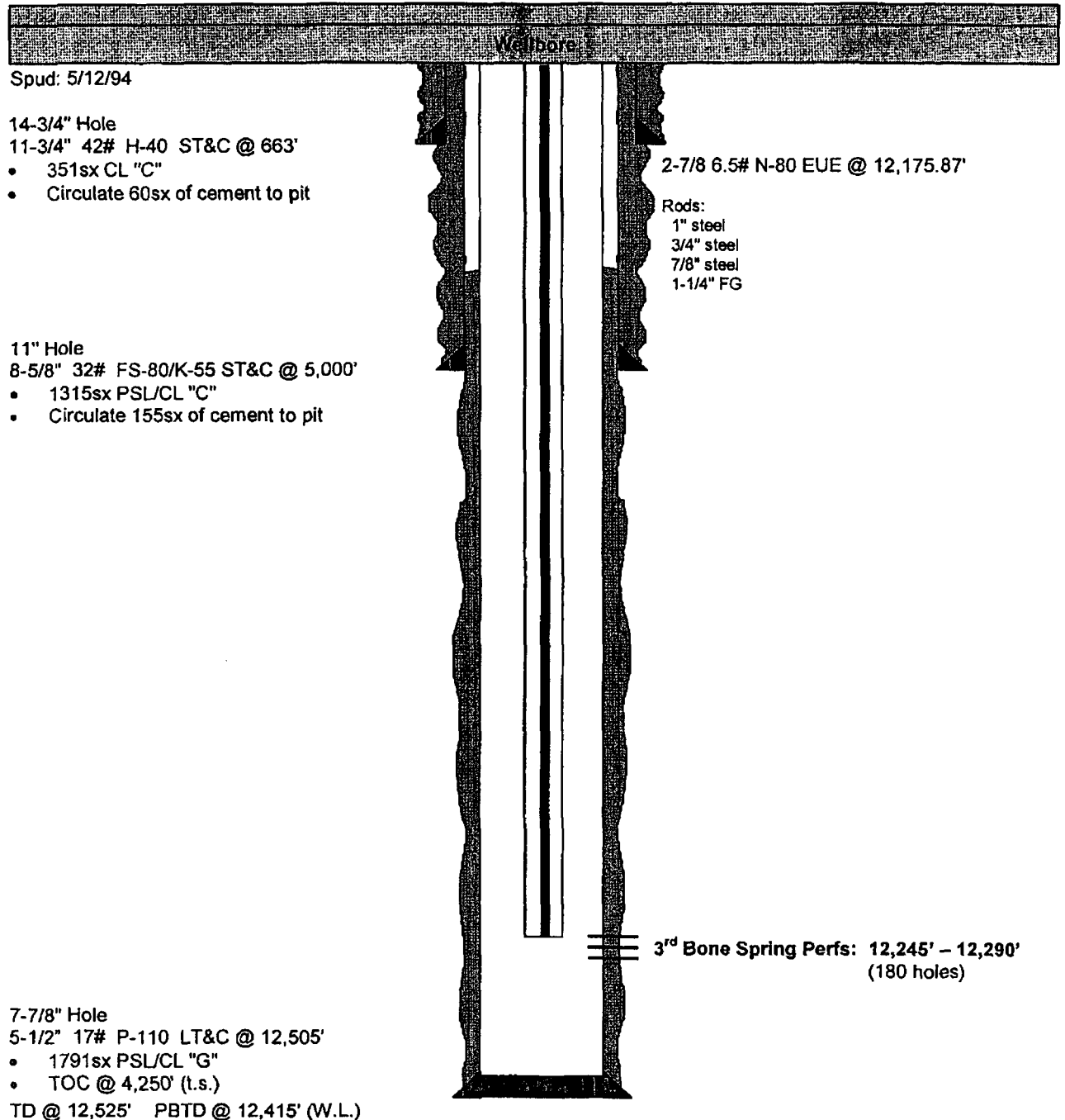
VI.

Operator	Lease/Well	Status	Location	Spud Date	Drilled TD PBD	Surface Casing			Production Casing			Producing Perforations
						Size	Depth	Cement	Size	Depth	Cement	
EOG Resources, Inc.	Red Hills North Unit #303	ACT-Oil	Sec. 13-T25S-R33E	5/12/1994	12525'	11-3/4"	663'	351sx	5-1/2"	12505'	1691sx	12245'-12290'
EOG Resources, Inc.	Red Hills North Unit #306H	ACT-Oil	Sec. 13-T25S-R33E	11/17/2001	16430'	13-3/8"	670'	601sx	4-1/2"	16430'	250sx	12923'-15437'
EOG Resources, Inc.	Red Hills North Unit #307H	ACT-Oil	Sec. 13-T25S-R33E	8/12/2001	13880'	13-3/8"	670'	500sx	4-1/2"	13930'	140sx	12758'-13840'
EOG Resources, Inc.	Red Hills North Unit #801H	ACT-Oil	Sec. 18-T25S-R34E	7/29/1995	15636'	11-3/4"	676'	350sx	3-1/2"	15636'	1390sx	12510'-14480'
EOG Resources, Inc.	Red Hills North Unit #802	ACT-Oil	Sec. 18-T25S-R34E	11/17/1994	12575'	11-3/4"	650'	350sx	5-1/2"	12560'	1505sx	12260'-12318'
EOG Resources, Inc.	Red Hills North Unit #806	ACT-Oil	Sec. 18-T25S-R34E	10/31/1995	12328'	11-3/4"	685'	350sx	5-1/2"	12431'	1430sx	12204'-12223'
EOG Resources, Inc.	Red Hills North Unit #807	ACT-Oil	Sec. 18-T25S-R34E	7/21/1999	12392'	11-3/4"	659'	450sx	5-1/2"	12435'	1110sx	12186'-12201'
Amoco Production Corp	Federal BK #1	P&A	Sec. 13-T25S-R33E	12/9/1981	5400'	8-5/8"	637'	400sx	NA	NA	NA	NA

EOG RESOURCES, INC.  
660' FNL & 660' FEL  
Sec.13-T25S-R33E

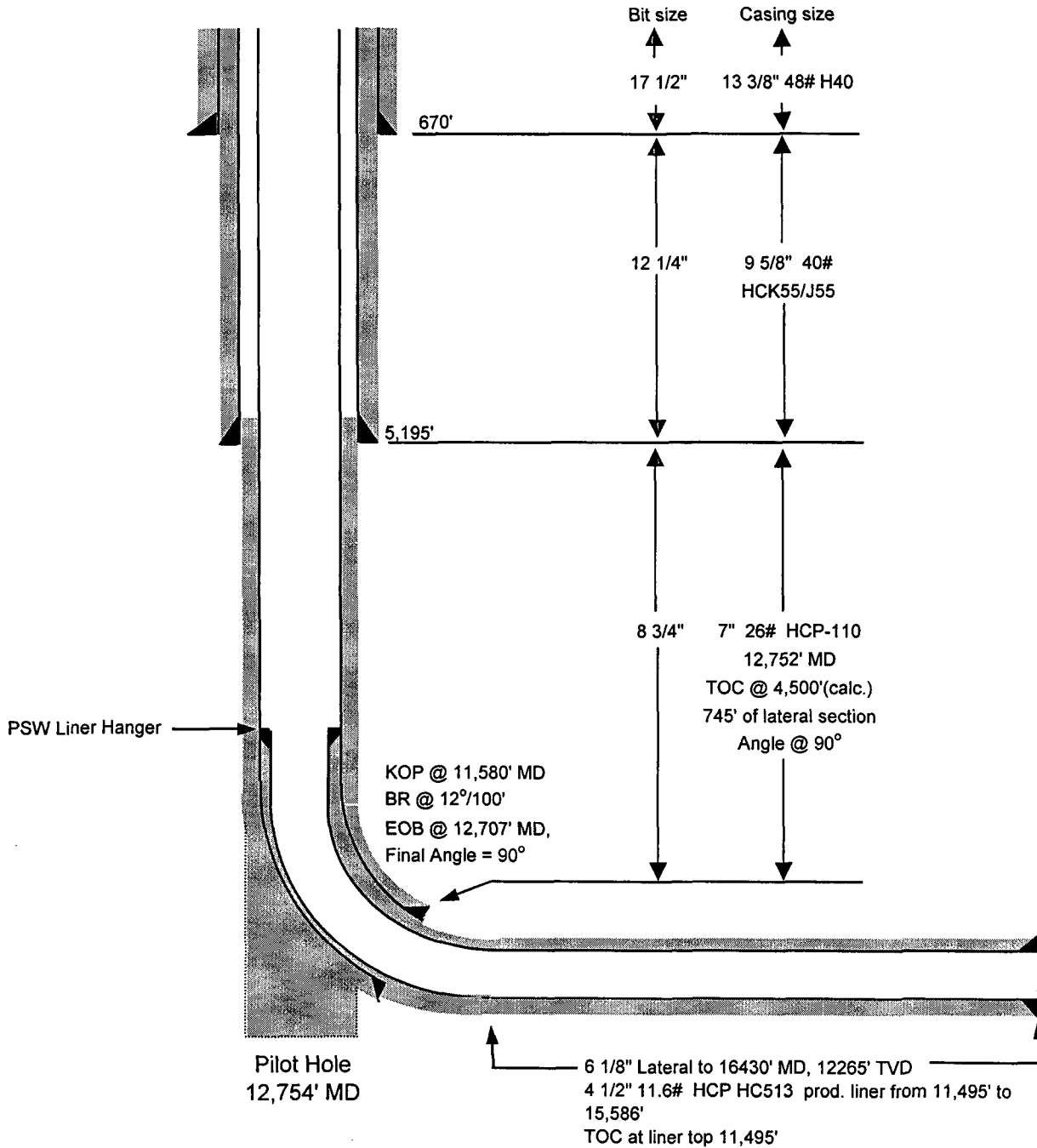
RHNU No. 303  
LEA CO., NEW MEXICO  
APRIL 3, 2000

### WELLBORE SCHEMATIC



**RHNU NO.306**  
 EOG Resources, Inc.  
**PROSPECT: Red Hills**

990' FEL & 2,080' FSL  
 Sec.13-T25S-R33E  
 Lea County, New Mexico





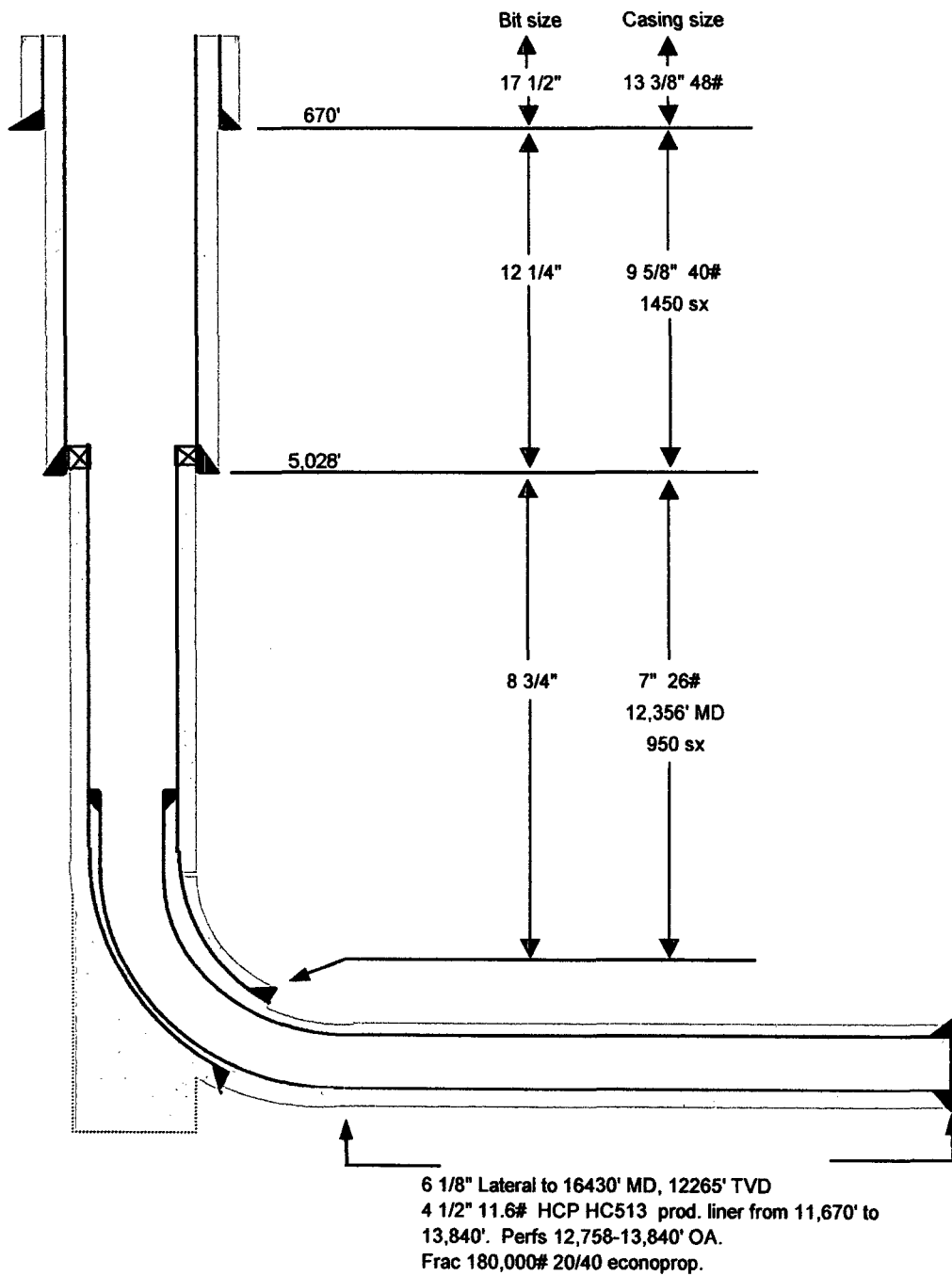
**RHNU NO.307**

1980' FNL & 990' FEL

Sec.13-T25S-R33E

Lea County, New Mexico

API 30-025-35039



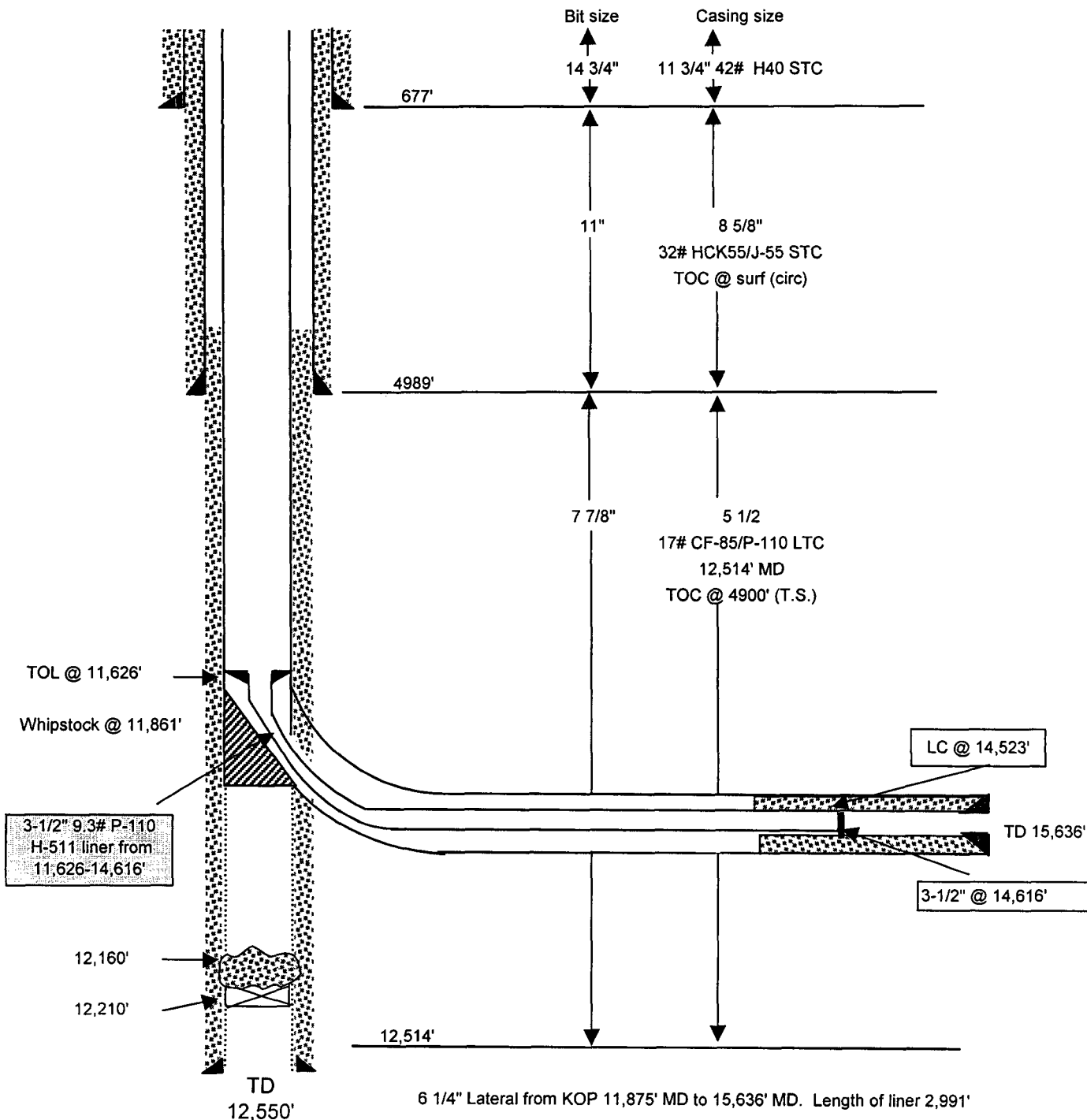


# Red Hills North Unit No. 801 R/E

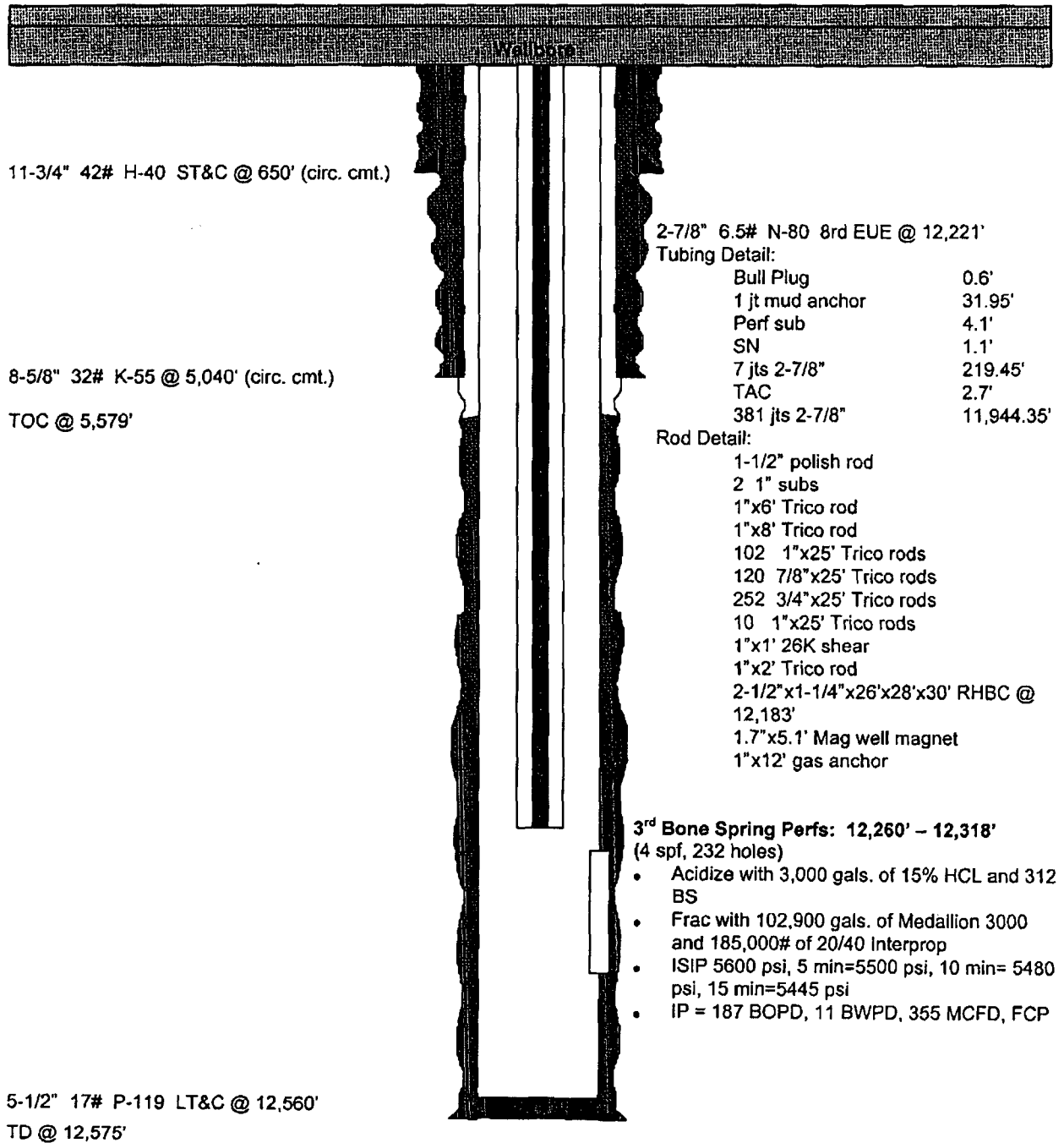
1827' FNL & 660' FWL

Sec. 18-25S-34E

Lea County, New Mexico



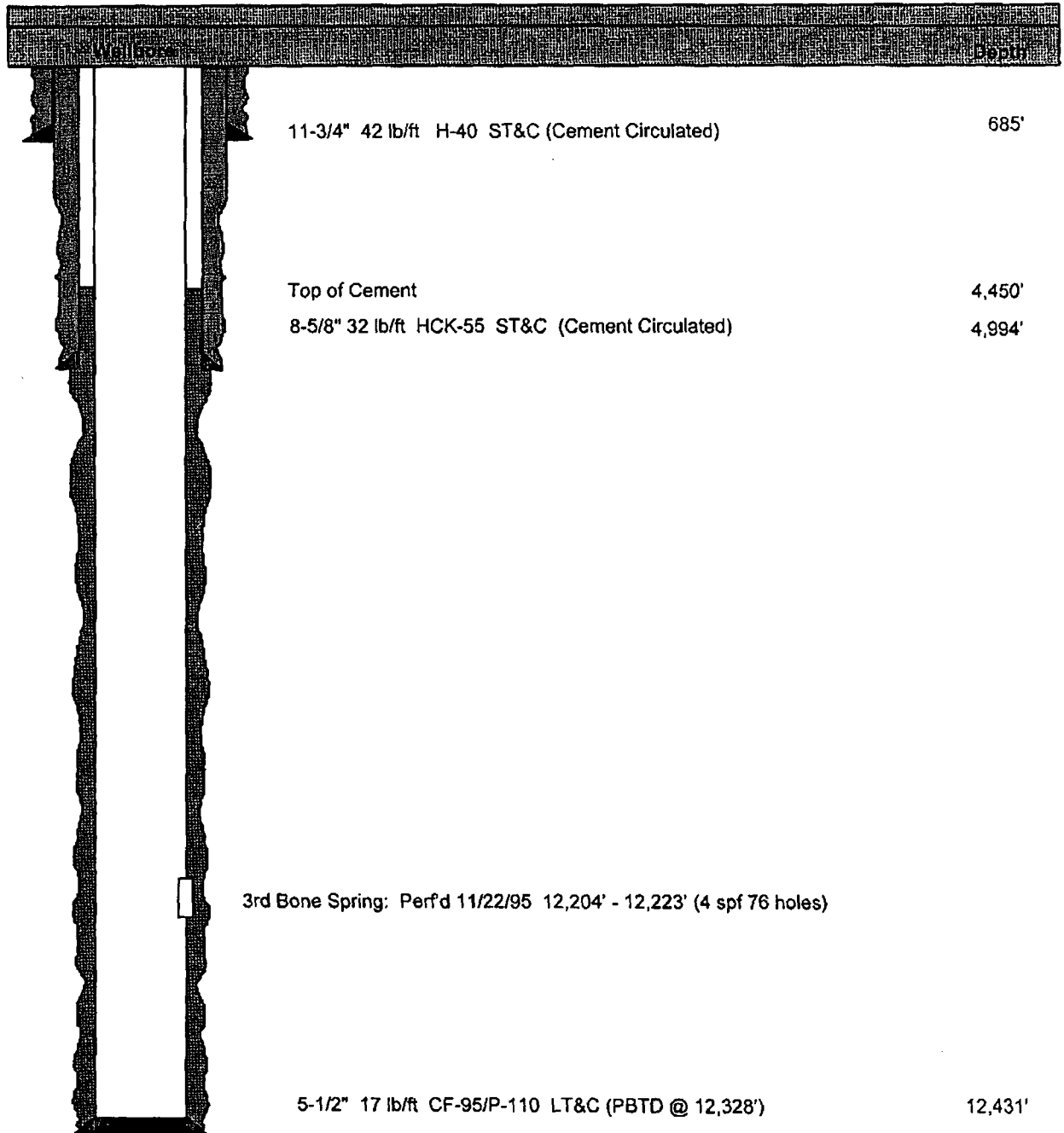
## WELLBORE SCHEMATIC



Enron Oil & Gas Company

Diamond "18" Federal No. 6  
Lea County, New Mexico  
March 12, 1997

WELL SCHEMATIC



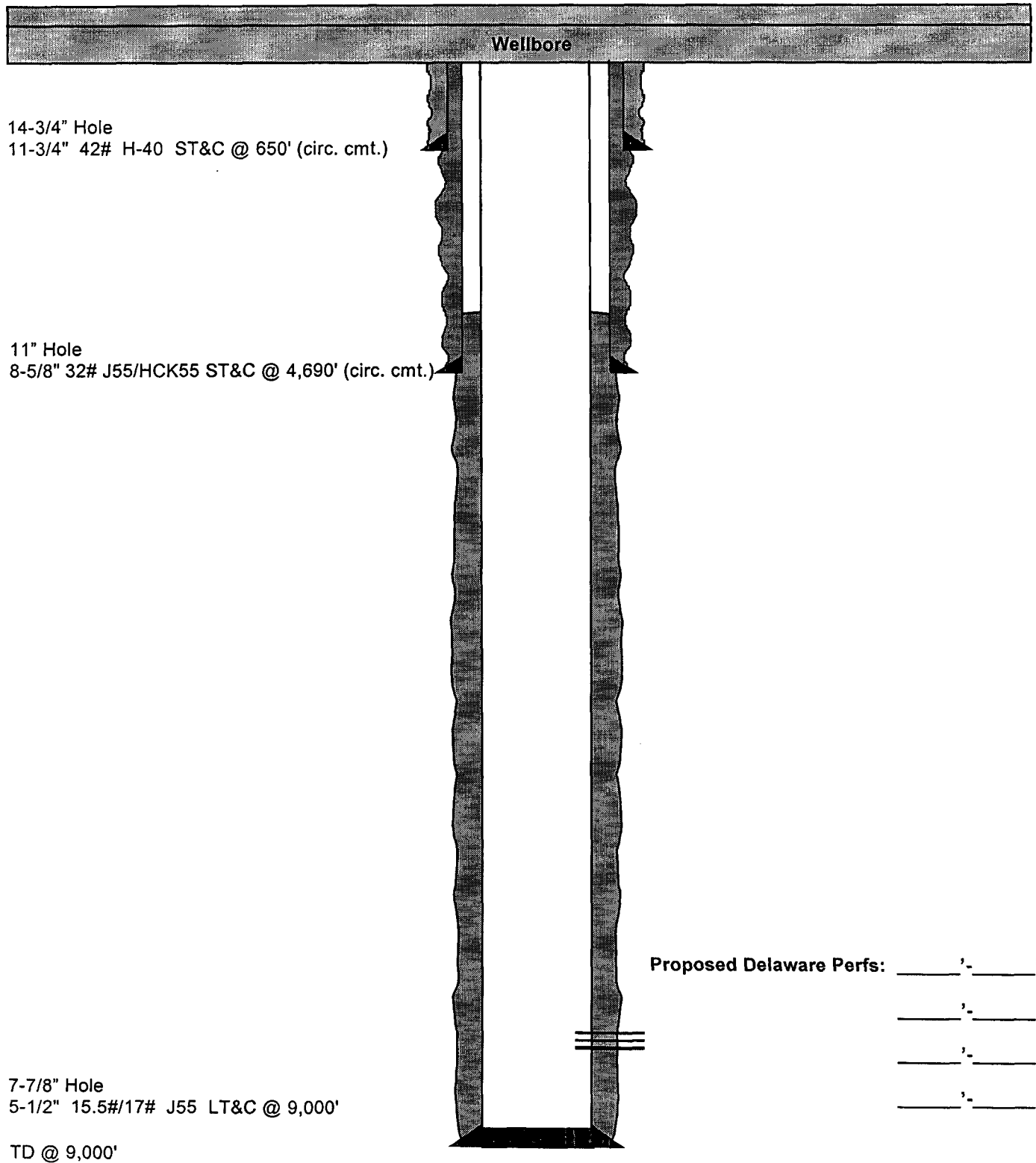
EOG RESOURCES, INC.

DIAMONDTAIL "3" FEDERAL NO. 1

LEA CO., NEW MEXICO

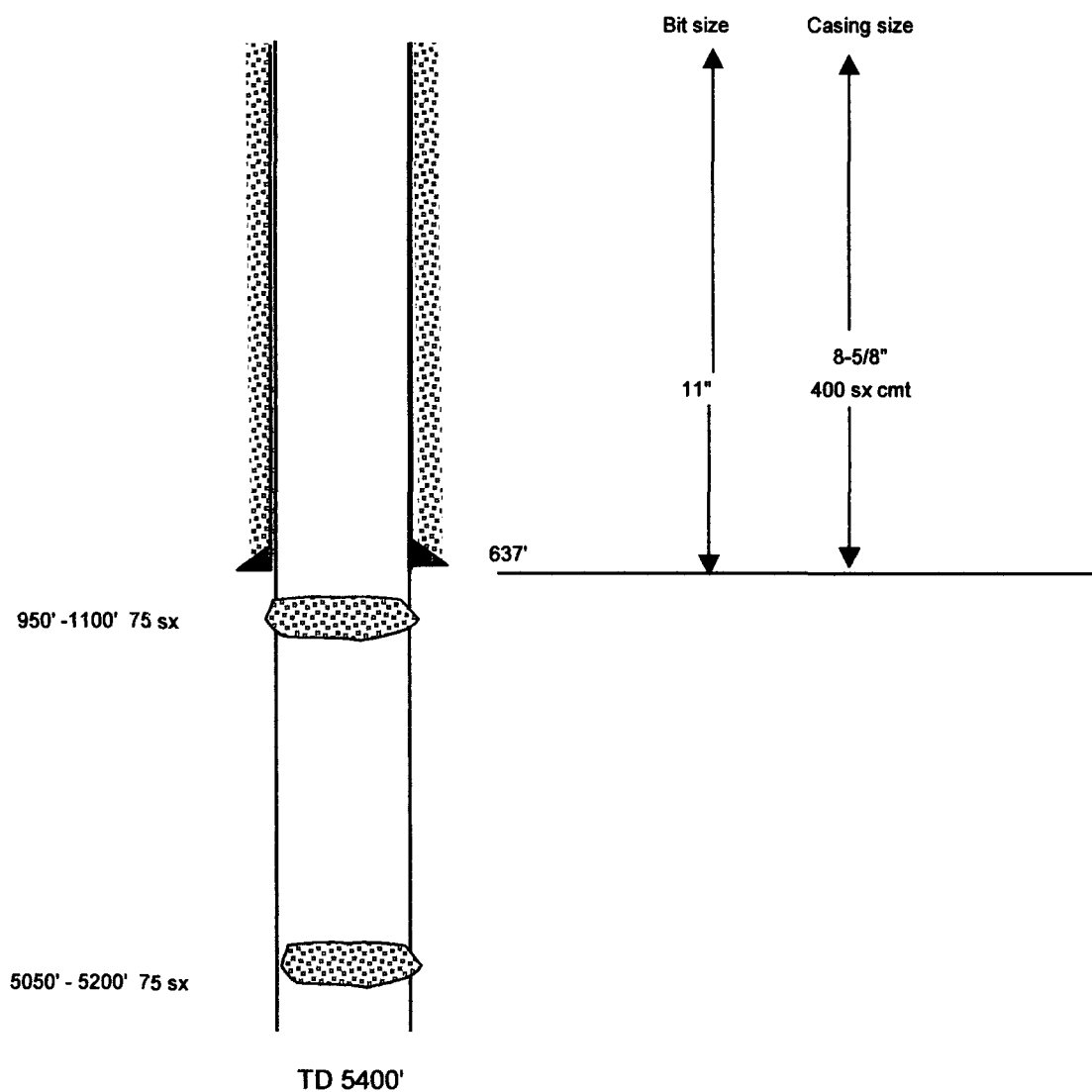
JUNE 12, 2000

WELLBORE SCHEMATIC



# Amoco Production Company

Federal BK No. 1  
Sec. 13-25S-33E  
Lea County, New Mexico  
30-025-27352



709 W. INDIANA  
MIDLAND, TEXAS 79701  
PHONE 683-4521

Fax: Dirk Ellyson, Carlsbad (505-390-2907)

P. O. BOX 1468  
MONAHANS, TEXAS 79756  
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W. INDIANA  
MIDLAND, TEXAS 79701  
PHONE 683-4521

RESULT OF WATER ANALYSES

TO: Mr. Hal Crabb LABORATORY NO. 1001-275  
P.O. Box 2608, Midland, Texas 79702 SAMPLE RECEIVED 10/26/01  
RESULTS REPORTED 10/30/01

COMPANY EOG Resources, Inc. LEASE Red Hills North Unit #307-H.  
FIELD OR POOL Red Hills Area  
SECTION 7 BLOCK --- SURVEY T-25SR-34E COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Recovered water - taken from Red Hills North Unit #307-H. 10/25/01

NO. 2 ---

NO. 3 ---

NO. 4 ---

REMARKS: Third Bone Springs

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0581			
pH When Sampled				
pH When Received	7.13			
Bicarbonate as HCO <sub>3</sub>	1.122			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	9.800			
Calcium as Ca	3.280			
Magnesium as Mg	389			
Sodium <del>and Potassium</del>	24.750			
Sulfate as SO <sub>4</sub>	672			
Chloride as Cl	45.440			
Iron as Fe	180			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	77,308			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	0.115			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Potassium, as K	1.642			
Potassium Chloride, as KCl	3.136			
Results Reported As Milligrams Per Liter				
Additional Determinations And Remarks <u>When we compare these results with the water previously recovered from this well reported on laboratory #1001-176 (10/18/01), we see a slight increase in the levels of sodium and chloride that indicates a slight increase in natural Bone Springs. We see a decline in the potassium chloride influence in the water, and now the KCl water would be considered at a very maximum of about 15%. Based on our cataloged records of Bone Springs in the Red Hills field, the above appears to be approximately 85% formation water with a possible dilution of about 15% from KCl water.</u>				

Form No. 3

By Waylan C. Martin

Waylan C. Martin, M.A.

P. O. BOX 1468  
MONAHAN, TEXAS 79756  
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W. INDIANA  
MIDLAND, TEXAS 79701  
PHONE 583-4521

RESULT OF WATER ANALYSES

TO: Mr. Randy Cate LABORATORY NO. 50094  
P.O. Box 2267, Midland, TX 79702 SAMPLE RECEIVED 5-16-00  
RESULTS REPORTED 5-16-00

COMPANY EOG Resources, Inc. LEASE Vaca 13 Federal

FIELD OR POOL \_\_\_\_\_  
SECTION 13 BLOCK \_\_\_\_\_ SURVEY T-25S&R-33E COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Raw water - taken from fresh water well located in NW/4 of Section 13.  
NO. 2 \_\_\_\_\_  
NO. 3 \_\_\_\_\_  
NO. 4 \_\_\_\_\_

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0062			
pH When Sampled				
pH When Received	6.54			
Bicarbonate as HCO <sub>3</sub>	88			
Supersaturation as CaCO <sub>3</sub>				
Undersaturation as CaCO <sub>3</sub>				
Total Hardness as CaCO <sub>3</sub>	4,300			
Calcium as Ca	980			
Magnesium as Mg	450			
Sodium and/or Potassium	485			
Sulfate as SO <sub>4</sub>	458			
Chloride as Cl	3,409			
Iron as Fe	11.2			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	5,869			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen				
Hydrogen Sulfide	0.0			
Resistivity, ohmcm at 77° F.	0.920			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	1.0			

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.