

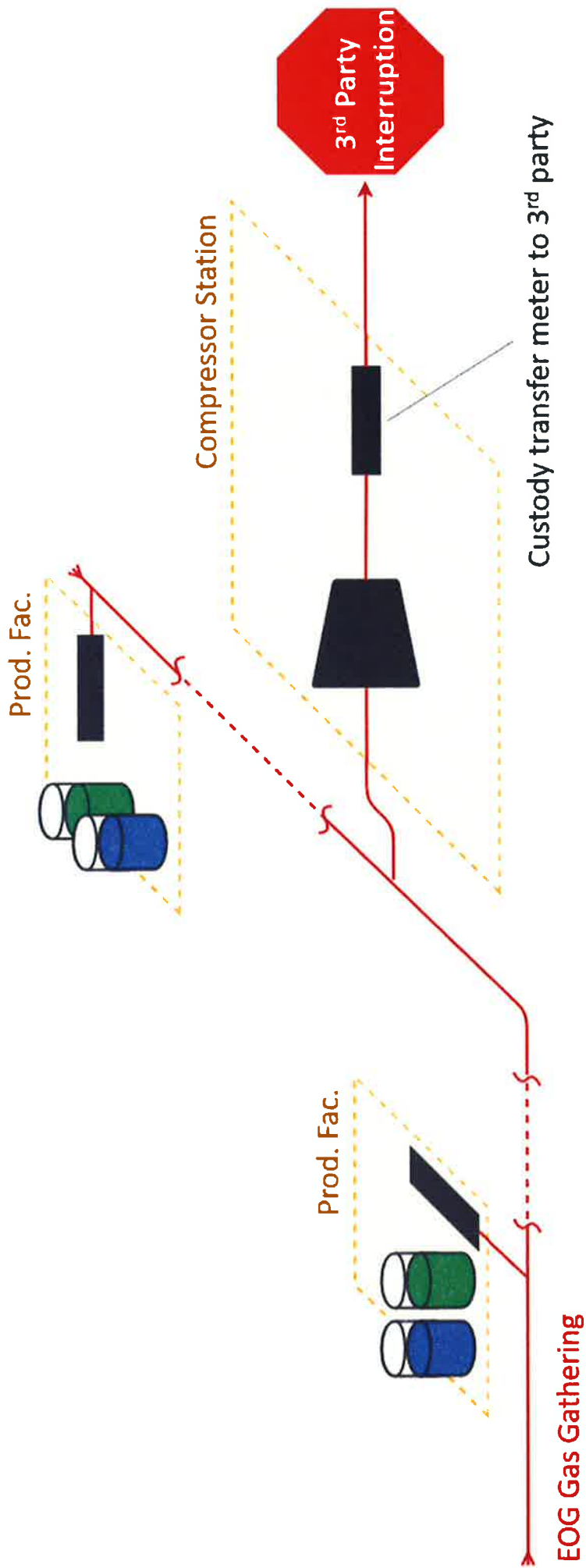
**BEFORE THE OIL CONSERVATION DIVISION  
EXAMINER HEARING DECEMBER 12, 2019**

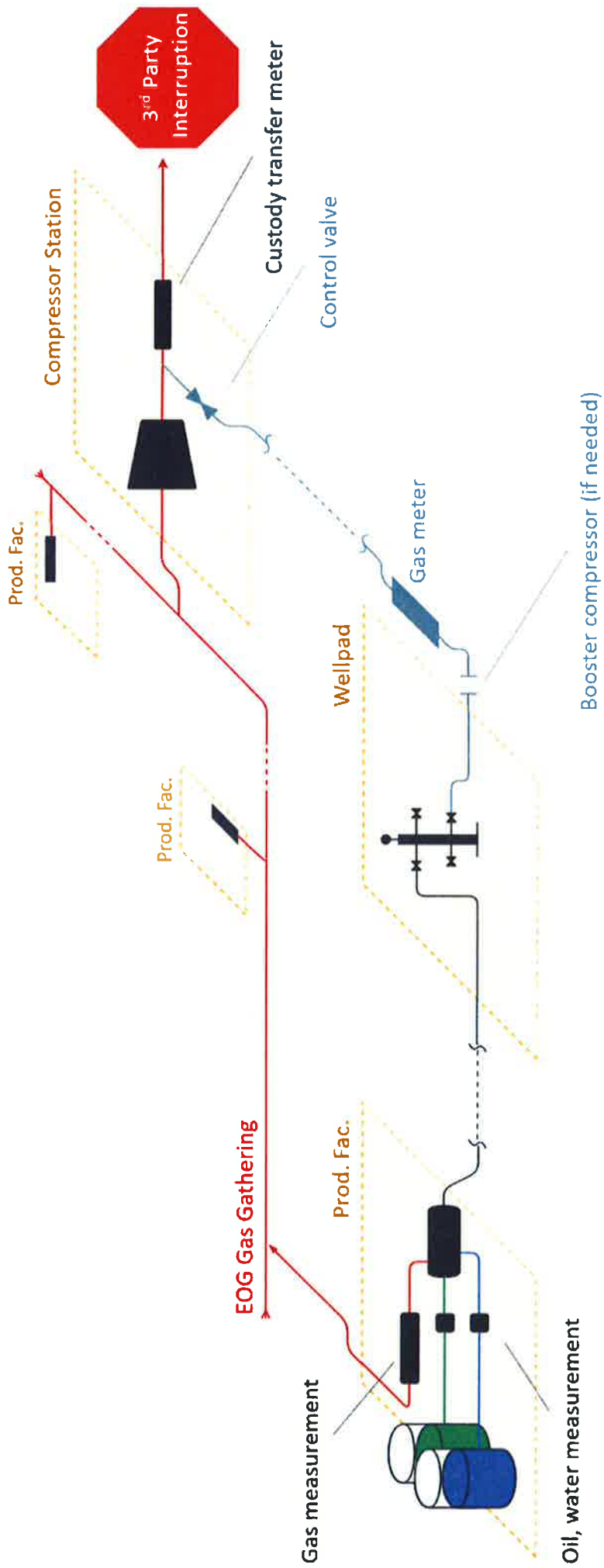
**CASE No. 20965**

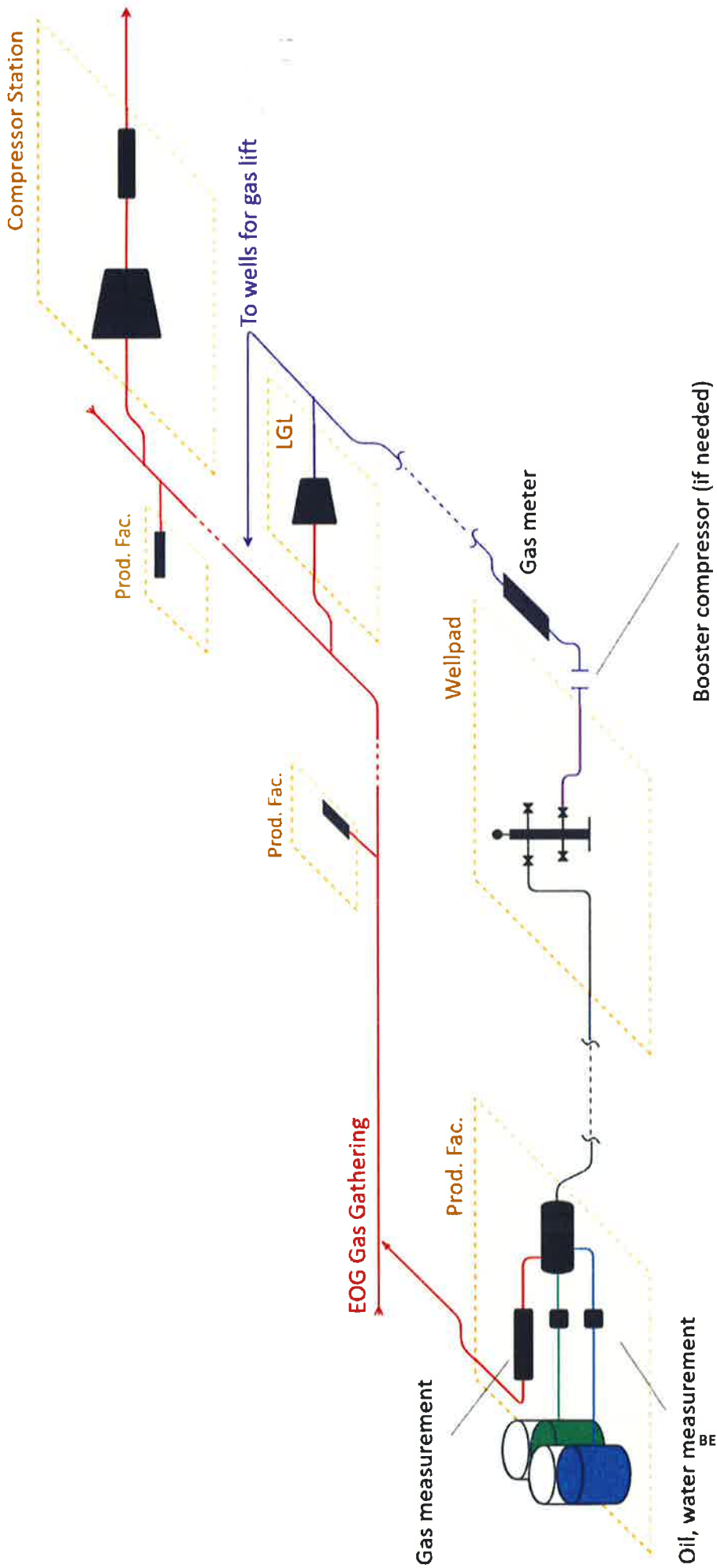
*CABALLO 23FED No. 2H*

*LEA COUNTY, NEW MEXICO*









State of New Mexico  
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham  
Governor

Sarah Cottrell Propst  
Cabinet Secretary

Todd E. Leahy, JD, PhD  
Deputy Secretary

Adrienne Sandoval, Director  
Oil Conservation Division



October 24, 2019

EOG Resources, INC.  
Attention: Patrick Padilla  
5509 Champions Dr, Midland TX 79706

Re: EOG Resources Closed Loop Gas Capture Pilot Project

Dear Patrick Padilla,

This letter responds to your request for guidance regarding the procedure for requesting approval from the Oil Conservation Division ("OCD") for the EOG Resources Closed Loop Gas Capture Pilot Project ("Pilot Project"). On October 4, 2019, EOG Resources gave a presentation to OCD regarding the Pilot Project, which does not appear to fall within the types of injection wells regulated under 19.15.26 NMAC. Accordingly, the OCD Director will exercise her authority under the Oil and Gas Act, NMSA 1978, Section 70-2-11(A), to consider an application for an order to implement the Pilot Project, subject to the following conditions:

- 1) No later than sixty (60) days after the date of this letter, submit an application for hearing containing or agreeing to provide the following information:

**Project Description**

- i) Describe the need and background for the project.
- ii) Summarize the project goals and steps to obtain them.

**Duration**

- i) Provide a project timeline that does not extend more than 1 year after the date of issuance of an order.

**Technical Information and Standards for Installation and Operation**

- i) Supply a reservoir characterization and justification of reservoir suitability including the formation's lithology, and the general stratigraphy of the injection interval.
- ii) Provide reservoir modeling and technical analysis to analyze whether the injected gas will migrate from the formation, interfere with other wells, or affect underground sources of drinking water.
- iii) Provide a technical analysis to evaluate whether the injected gas will have a net positive, neutral, or negative effect on the pool's ultimate recovery.

- iv) Provide a well diagram, casing information, drilling reports, and CBL for the well.
- v) Confirm that the well will meet the following minimum requirements: (a) the casing burst pressure shall be at least 120% of the maximum allowable surface pressure plus the hydrostatic pressure from a full column of reservoir fluid; and (b) the drilling reports and CBL reflect complete cement coverage for the entire vertical length of the well.
- vi) Perform an assessment of the surrounding wells to ensure they meet the requirements in subsection (v).
- vii) Demonstrate that the mechanical integrity of the well complies with 19.15.26.11(A)(1) NMAC to a minimum pressure of 110% of the maximum allowable surface pressure.
- viii) Demonstrate that the injected gas does not contain corrosive gas such as H<sub>2</sub>S or CO<sub>2</sub> that may damage the casing.
- ix) If the proposed maximum allowable surface pressure is greater than 0.14 psi/ft, comply with the following requirements:
  - (a) Justify the proposed maximum allowable surface pressure.
  - (b) Demonstrate with appropriate data the fracture and propagation pressure for the targeted horizon.
  - (c) Provide the expected bottom hole hydrostatic pressure generated by a fluid column consisting of the injected gas.
  - (d) Demonstrate with appropriate data that the maximum allowable surface pressure will not exceed 90% of the horizon's propagation pressure minus the expected bottom hole hydrostatic pressure generated by a fluid column consisting of the injected gas.
  - (e) Install equipment to prevent the downhole pressure from exceeding 90% of the reported propagation pressure.
- x) Provide any additional information requested by the OCD Director.

#### Monitoring

- i) Install equipment to prevent the surface pressure from exceeding the maximum allowable surface pressure.
- ii) If operations will be conducted remotely, establish a SCADA system to collect all relevant data for safe operations, including the production flow rate, injection gas flow rate, surface pressure, and downhole pressure.

#### Reporting

- i) Submit a C-115 form each month which identifies the production and injection volumes, pressures, and days in operation.

#### Corrective Action

- i) Provide a plan of action for environmental and engineering emergencies.

#### Post-Project Report

- ii) Submit a compilation of the following data: injection rates, injection volumes, injection interval durations, maximum pressure reached during injection intervals (surface and downhole), production rates, gas recovery rate, and delta pressures for adjacent wells during injection.

- 2) Give notice of the application and the hearing in accordance with 19.15.26.8(B)(2) NMAC.
- 3) Interested persons may attain party status in the hearing pursuant to 19.15.4.10 & 11 NMAC.
- 4) The hearing will be conducted in accordance with 19.15.4.13 through 26 NMAC.
- 5) The OCD Director may approve this application and impose conditions in the order as she deems necessary to prevent waste, protect correlative rights, and protect the public health and environment.
- 6) OCD will determine the process for broader implementation of the technology used in the Pilot Project after review of the results and further consideration of the regulatory and technical issues.
- 7) This procedure is applicable only to the Pilot Project.

We look forward to working with you on this Pilot Project. If you have any questions about this letter, please call Phil Goetz, UIC Coordinator, at (505)476-3466.

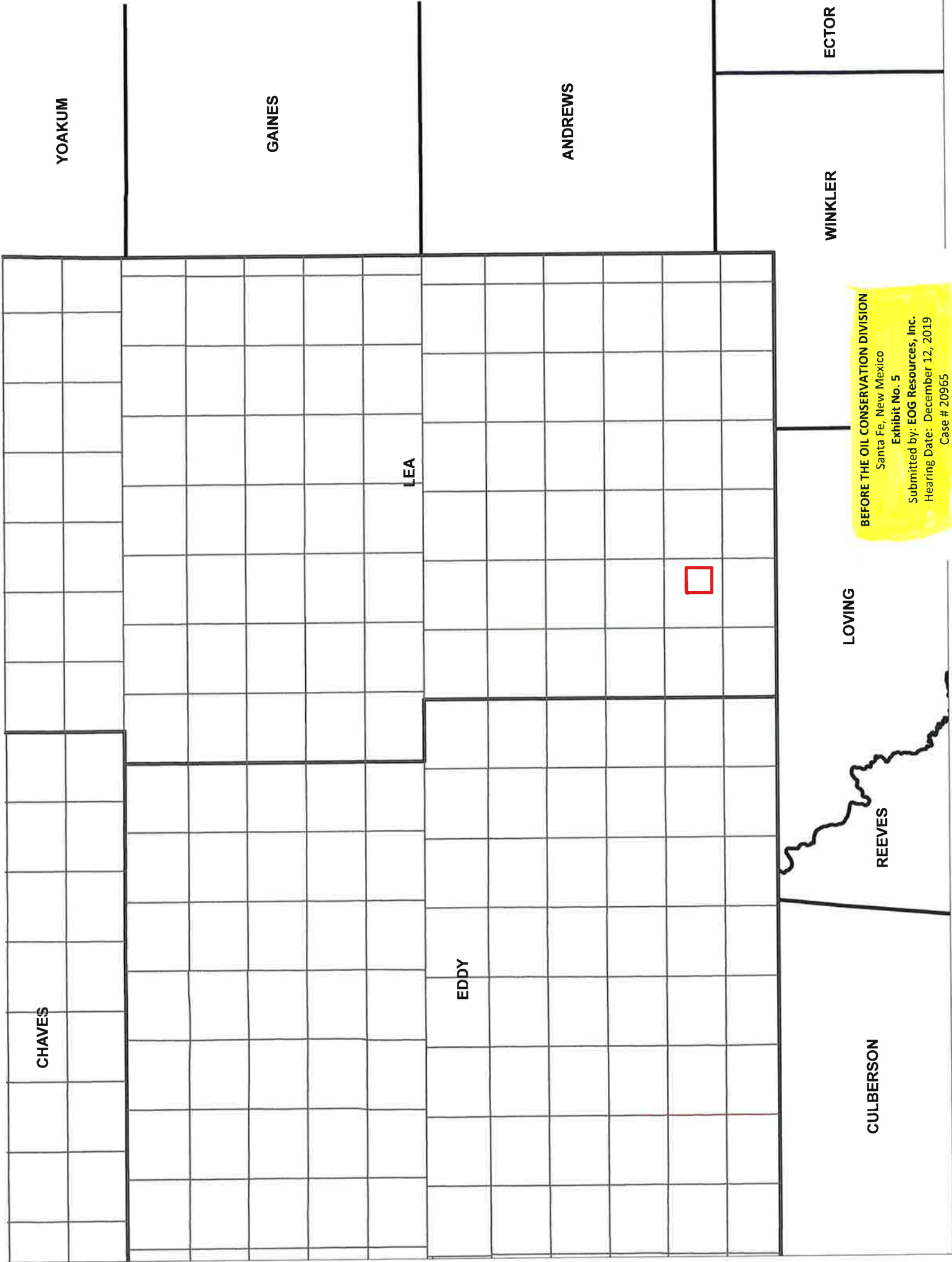
Sincerely,



Adrienne Sandoval  
Director

cc: Phil Goetz








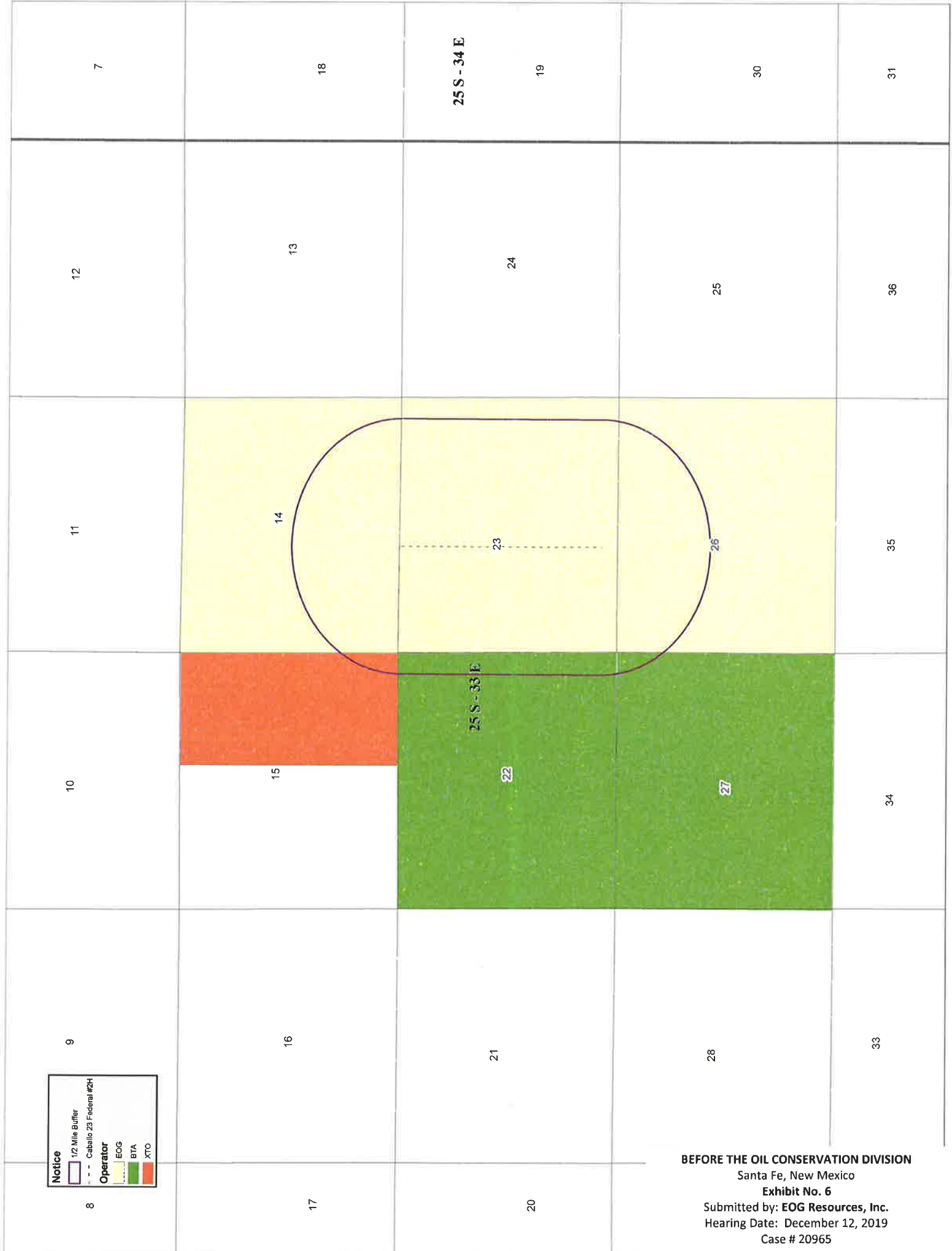


BEFORE THE OIL CONSERVATION DIVISION  
Santa Fe, New Mexico  
Exhibit No. 5  
Submitted by: EOG Resources, Inc.  
Hearing Date: December 12, 2019  
Case # 20965



**Notice**

-  1/2 Mile Buffer
-  Cabello 23 Federal #2H
- Operator**
-  EOG
-  BTA
-  XTO



**BEFORE THE OIL CONSERVATION DIVISION**  
 Santa Fe, New Mexico  
**Exhibit No. 6**  
 Submitted by: **EOG Resources, Inc.**  
 Hearing Date: December 12, 2019  
 Case # 20965





Adam G. Rankin  
Phone (505) 988-4421  
Fax (505) 983-6043  
agrarkin@hollandhart.com

November 22, 2019

**VIA CERTIFIED MAIL**  
**CERTIFIED RECEIPT REQUESTED**

**TO: AFFECTED PARTIES**

**Re: Application of EOG Resources, Inc. for a Gas Capture Pilot Project Involving the Occasional Injection of Produced Gas into the Bone Spring Formation, Lea County, New Mexico.  
Caballo 23 Fed No. 2H Well**

Ladies & Gentlemen:

This letter is to advise you that EOG Resources, Inc. has filed the enclosed application with the New Mexico Oil Conservation Division. A hearing has been requested before a Division Examiner on December 12, 2019 and the status of the hearing can be monitored through the Division’s website at <http://www.emnrd.state.nm.us/ocd/>. Division hearings will commence at 8:15 a.m. in Porter Hall at the Oil Conservation Division’s Santa Fe Offices located at 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505. You are not required to attend this hearing, but as an owner of an interest that may be affected by this application, you may appear and present testimony. Failure to appear at that time and become a party of record will preclude you from challenging the matter at a later date.

Parties appearing in cases are required by Division Rule 19.15.4.13.B to file a Pre-hearing Statement four business days in advance of a scheduled hearing. This statement must be filed at the Division’s Santa Fe office at the above specified address and should include: the names of the parties and their attorneys; a concise statement of the case; the names of all witnesses the party will call to testify at the hearing; the approximate time the party will need to present its case; and identification of any procedural matters that are to be resolved prior to the hearing.

If you have any questions about this matter please contact Sarah Mitchell, at (432) 848-9133 or [sarah\\_mitchell@eogresources.com](mailto:sarah_mitchell@eogresources.com).

Sincerely,  
  
Adam G. Rankin  
**ATTORNEYS FOR EOG RESOURCES, INC.**

13816087\_v1

EOG - Caballo 23 Fed No. 2H  
Case No. 20965

Postal Delivery Report

Tracking Number	Recipient	Status
9214890194038399904486	BTA Oil Producers LLC Attn: Willis Price Land Manager 104 South Pecos Midland TX 79701	Delivered Signature Received
9214890194038399904493	XTO Energy Attn: Permian Basin Land Department 22777 Springwoods Village Pkwy Spring TX 77389	Delivered Signature Received
9214890194038399904509	COG Operating LLC Attn: Land Department 600 W Illinois Ave Midland TX 79701	Delivered Signature Received
9214890194038399904516	Bureau of Land Management 301 Dinosaur Trail Santa Fe NM 87508	Delivered Signature Received
9214890194038399904523	Bureau of Land Management 620 E Greene St Carlsbad NM 88220	Delivered Signature Received



\$5.60 x 5 = (\$28)

# Shipment Confirmation Acceptance Notice

## A. Mailer Action

**Note to Mailer:** The labels and volume associated to this form online, **must** match the labeled packages being presented to the USPS® employee with this form.

EOG - Caballo 23 Fed No. 2H  
Case No. 20965  
CM# 44497.0001

Shipment Date: 11/22/2019

Shipped From:

Name: HOLLAND & HART LLP

Address: 110 N GUADALUPE ST # 1

City: SANTA FE

State: NM ZIP+4® 87501

Type of Mail	Volume
Priority Mail Express®*	
Priority Mail®	0
First-Class Package Service®	
Returns	
International*	
Other	5
Total	5

\*Start time for products with service guarantees will begin when mail arrives at the local Post Office™ and items receive individual processing and acceptance scans.

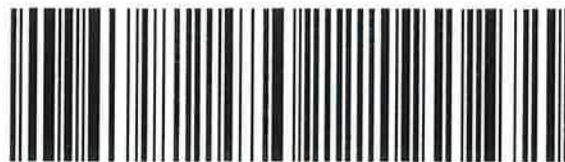
## B. USPS Action

Note to RSS Clerk:

1. Home screen > Mailing/Shipping > More
2. Select Shipment Confirm
3. Scan or enter the barcode/label number from PS Form 5630
4. Confirm the volume count message by selecting Yes or No
5. Select Pay and End Visit to complete transaction

USPS EMPLOYEE: Please scan upon pickup or receipt of mail. Leave form with customer or in customer's mail receptacle.

USPS SCAN AT ACCEPTANCE



9275 0901 1935 6200 0018 5758 89





# Affidavit of Publication

STATE OF NEW MEXICO  
COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated  
November 28, 2019  
and ending with the issue dated  
November 28, 2019.

  
\_\_\_\_\_  
Publisher

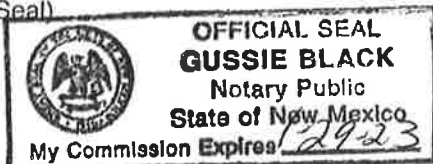
Sworn and subscribed to before me this  
28th day of November 2019.

  
\_\_\_\_\_  
Business Manager

My commission expires

January 29, 2023

(Seal)



This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

LEGAL

LEGAL

LEGAL

LEGAL NOTICE  
NOVEMBER 28, 2019

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION  
SANTA FE, NEW MEXICO

The State of New Mexico through its Oil Conservation Division hereby gives notice pursuant to law and the Rules and Regulations of the Division of the following public hearing to be held at 8:15 A.M. on **December 12, 2019**, in Porter Hall, the Oil Conservation Division Hearing Room, 1st Floor, Wendell Chino Building, 1220 South St. Francis, Santa Fe, New Mexico, before an examiner duly appointed for the hearing. If you are an individual with a disability who is in need of a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing, please contact: Florene Davidson at 505-476-3458 or through the New Mexico Relay Network, 1-800-659-1779 by **December 2, 2019**. Public documents, including the agenda and minutes, can be provided in various accessible formats. Members of the public may obtain copies of the docket by contacting Ms. Davidson at the phone number indicated above. Also, the docket will be posted on the Oil Conservation Division website at [www.emnrd.state.nm.us/OCD/](http://www.emnrd.state.nm.us/OCD/). Please contact Ms. Davidson if a summary or other type of accessible form is needed.

**STATE OF NEW MEXICO TO:**  
All named parties and persons  
having any right, title, interest  
or claim in the following case  
and notice to the public.

(NOTE: All land descriptions herein refer to the New Mexico Principal Meridian whether, or not so stated.)

To: All affected parties, including: BTA Oil Producers, LLC; XTO Energy; COG Operating LLC; and Bureau of Land Management.

**CASE 20965: Application of EOG Resources, Inc. for a Gas Capture Pilot Project Involving the Occasional Injection of Produced Gas into the Bone Spring Formation, Lea County, New Mexico.** Applicant in the above-styled cause seeks an order authorizing it to engage in a gas capture pilot project in the Leonard Shale interval of the Bone Spring formation by occasionally injecting into its the **Caballo 23 Fed No. 2H Well** (API No. 30-025-40051), a horizontal well located in the E/2 W/2 (Unit C) of Section 23, Township 25 South, Range 33 East, NMPM, in Lea County, New Mexico. This well is currently producing from the Bone Spring formation (Red Hills; Upper Bone Spring Shale Pool [Pool Code 97900]) and dedicated to a standard horizontal well spacing unit comprised of the E/2 W/2 of Section 23. EOG seeks to authority to utilize this producing well to occasionally inject produced gas into the Leonard Shale interval of the Bone Spring formation at a total vertical depth of approximately 9,418 feet to 9,457 feet along the horizontal portion of the wellbore at surface injection pressures of no more than 3,500 psi. The source of the produced gas will be the Bone Spring, Wolfcamp and Atoka formations delivered to the Localized Gas Lift Compressor Station. The subject acreage is located approximately 20 miles west of Jal, New Mexico.  
**#34908**

67100754

00236541

HOLLAND & HART LLC  
PO BOX 2208  
SANTA FE, NM 87504-2208

BEFORE THE OIL CONSERVATION DIVISION

Santa Fe, New Mexico

Exhibit No. 8

Submitted by: EOG Resources, Inc.

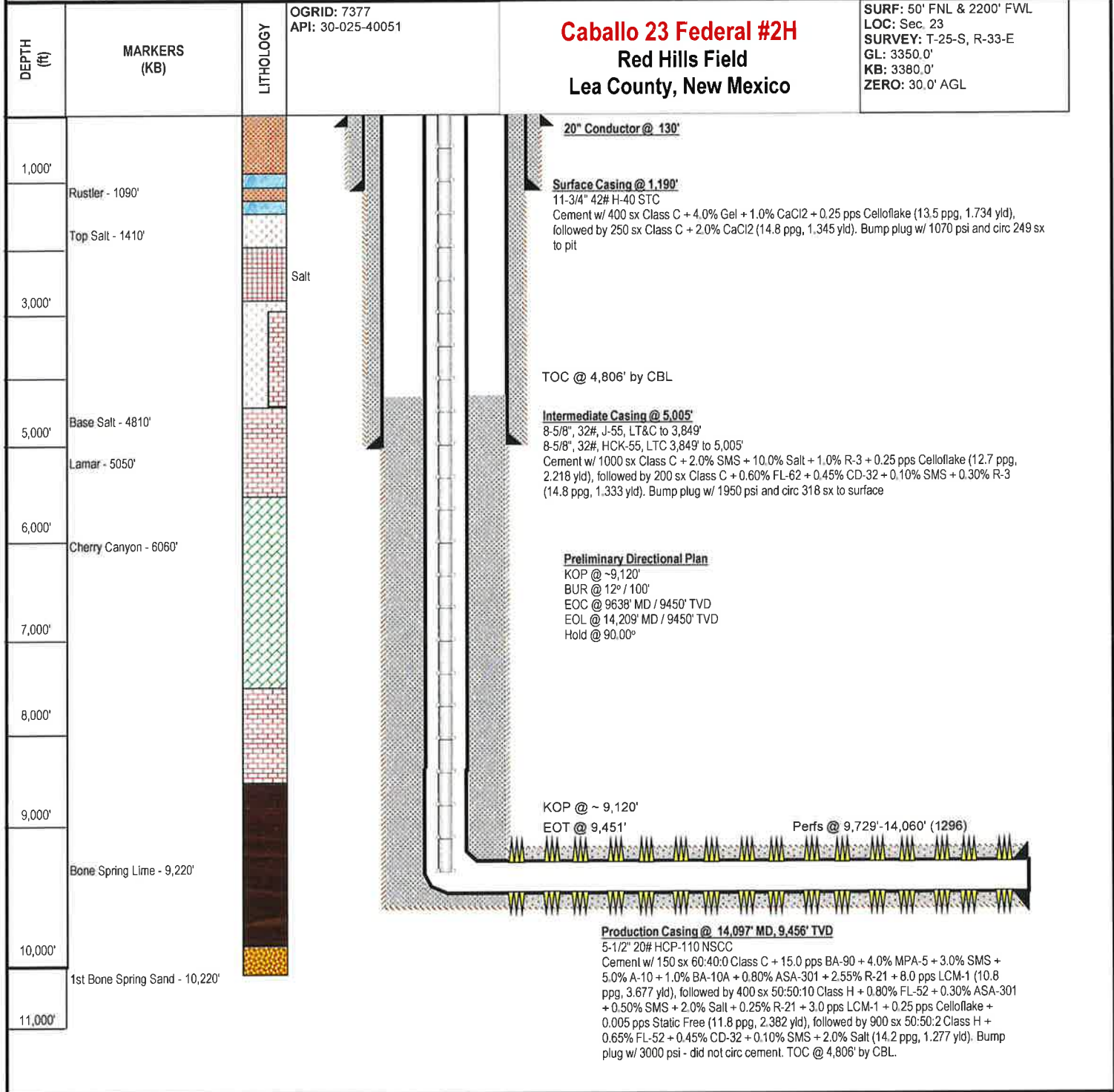
Hearing Date: December 12, 2019

Case # 20965





# CURRENT WELL SKETCH



EOG Resources  
 Well Name: Caballo 23 Federal #2H  
 Operator: EOG Resources  
 Field: Red Hills  
 Location: NW/4 Sec 23, T-25-S, R-33-E  
 County, State: Lea County, NM  
 Spud Date: 10/27/2011 @ 13:00 hrs  
 FRR Date: 11/13/11 @ 01:30 hrs  
 Orig. Rig: Caclus 123  
 Planned TD: ~14,209' MD, 9450' TVD  
 Final TD: 14,110' MD, 9456' TVD

Bit Size, In	Depth	Shoe Test	Casing Program
-	130'	---	20" Conductor
17.5"	1,190'		11-3/4" 42# J-55 STC
12.25"	5,005'		8-5/8", 32#, J-55, LT&C to 3,648', 8-5/8", 32#, HCK-55, LT&C to TD
8.75"	14,097'		5-1/2" 20# HCP-110 NSCC

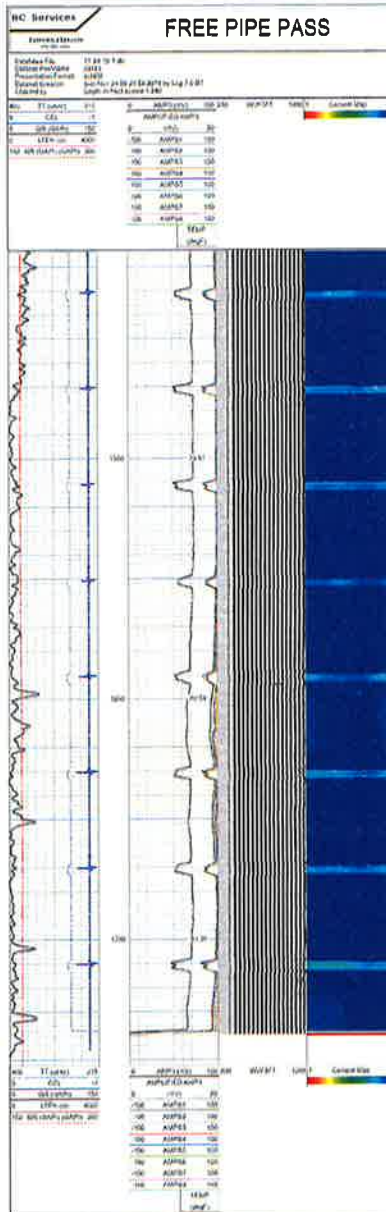
Days	Depth	Fl/Day	Mud Weight	Cost \$M	Remarks	Report Date	Daily Cost
0	130'	0'	-		Begin MIRU Cactus 123.	25-Oct-11	
0	130'	0'	-		MIRU Cactus 123. Set house, generators & drawworks. String up blocks.	26-Oct-11	
0	130'	0'	-		MIRU Cactus 123. Raise derrick. Hook up electric, weld on 20" conductor, mix spud mud.	27-Oct-11	
1	1,190'	1,060'	8.5		Finish welding 20" conductor, RU flowline, mix spud mid, install mouse hole, test lines to 1500 psi (4.0 hrs), MU & RIH w/ BHA, drill cement 100' - 130' (4.0 hrs). Spud well 10/27/2011 @ 13:00 hrs, Drill and survey 130' - 1190' TD (1060'/1.0 hrs = 96.3 fph, 27k WOB, 70 SRPM, 94 MRPM, 881 GPM). Last survey .35' @ 1045', Pump & circ sweeps, TOH (1.75 hrs).	28-Oct-11	
2	1,190'	0'	10.0		LD BHA (2.0 hrs), Rig repair - Top Drive (1.0 hr), RU casers and RIH w/ 11-3/4" 42# H-40 STC casing and set @ 1190' (5.25 hrs), RU BJ Services and cement w/ 400 sx Class C + 4.0% Gel + 1.0% CaCl2 + 0.25 pps Celloflake (13.5 ppg, 1.734 yld), followed by 250 sx Class C + 2.0% CaCl2 (14.8 ppg, 1.345 yld), Bump plug w/ 1070 psi and circ 248 sx to pil (1.75 hrs), WOC and RU Scientific and run gyro (4.0 hrs), Cut conductor, casing and NU wellhead and test to 800 psi - OK (3.0 hrs), NU BOPE (5.75 hrs).	29-Oct-11	
3	1,795'	605'	10.0		Finish NU BOPE and test 250 / 3000 psi - OK (10.0 hrs), Test casing to 1400 psi - OK (0.5 hr), Install wear bushing and service rig (1.0 hr), PU BHA and TIH - tag cement @ 1095' (3.25 hrs), Drill cement & FE (1.25 hrs), Drill new formation 1190' - 1795' (605'/4.25 hrs = 142.3 fph, 15k WOB, 65 RRP, 138 MRPM, 835 GPM). Last survey 0.7' @ 1615', Rig repair - Swivel packing (2.0 hrs).	30-Oct-11	
4	3,685'	1,890'	10.2		Rig repair-WO & change swivel packing (3.75 hrs). Rotate, slide drill and survey 1795' - 3685' (1890'/14.5 hrs = 130.3 fph, 27k WOB, 65 SRPM, 123 MRPM, 742 GPM). Last survey 3522' MD, 262.4" AZM.	31-Oct-11	
5	5,005'	1,320'	10.5		Slide, rotate and survey 3685' - 5005' TD (1320'/15.0 hrs = 88.0 fph, 30k WOB, 70 RRP, 123 MRPM, 742 GPM). Survey 1.2" # 4857' (0.25 hr). Circ BU (1.0 hr), TOH and LD DC's (4.25 hrs), RU casers (2.0 hrs).	01-Nov-11	
6	5,005'	0'	10.4		RU casers (2.0 hrs), RIH w/ 8-5/8" 32# J-55 / HCK-55 LTC and set @ 5005' (5.5 hrs), Circ thru casing, RD casers and WO BJ (3.0 hrs), RU BJ and cement w/ 1000 sx Class C + 2.0% SMS + 10.0% Salt + 1.0% R-3 + 0.25 pps Celloflake (12.7 ppg, 2.218 yld), followed by 200 sx Class C + 0.60% FL-62 + 0.45% CD-32 + 0.10% SMS + 0.30% R-3 (14.8 ppg, 1.333 yld), Bump plug w/ 1950 psi and circ 318 sx to surface (3.25 hrs), RD BJ, ND BOPE, set slips (1.75 hrs), WOC (4.0 hrs), Cut casing, install "B" section and test to 1700 psi - OK (2.5 hrs), NU BOPE (1.5 hrs).	02-Nov-11	
7	6,230'	1,225'	8.3		Test BOPE 250 / 3000 psi - OK (4.5 hrs), Test casing to 2000 psi - OK (0.5 hr), Install wear bushing and service rig (1.0 hr), MU BHA and TIH - tag cement @ 4880' (3.5 hrs), Drill cement & FE (1.0 hr), Drill new formation 500' - 6230' (1225'/11.0 hrs = 111.3 fph, 25k WOB, 65 RRP, 96 MRPM, 566 GPM). Last survey 0.3" @ 6035'.	03-Nov-11	
8	8,005'	1,775'	9.0		Rotate and survey 6230' - 8005' (1775'/21.25 hrs = 83.5 fph, 30k WOB, 70 RRP, 96 MRPM, 566 GPM). Last survey 0.6" @ 7752'.	04-Nov-11	
9	8,930'	825'	8.0		Drill and survey 8005' - 8930' KOP (825'/14.75 hrs = 62.7 fph, 35k WOB, 70 RRP, 102 MRPM, 603 GPM). Survey 0.6" @ 8869' (0.25 hr), Circ BU - lost 200 psi - pump softline w/ no hil (1.0 hr), TOH and LD DC's (6.5 hrs).	05-Nov-11	
10	9,240'	310'	9.1		Finish LD DC's and BHA (3.0 hrs), Function test BOPE (0.25 hr), PU curve assy (0.75 hr), TIH and wash to bottom (4.5 hrs), Slide and survey 8930' - 9240' (310'/13.75 hrs = 22.5 fph, 40k WOB, 140 MRPM, 501 GPM). Last survey 9176' MD, 25.8" INC, 179.80" AZM.	06-Nov-11	
11	9,465'	225'	8.8		Slide and survey 9240' - 9390' (150'/6.5 hrs = 23.1 fph, 38k WOB, 140 MRPM, 501 GPM). Survey 9335' MD, 41.6" INC, 177.90" AZM. Not getting required build rates - TOH for 2.38" motor (4.25 hrs), LD motor, function test BOPE and PU 2.38" motor and new bil (1.75 hrs), TIH and wash to bottom (5.25 hrs), Slide and survey 9390' - 9465' (75'/4.25 hrs = 17.6 fph, 38k WOB, 158 MRPM, 566 GPM). Last survey 9399' MD, 48.30" INC, 177.70" AZM.	07-Nov-11	
12	9,720'	255'	8.9		Slide, rotate and survey 9465' - 9570' (105'/5.75 hrs = 18.3 fph, 45k WOB, 158 MRPM, 566 GPM). Circ BU and TOH for lateral assy (4.5 hrs), LD curve assy and PU lateral assy (1.75 hrs), TIH and wash to bottom (5.5 hrs), Slide, rotate and survey 9570' - 9720' (150'/4.5 hrs = 33.3 fph, 20k WOB, 60 RRP, 83 MRPM, 487 GPM). Last survey 9623' MD, 82.5" INC, 178.6" AZM.	08-Nov-11	
13	11,375'	1,655'	9.0		Slide, rotate and survey 9720' - 11,375' (1655'/18.25 hrs = 90.7 fph, 25k WOB, 73 RRP, 83 MRPM, 487 GPM). Last survey 11,278' MD, 89.7" INC, 179.10" AZM.	09-Nov-11	
14	11,948'	573'	9.0		Lost 200 psi - TOH for washout (7.25 hrs), C/O motor and re-run bil (1.75 hrs), TIH and wash to bottom (7.0 hrs), Rotate, slide and survey 11,375' - 11,948' (573'/5.25 hrs = 109.1 fph, 25k WOB, 70 RRP, 83 MRPM, 487 GPM). Last survey 11,768' MD, 90.7" INC, 180.2" AZM.	10-Nov-11	
15	14,080'	2,132'	9.0		Rotate, slide and survey 11,948' - 14,080' (2132'/18.25 hrs = 116.8 fph, 27k WOB, 70 RRP, 83 MRPM, 487 GPM). Last survey 13,987' MD, 90.0" INC, 179.8" AZM.	11-Nov-11	
16	14,110'	30'	9.2		Drill 14,080' - 14,110' TD (30'/0.25 hr = 120.0 fph, 30k WOB, 70 RRP, 487 GPM). Circ BU (3.0 hrs), TOH, LD DP and BHA (14.25 hrs), RU casers and torque turn (3.0 hrs), RIH w/ 5-1/2" 20# HCP-110 NSCC casing (6.0 hrs).	12-Nov-11	
17	14,110'	0'	-		Finish RIH w/ 5-1/2" 20# HCP-110 NSCC casing and set @ 14,087' (8.5 hrs), Circ thru casing (2.0 hrs), RU BJ Services and cement w/ 150 sx 60:40:0 Class C + 15.0 pps BA-90 + 4.0% MPA-5 + 3.0% SMS + 5.0% A-10 + 1.0% BA-10A + 0.80% ASA-301 + 2.55% R-21 + 8.0 pps LCM-1 (10.8 ppg, 3.677 yld), followed by 400 sx 50:50:10 Class H + 0.80% FL-52 + 0.30% ASA-301 + 0.50% SMS + 2.0% Salt + 0.25% R-21 + 3.0 pps LCM-1 + 0.25 pps Celloflake + 0.005 pps Static Free (11.8 ppg, 2.382 yld), followed by 900 sx 50:50:2 Class H + 0.55% FL-52 + 0.45% CD-32 + 0.10% SMS + 2.0% Salt (14.2 ppg, 1.277 yld), Bump plug w/ 3000 psi - did not circ cement (4.0 hrs), ND BOPE, cut casing and NU tbg head and test to 5000 psi - OK (6.0 hrs). Release rig 11/13/11 @ 01:30 hrs. Prep to move to Caballo 23 Federal #5H.	13-Nov-11	

**BC Services**  
 RENTAL CONTRACT BOND  
 (General Reg/Order Log)

Company: EOC  
 Name: CDFALDZ RES INC  
 Field: Santa Fe  
 County: Line  
 License: 125

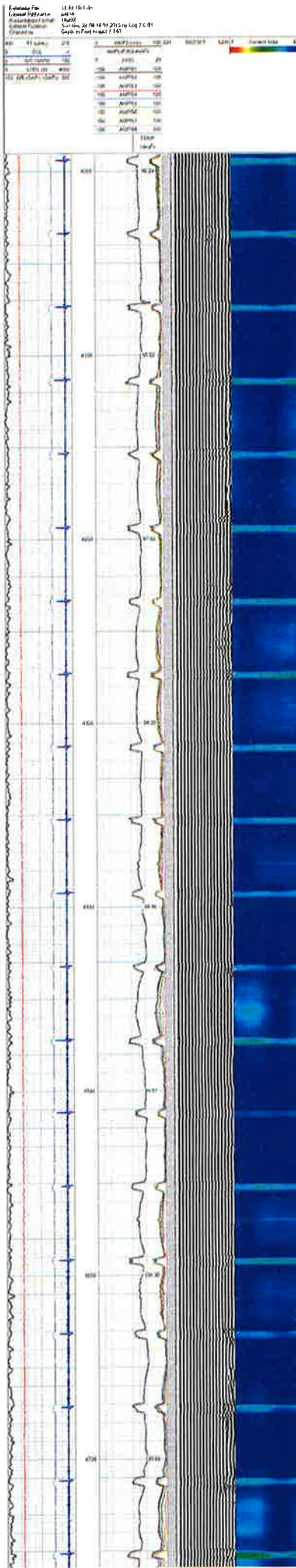
DATE: 12/11/19  
 TIME: 10:00 AM  
 WELL: 125-10000-10000  
 DEPTH: 10000  
 LOG: 10000

MARKER JONTAG RT21-0.75' -OF CORRECTION

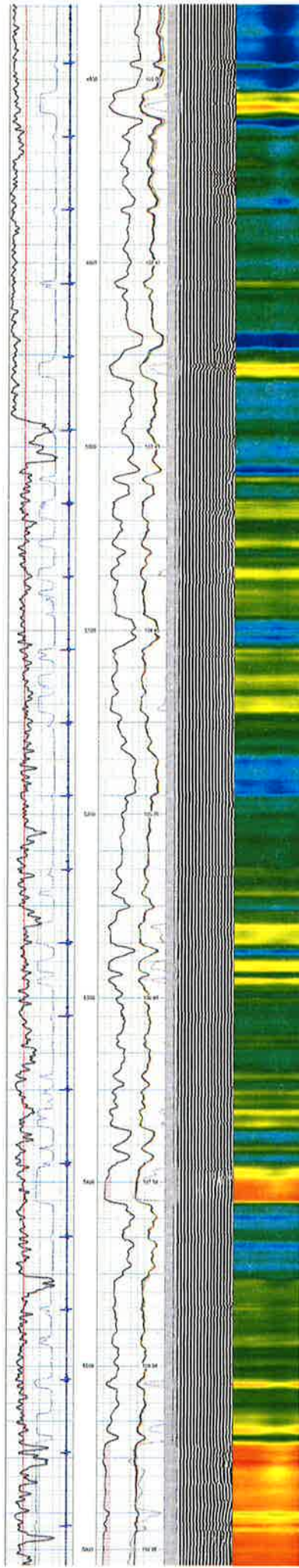


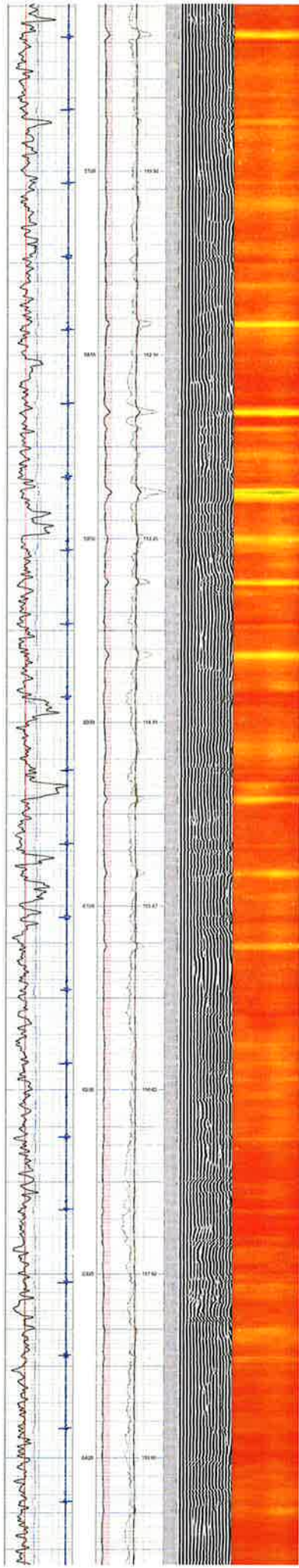
**BC Services**  
**MAIN 1000 PSI PASS**

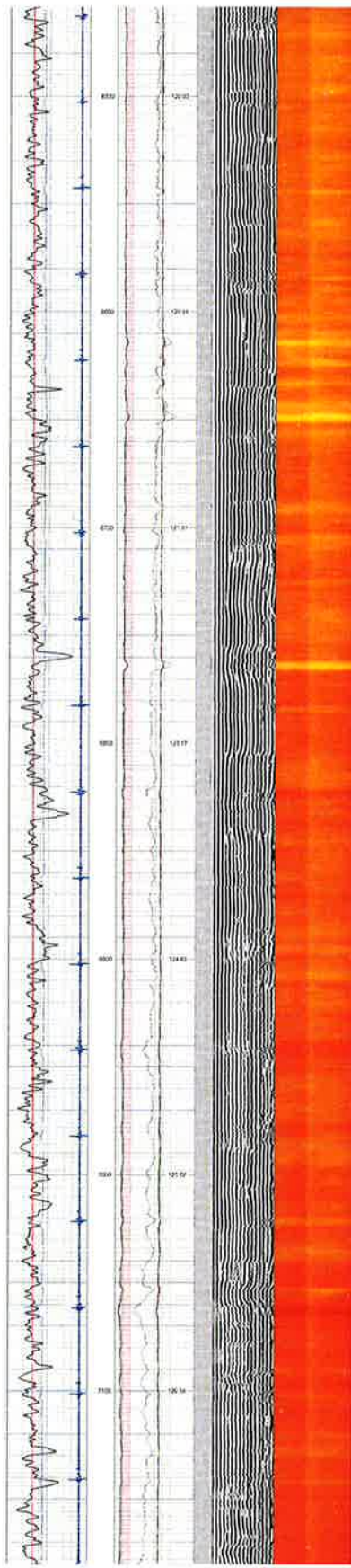
BEFORE THE OIL CONSERVATION DIVISION  
 Santa Fe, New Mexico  
 Exhibit No. 11  
 Submitted by: EOG Resources, Inc.  
 Hearing Date: December 12, 2019  
 Case # 20965



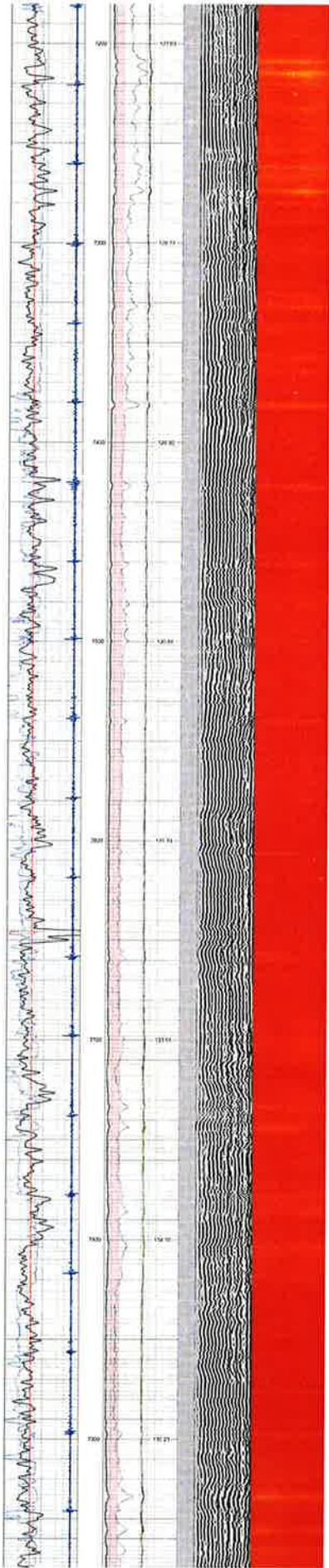


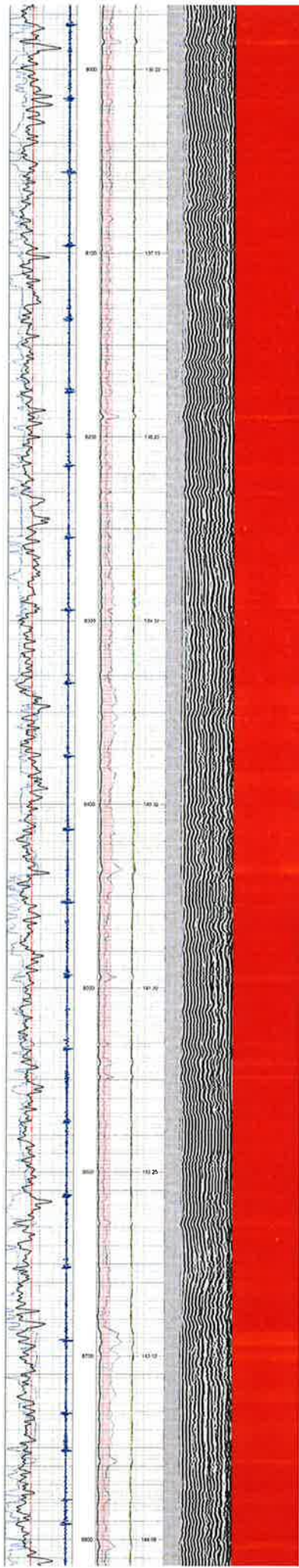




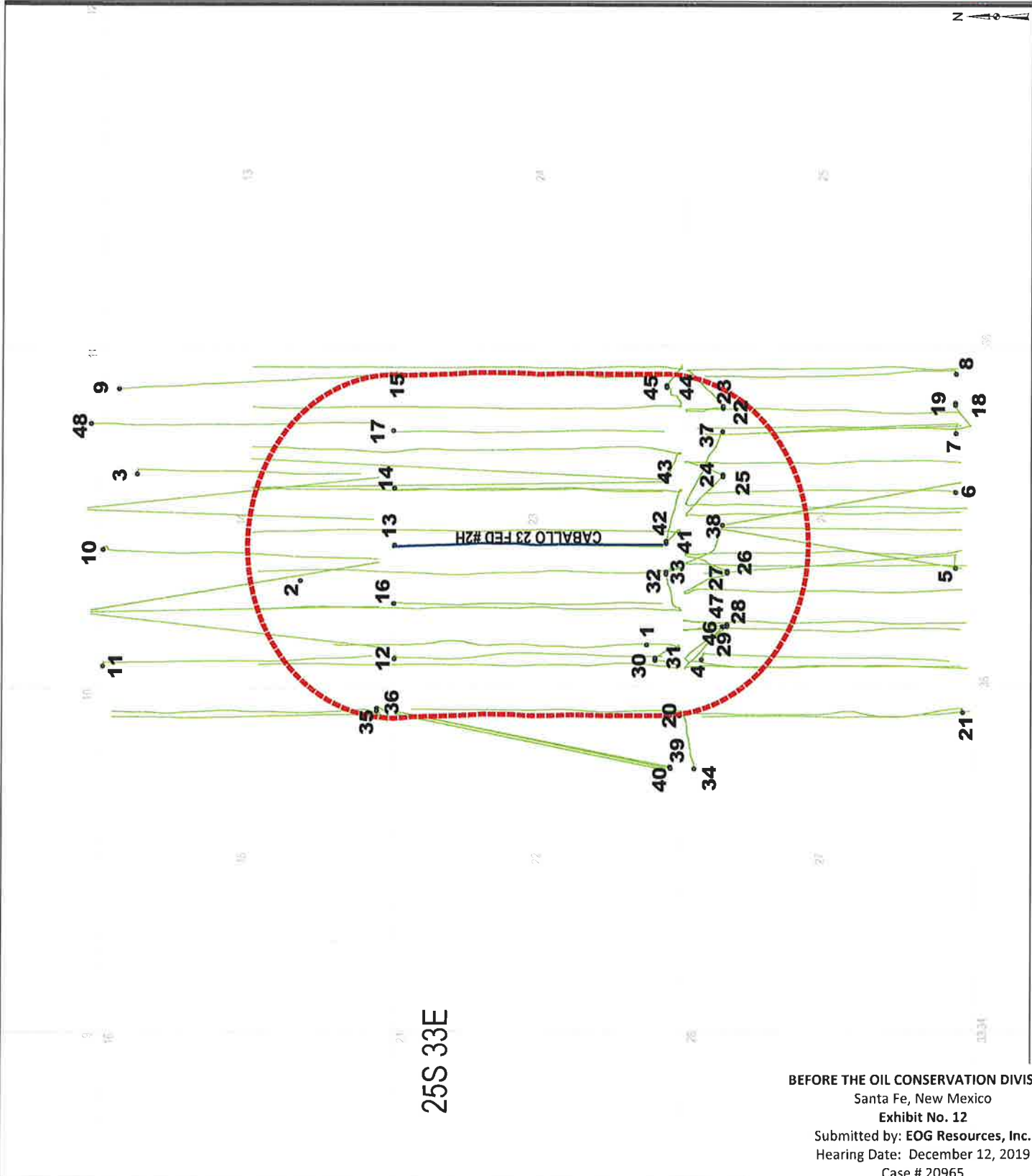






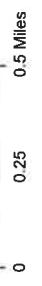






**Caballo 23 Fed 2H 1/2 Buffer Zone**

- Caballo 23 Fed 1/2 Mile Buffer
- Caballo\_23\_Fed
- Caballo\_Buffer\_Zone\_Wellpaths



25S 33E

BEFORE THE OIL CONSERVATION DIVISION  
 Santa Fe, New Mexico  
 Exhibit No. 12  
 Submitted by: EOG Resources, Inc.  
 Hearing Date: December 12, 2019  
 Case # 20965

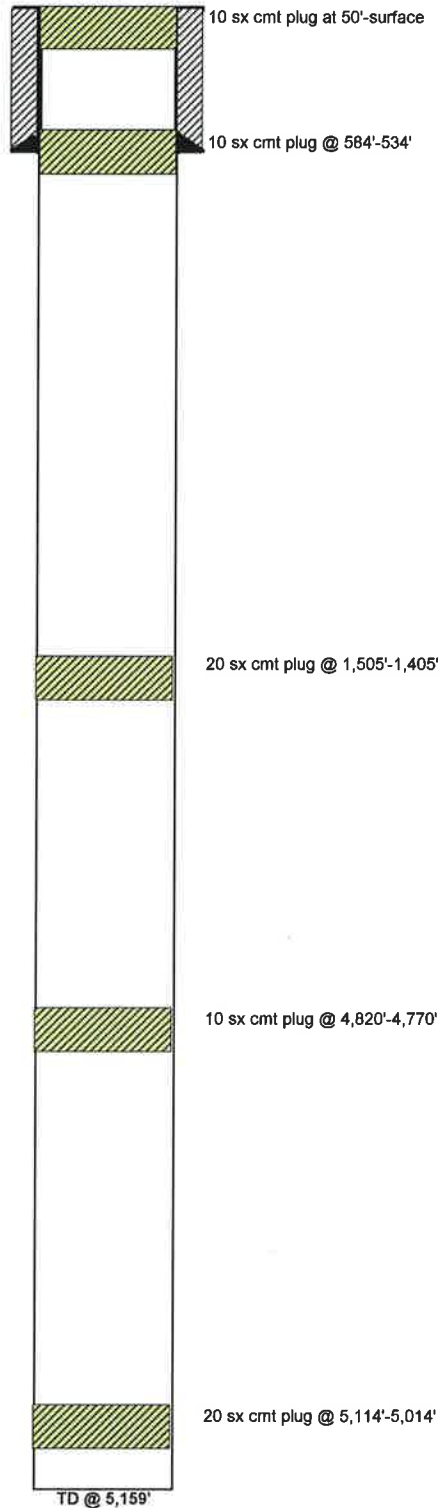
Well Name: Muse Federal 23 #1  
Location: 660' FSL & 660' FWL Sec. 23-25S-33E  
County: Lea, NM  
Lat/Long: 32.1105843,-103.5494843 NAD83  
API #: 30-025-08387  
Spud Date: 10/17/62  
Compl. Date: P&A 10/26/62

Operator: Hill & Meeker

**Wellbore Diagram:**

KB:  
GL: 3,352'

7" 23# @ 534'  
Cmt w/ 100 sx (circ)



BEFORE THE OIL CONSERVATION DIVISION  
Santa Fe, New Mexico  
Exhibit No. 13  
Submitted by: EOG Resources, Inc.  
Hearing Date: December 12, 2019  
Case # 20965

Not to Scale  
By: BAL 11/25/19



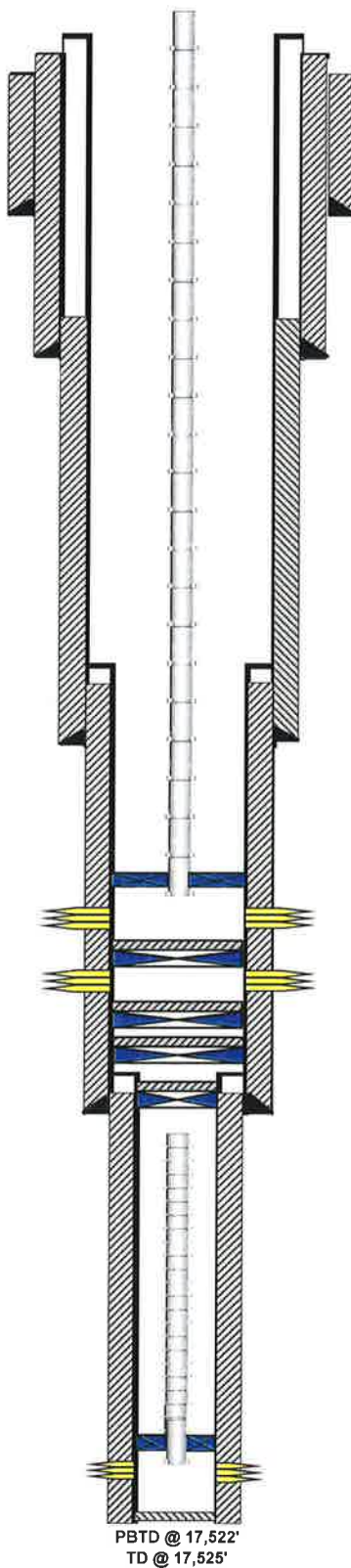
**Well Name:** Rojo 7811 JV-P #1  
**Location:** 660' FNL & 660' FWL Sec. 27-25S-34E  
**County:** Lea, NM  
**Lat/Long:** 32.1069794,-103.5665817 NAD83  
**API #:** 30-025-26188  
**Spud Date:** 2/9/79  
**Compl. Date:** RC 4/28/09

**Operator:** BTA Oil Producers

**Wellbore Diagram:**

KB: 3,369'  
GL: 3,339'

26" Hole  
  
 20" 94# @ 909'  
 Cmt w/ 1650 sx (circ)  
  
 17-1/2" Hole  
  
 13-3/8" 68# & 73# @ 4,936'  
 Cmt w/ 3,400 sx (circ)  
  
 12-1/4" Hole  
  
  
  
  
  
  
  
  
  
 7-3/4" Liner Hanger @ 12,594'  
  
 9-5/8" 47# & 53.5# @ 12,992'  
 Cmt w/ 2300 sx, TOC @ 4,890'  
  
 8-1/2" Hole  
  
  
  
  
  
  
  
  
  
 5" Liner Hanger @ 16,547'  
 7-3/4" 46.1# @ 16,690'  
 Cmt w/ 450 sx  
  
 6-1/2" Hole  
  
  
  
  
  
  
  
  
  
 5" 23.2# @ 17,524'  
 Cmt w/ 150 sx  
  
  
 PBTB @ 17,522'  
 TD @ 17,525'



Formation Tops	
Anhydrite	1,037
Delaware	4,939
Bone Spring	9,325
Wolfcamp LM	11,484
Atoka Sand	14,344
Morrow Shale	15,558
Mississippian	16,903
Woodford	17,255
Devonian	17,412

2-7/8" lbg w/ pkr set @ 14,235'  
 Atoka perms: 14,346'-14,458'  
 CIBP w/ 40' cmt @ 14,850'  
 Morrow perms: 15,048'-15,856'  
 CIBP w/ 40' cmt @ 16,100'  
 CIBP w/ 40' cmt @ 16,433'  
 CIBP w/ 40' cmt @ 16,622'  
 Cut 2-7/8" lbg @ 16750

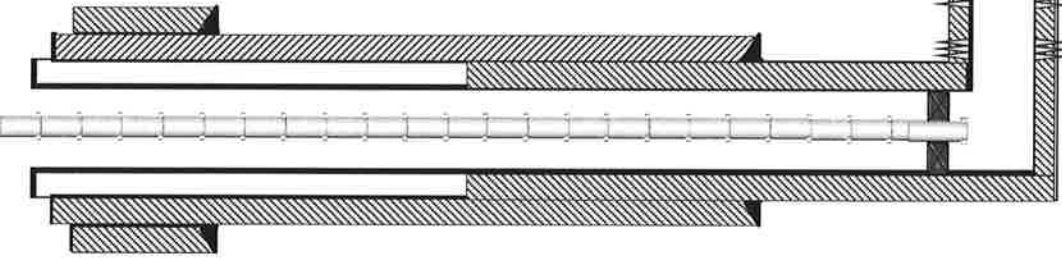
5" Baker pkr @ 17,320'  
 Devonian perms: 17,420'-17,515'

Not to Scale  
 By: BAL 11/25/19

Operator: BTA Oil Producers

Well Name: Rojo 7811 JV-P Fed Com #2H  
Location: 50' FSL & 430' FEL Sec. 22-25S-33E  
County: Lea, NM  
Lat/Long: 32.108913685,-103.55300863  
API #: 30-025-42414  
Spud Date: 3/20/15  
Compl. Date: 5/6/15

Formation Tops	
Rustler	1,048
Top of Salt	1,415
Base of Salt	4,732
Lamar	4,972
Bell Canyon	5,022
Cherry Canyon	6,091
Brushy Canyon	7,662
Bone Spring LM	9,180



**Wellbore Diagram:**

KB: 3,363'  
GL: 3,345'

17-1/2" Hole

13-3/8" 54.5# J-55 @ 1,174'  
Cmt w/ 1,040 sx (circ)

12-1/4" Hole

TOC @ 3,380' by CBL

9-5/8" 40# J-55 @ 5,021'  
Cmt w/ 1,720 sx (circ)

8-3/4" Hole

5-1/2" 17# P-110 @ 14,092'  
Cmt w/ 1,900 sx

TD 14,092'  
TVD 9,371'  
PBTD 14,040'

Bone Spring perms: 9,556'-14,000'

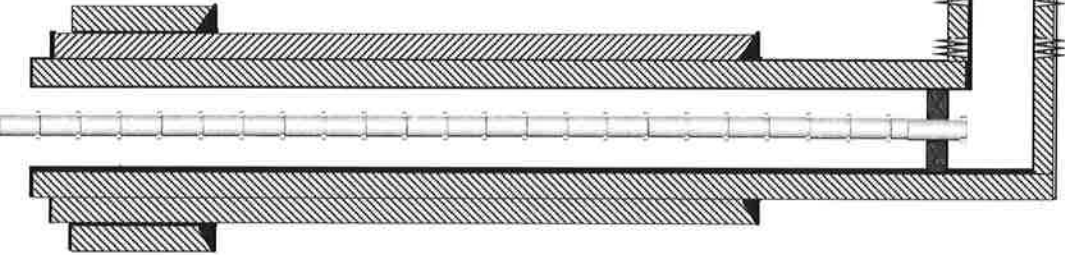
Not to Scale  
By: EAL 11/26/19



Operator: BTA Oil Producers

Well Name: Rojo C.7811 JV-P #1H  
Location: 190' FSL & 380' FEL Sec. 27-25S-33E  
County: Lea, NM  
Lat/Long: 32.094789075, -103.55283553  
API #: 30-025-42458  
Spud Date: 8/30/15  
Compl. Date: 12/18/15

Formation Tops	
Rustler	1,024
Top of Salt	1,401
Base of Salt	4,867
Lamar	4,989
Bell Canyon	5,033
Cherry Canyon	6,037
Brushy Canyon	7,597
Bone Spring LM	9,107



**Wellbore Diagram:**

KB: 3,333'  
GL: 3,333'

17-1/2" Hole

13-3/8" 54.5# J-55 @ 1,175'  
Cmt w/ 1,000 sx (circ)

12-1/4" Hole

9-5/8" 40# J-55 @ 5,055'  
Cmt w/ 1,600 sx (circ)

8-3/4" Hole

5-1/2" 17# P-110 @ 13,858'  
Cmt w/ 2,150 sx (circ)

Bone Spring perms: 9,528'-13,770'

TD 13,858'  
TVD 9,376'  
PBTD 13,735'

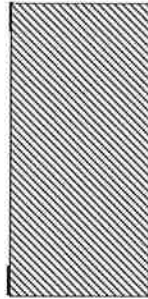
Not to Scale  
By: BAL 11/26/19

**Operator:** BTA Oil Producers

**Well Name:** Rojo 7811 22 Fed Com #14  
**Location:** 220' FSL & 1250' FEL Sec. 22-25S-33E  
**County:** Lea, NM  
**Lat/Long:** 32.109386, -103.555695 NAD83  
**API #:** 30-025-45309  
**Spud Date:** 1/6/19  
**Compl. Date:** 5/14/19

**Wellbore Diagram:**

KB: 3,345'  
GL:



17-1/2" Hole

While drilling 17-1/2" surface hole, at 155' the 20" conductor set at 80' washed out and fell down hole. 114 sx of cement was pumped and circulated to surface.

Formation Tops
Rustler
Top of Salt
Base of Salt
Delaware
Cherry Canyon
Brushy Canyon
Bone Spring LIM
1st Bone Spring
Wolfcamp

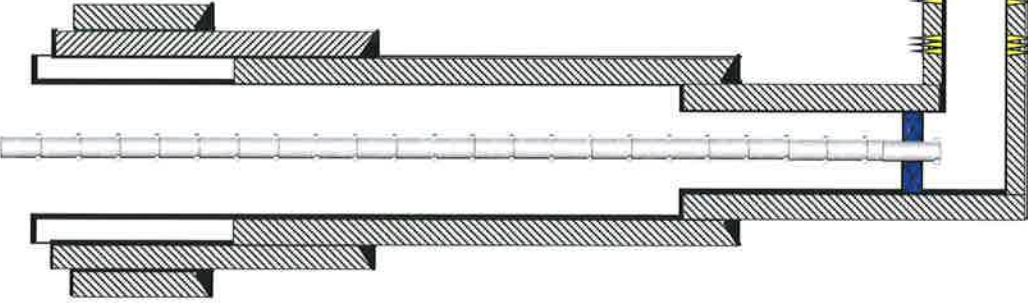
Not to Scale  
By: BAL 11/26/19

**Well Name:** Rojo 7811 22 Fed Com #14Y  
**Location:** 220' FSL & 1220' FEL Sec. 22-25S-33E  
**County:** Lea, NM  
**Lat/Long:** 32.109386, -103.555598 NAD83  
**API #:** 30-025-45446  
**Spud Date:** 1/6/19  
**Compl. Date:** 5/14/19

**Operator:** BTA Oil Producers

**Wellbore Diagram:**

- KB: 3,345'
- GL: 3,345'
- 17-1/2" Hole
- 13-3/8" 54.5# J-55 @ 1,060'  
Cmt w/ 965 sx (circ)
- 12-1/4" Hole
- 9-5/8" 40# J-55 @ 4,979'  
Cmt w/ 1,960 sx (circ)
- 8-3/4" Hole
- 4-1/2" Liner Hanger @ 11,887'
- 7" 29# P-110 @ 12,593'  
Cmt w/ 1,100 sx, TOC @ 1,200'
- 6-1/8" Hole
- 4-1/2" 13# P-110 @ 11,887' - 17,440'  
Cmt w/ 405 sx (circ)



Formation Tops	
Rustler	2,731
Top of Salt	2,897
Base of Salt	4,691
Delaware	4,981
Cherry Canyon	6,410
Brushy Canyon	7,647
Bone Spring LM	9,178
1st Bone Spring	10,068
Wolfcamp	12,280

TD 17,455'  
 TVD 12,527'  
 PBTD 17,440'

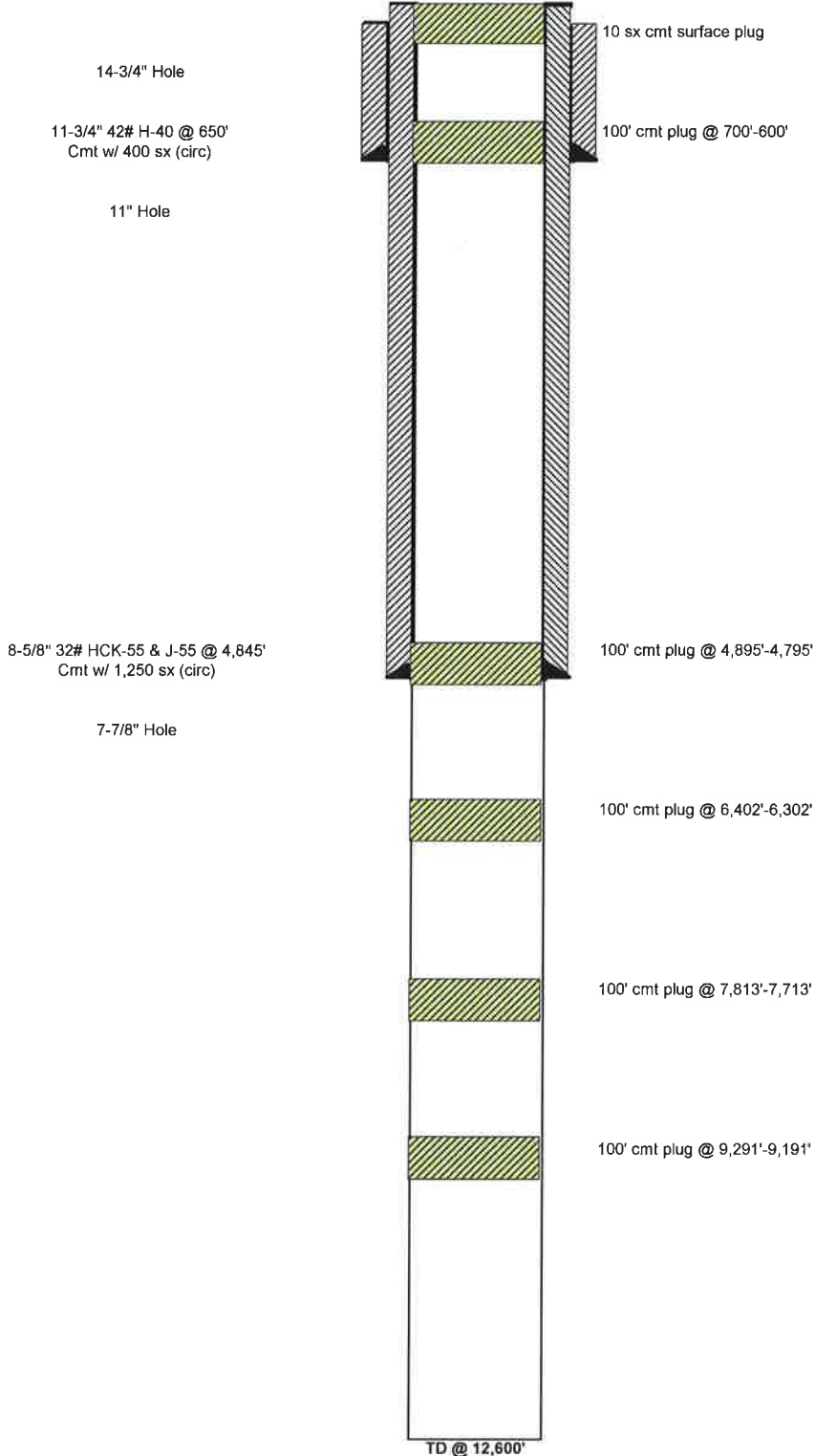
Not to Scale  
 By: BAL 11/26/19

**Well Name:** Vaca 14 Fed #1  
**Location:** 1650' FSL & 1650' FWL Sec. 14-25S-33E  
**County:** Lea, NM  
**Lat/Long:** 32.1278191,-103.5462952 NAD83  
**API #:** 30-025-34118  
**Spud Date:** 9/20/97  
**Compl. Date:** P&A 10/6/97



**Current Wellbore Diagram:**

**KB:**  
**GL:** 3,352'



Formation Tops	
Delaware	5,039
Bone Spring	9,218
3rd Bone Sprg	11,896
Wolfcamp	12,316

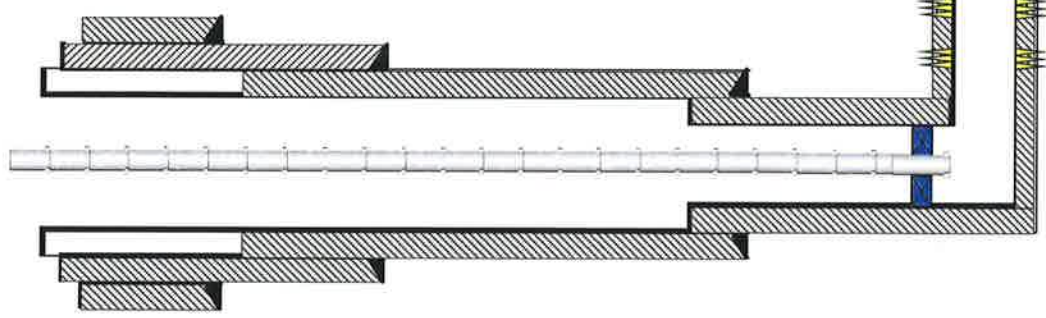
Not to Scale  
 By: BAL 11/25/19

**Operator: BTA Oil Producers**

**Well Name:** Rojo 7811 27 FEE Com #10H  
**Location:** 220' FNL & 1250' FEL Sec. 27-25S-33E  
**County:** Lea, NM  
**Lat/Long:** 32.107872, -103.552724 NAD83  
**API #:** 30-025-44458  
**Spud Date:** 4/30/18  
**Compl. Date:** 9/4/18

**Wellbore Diagram:**

**KB:**  
**GL:** 3,344'



Formation Tops	
Rustler	1,404
Top of Salt	9,792
Base of Salt	5,014
Delaware	
Canyon	
Brushy Canyon	
Bone Spring LM	
1st Bone Spring	
Wolfcamp	12,299

- 17-1/2" Hole
- 12-1/4" Hole
- 9-5/8" 40# J-55 @ 4,952'  
Cmt w/ 1,660 sx (circ)
- 8-3/4" Hole
- 4-1/2" Liner Hanger @ 11,878'  
7" 29# P-110 @ 12,525'  
Cmt w/ 1,265 sx, Calc TOC @ 2,000'
- 6-1/8" Hole
- 4-1/2" 13# P-110 @ 11,878' - 17,434'  
Cmt w/ 380 sx (circ)

TD 17,449'  
 TVD 12,585'  
 PBD 17,434'

Wolfcamp perms: 12,780'-17,155'

**Not to Scale**  
 By: BAL 11/26/19

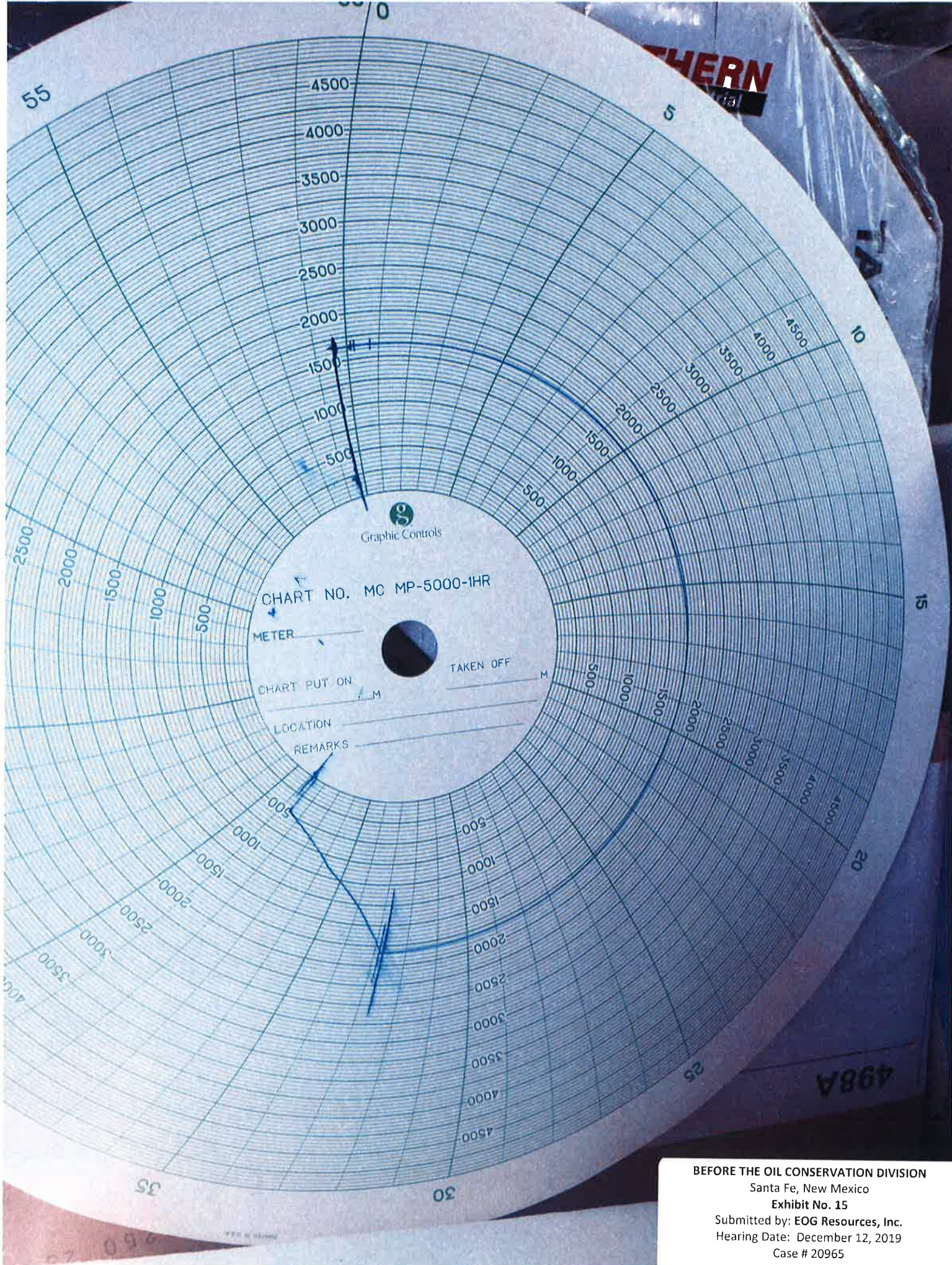
Map Legend																										
Number	API Number	Operator Name	Lease Name	Well Num	Well Type	Status	FTG	N/S	FTG	E/W	Unit	Sec	Tship	Rng	Date Completion	Depth Total Driller	Depth True Vertical	Hole Size	Csg Size	Set At	SX CMT	CMT Top	MTD	DVT	Current Completion	Pool
1	30-025-08387	HILL & MEEKER	MUSE-FEDERAL	1	P	P & A	660 FSL		660 FWL	M			23 25S	33E	10/26/1962	5159	5159 ?	7"	7"	534'	150 Surface	Circ.		N/A	N/A	
2	30-025-34118	EOG RESOURCES INC	VACA 14 FEDERAL	1	P	P & A	1650 FSL		1650 FWL	K			14 25S	33E	10/06/1997	12600	12600	14-3/4"	11-3/4"	650'	400 Surface	Circ.		N/A	N/A	
3	30-025-39327	EOG RESOURCES INC	VACA 14 FEDERAL	3	P	Active	660 FNL		1980 FEL	B			14 25S	33E	09/26/2009	13200	9486	17-1/2"	13-3/8"	1180'	1017 Surface	Circ.				
4	30-025-39531	EOG RESOURCES INC	LOMAS ROJAS STATE COM 26	1H	P	Active	330 FNL		430 FWL	D			26 25S	33E	05/02/2010	13690	9415	8-3/4"	5-1/2"	13171'	1915 5250'	CBL		9740-12890'	Red Hills; Upper Bone Spring Shale [97900]	
5	30-025-39701	EOG RESOURCES INC	LOMAS ROJAS 26 STATE COM	2H	P	Active	330 FSL		1850 FWL	N			26 25S	33E	06/26/2010	13792	9419	8-3/4"	5-1/2"	13665'	2075 4600'	Calc.		9828'-13533'	Red Hills; Lower Bone Spring [51020]	
6	30-025-39702	EOG RESOURCES INC	LOMAS ROJAS 26 STATE COM	3H	P	Active	330 FSL		2262 FEL	O			26 25S	33E	07/19/2010	13742	9436	17-1/2"	13-3/8"	685'	675 Surface	Circ.		9736'-13650'	Red Hills; Lower Bone Spring [51020]	
7	30-025-39703	EOG RESOURCES INC	LOMAS ROJAS 26 STATE COM	4H	P	Active	330 FSL		1350 FEL	O			26 25S	33E	08/04/2010	13850	9442	8-3/4"	5-1/2"	13731'	1975 4450'	CBL		9800-13601'	Red Hills; Lower Bone Spring [51020]	
8	30-025-39704	EOG RESOURCES INC	LOMAS ROJAS 26 STATE COM	5H	P	Active	330 FSL		430 FEL	P			26 25S	33E	08/26/2010	13800	9444	17-1/2"	13-3/8"	688'	675 Surface	Circ.		9910-13727'	Red Hills; Lower Bone Spring [51020]	
9	30-025-39892	EOG RESOURCES INC	VACA 14 FEDERAL	4H	P	Active	330 FNL		660 FEL	A			14 25S	33E	08/08/2012	13800	9469	8-3/4"	5-1/2"	13792'	2000 4500'	Circ.		9840-13711'	Red Hills; Lower Bone Spring [51020]	
10	30-025-39943	EOG RESOURCES INC	VACA 14 FEDERAL	6H	P	Active	50 FNL		2130 FWL	C			14 25S	33E	11/04/2012	14150	9445	8-3/4"	5-1/2"	13800'	1845 4600'	Calc.		9718-13750'	Red Hills; Upper Bone Spring Shale [97900]	
11	30-025-39944	EOG RESOURCES INC	VACA 14 FEDERAL COM	5H	P	Active	50 FNL		330 FWL	D			14 25S	33E	04/10/2011	14092	9422	8-3/4"	5-1/2"	14083'	2075 4600'	Calc.		9517-14050'	Red Hills; Upper Bone Spring Shale [97900]	
12	30-025-40050	EOG RESOURCES INC	CABALLO 23 FEDERAL	1H	P	Active	50 FNL		440 FWL	D			23 25S	33E	07/17/2011	13985	9430	14-3/4"	11-3/4"	1260'	585 Surface	Circ.		9735-13991'	Red Hills; Lower Bone Spring [51020]	
13	30-025-40051	EOG RESOURCES INC	CABALLO 23 FEDERAL	2H	P	Active	50 FNL		2200 FWL	C			23 25S	33E	02/03/2012	14110	9455	8-3/4"	5-1/2"	14092'	1880 4050'	CBL		9735-13991'	Red Hills; Lower Bone Spring [51020]	
14	30-025-40052	EOG RESOURCES INC	CABALLO 23 FEDERAL	3H	P	Active	50 FNL		2200 FWL	C			23 25S	33E	02/03/2012	14110	9455	14-3/4"	11-3/4"	1163'	600 Surface	Circ.		9718-13864'	Red Hills; Lower Bone Spring [51020]	
15	30-025-40053	EOG RESOURCES INC	CABALLO 23 FEDERAL	4H	P	Active	50 FNL		440 FEL	A			23 25S	33E	11/17/2011	14080	9449	7-7/8"	5-1/2"	13965'	1465 4120'	CBL		9718-13864'	Red Hills; Lower Bone Spring [51020]	
16	30-025-40247	EOG RESOURCES INC	CABALLO 23 FEDERAL	5H	P	Active	40 FNL		1295 FWL	D			23 25S	33E	02/09/2012	14025	9437	14-3/4"	11-3/4"	1190'	650 Surface	Circ.		9729-14060'	Red Hills; Upper Bone Spring Shale [97900]	
17	30-025-40248	EOG RESOURCES INC	CABALLO 23 FEDERAL	6H	P	Active	20 FNL		1310 FEL	A			23 25S	33E	11/12/2011	14123	9485	7-7/8"	5-1/2"	14097'	1450 4050'	Calc.		9729-14060'	Red Hills; Upper Bone Spring Shale [97900]	
18	30-025-42156	EOG RESOURCES INC	LOMAS ROJAS 26 STATE COM	501H	P	Active	330 FSL		875 FEL	P			26 25S	33E	05/21/2016	15582	10849	17-1/2"	13-3/8"	1181'	600 Surface	Circ.		9738-14000'	Red Hills; Upper Bone Spring Shale [97900]	











BEFORE THE OIL CONSERVATION DIVISION  
 Santa Fe, New Mexico  
 Exhibit No. 15  
 Submitted by: EOG Resources, Inc.  
 Hearing Date: December 12, 2019  
 Case # 20965





2607G	67453466	Caballo LGL Discharge	
Sample Point Code	Sample Point Name	Sample Point Location	
Laboratory Services	2019024978	1819	R Poole - Spot
Source Laboratory	Lab File No	Container Identity	Sampler
USA	USA	USA	Default
District	Area Name	Field Name	Facility Name
Nov 5, 2019 10:50		Nov 18, 2019 09:11	Nov 18, 2019
Date Sampled	Date Effective	Date Received	Date Reported
37.00	Torrance	1375 @ 132	
Ambient Temp (°F)	Flow Rate (Mcf)	Analyst	Press PSI @ Temp °F Source Conditions
EOG Resources Inc.		H2O=4	
Operator		Lab Source Description	

Component	Mol %	GPM
H2S (H2S)	0.0000	
Nitrogen (N2)	1.2450	
CO2 (CO2)	0.2820	
Methane (C1)	73.1200	
Ethane (C2)	13.3450	3.5680
Propane (C3)	7.3150	2.0150
I-Butane (IC4)	0.9120	0.2980
N-Butane (NC4)	2.2570	0.7110
I-Pentane (IC5)	0.4440	0.1620
N-Pentane (NC5)	0.5010	0.1820
Hexanes Plus (C6+)	0.5790	0.2510
<b>TOTAL</b>	<b>100.0000</b>	<b>7.1870</b>

Gross Heating Values (Real, BTU/ft <sup>3</sup> )			
14.696 PSI @ 60.00 °F		14.73 PSI @ 60.00 °F	
Dry	Saturated	Dry	Saturated
1,334.3	1,312.4	1,337.4	1,315.4
Calculated Total Sample Properties			
GPA2145-16 *Calculated at Contract Conditions			
Relative Density Real		Relative Density Ideal	
0.7800		0.7770	
Molecular Weight			
22.5047			
C6+ Group Properties			
Assumed Composition			
C6 - 60.000%	C7 - 30.000%	C8 - 10.000%	
Field H2S			
1 PPM			

**PROTREND STATUS:** Passed By Validator on Nov 19, 2019  
**DATA SOURCE:** Imported

**PASSED BY VALIDATOR REASON:**  
 Close enough to be considered reasonable.

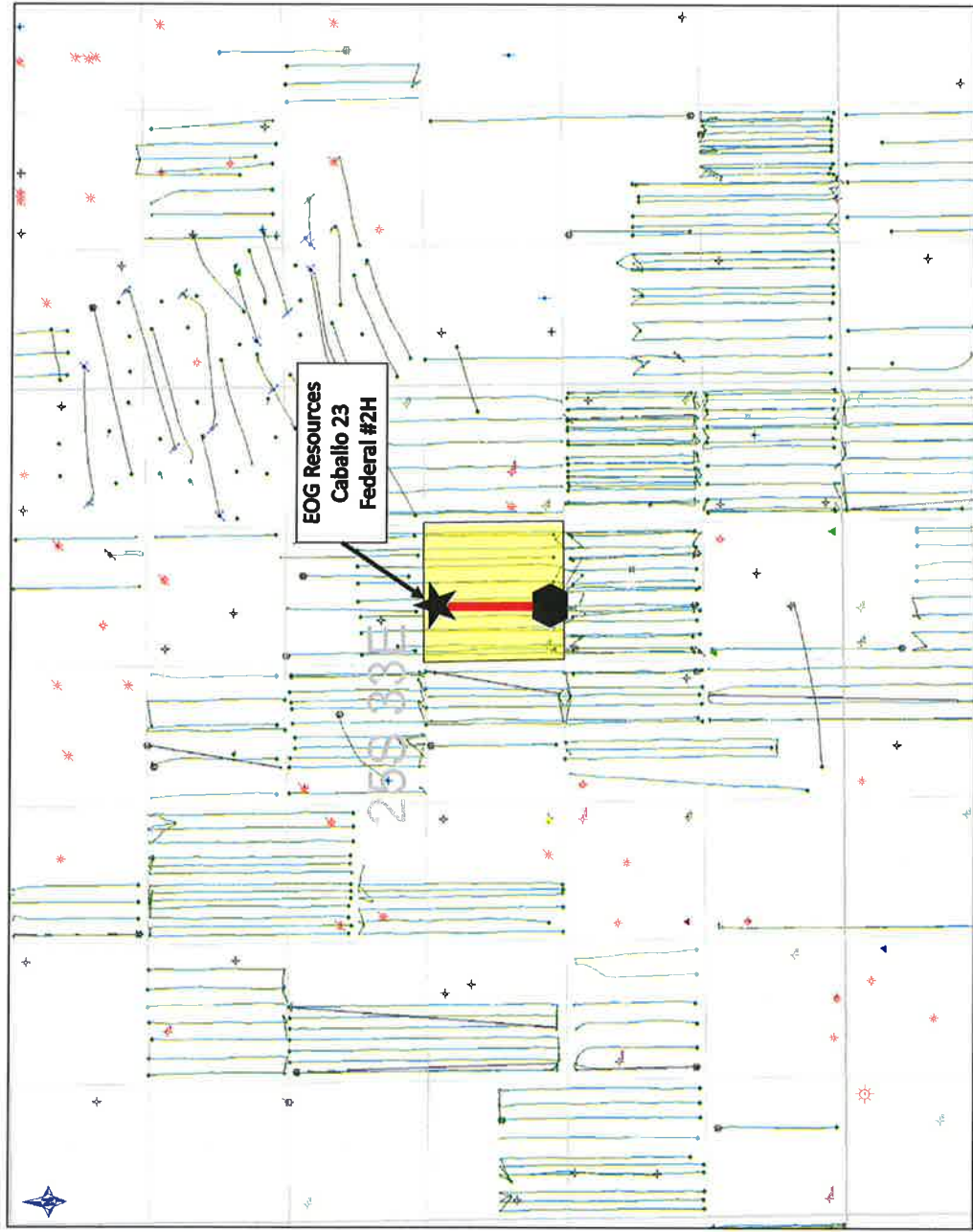
**VALIDATOR:**  
 Dustin Armstrong

**VALIDATOR COMMENTS:**  
 OK

Method(s): Gas C6+ - GPA 2261, Extended Gas - GPA 2286, Calculations - GPA 2172

**BEFORE THE OIL CONSERVATION DIVISION**  
 Santa Fe, New Mexico  
**Exhibit No. 16**  
 Submitted by: **EOG Resources, Inc.**  
 Hearing Date: December 12, 2019  
 Case # 20965

# Caballo Area Lease Map



## Map Legend

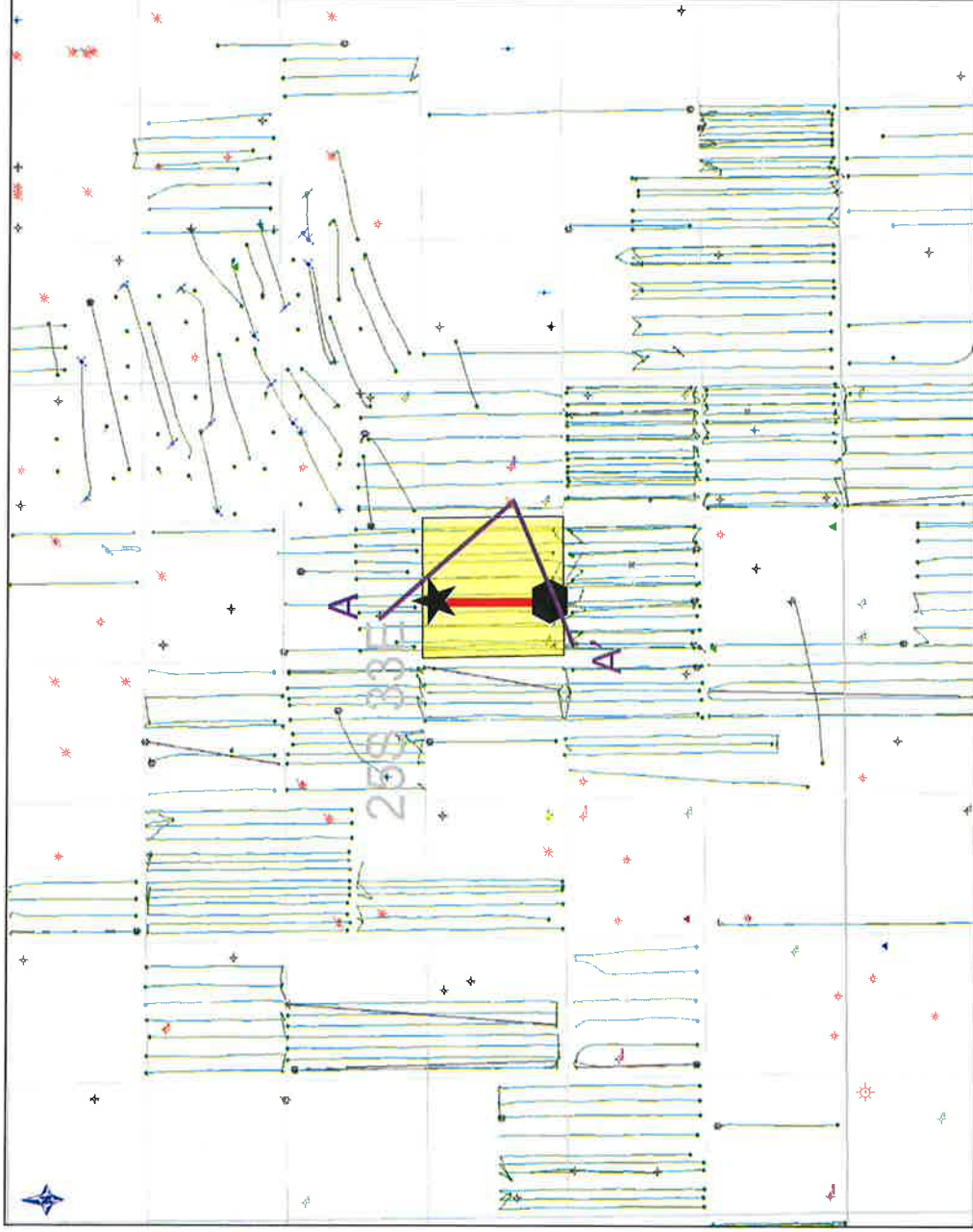


EOG Resources --  
Horizontal Well Location  
(Caballo 23 Federal #2H)

EOG Acreage



# Caballo Area Cross Section Map



## Map Legend



EOG Resources --  
Horizontal Well Location  
(Caballo 23 Federal #2H)

EOG Acreage



# Caballo Area Cross Section

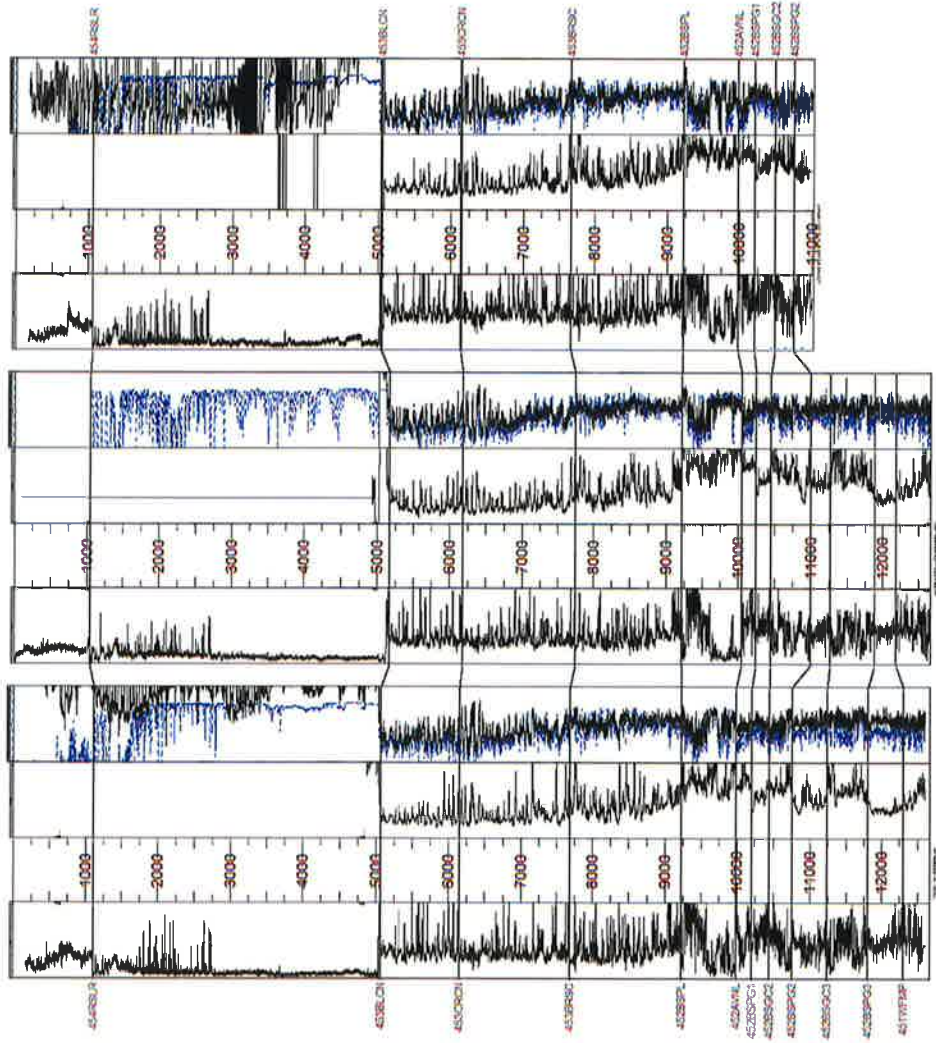
VACA '14' FEDERAL #1  
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 ELEV\_KB : 3.372

ANDRIKOPoulos FEDERAL #001  
 30025264380000  
 ELEV\_KB : 3.354

LOMAS ROJAS STATE COM 26 #1H  
 30025395310000  
 ELEV\_KB : 3.373

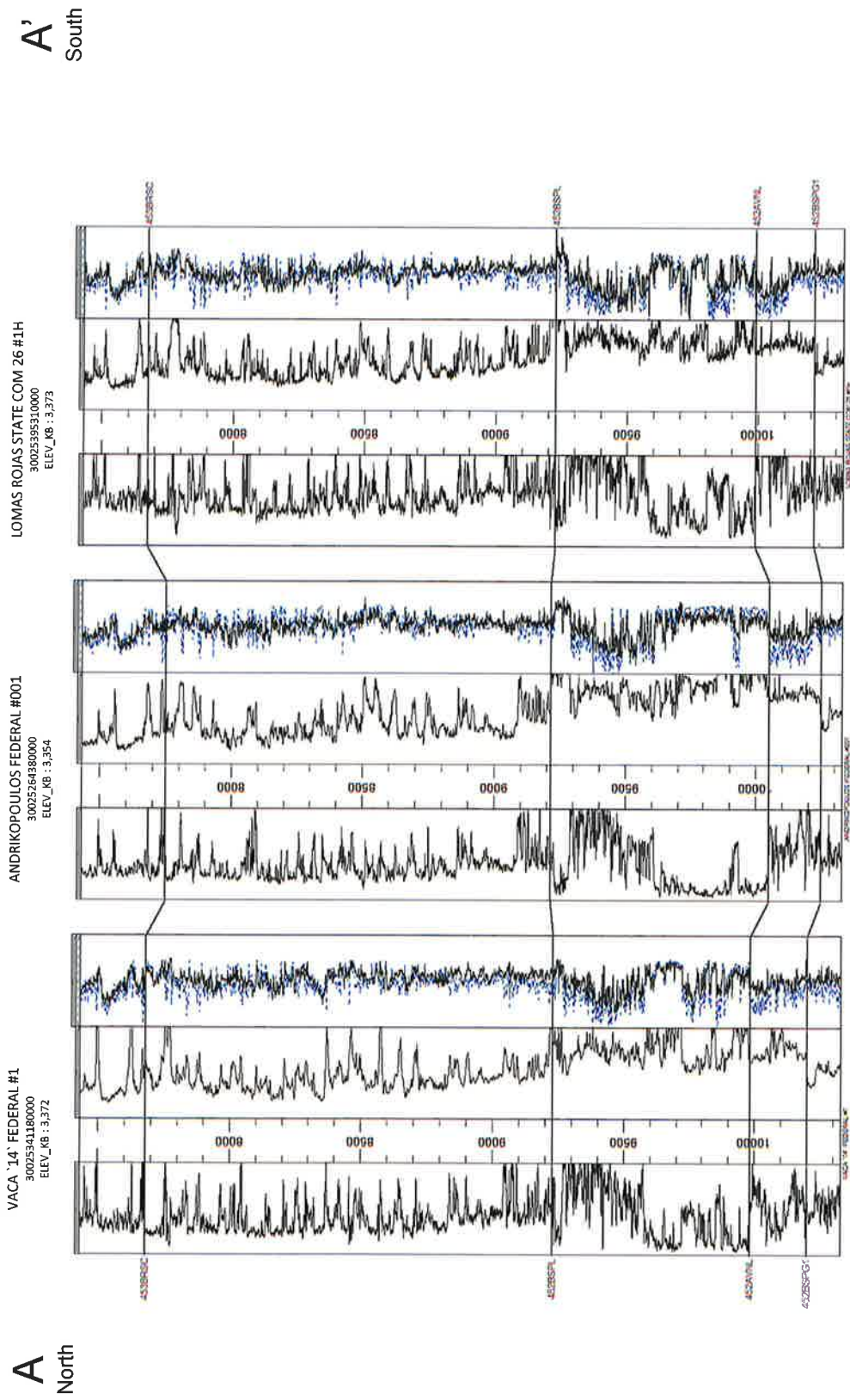
A'  
 South

A  
 North

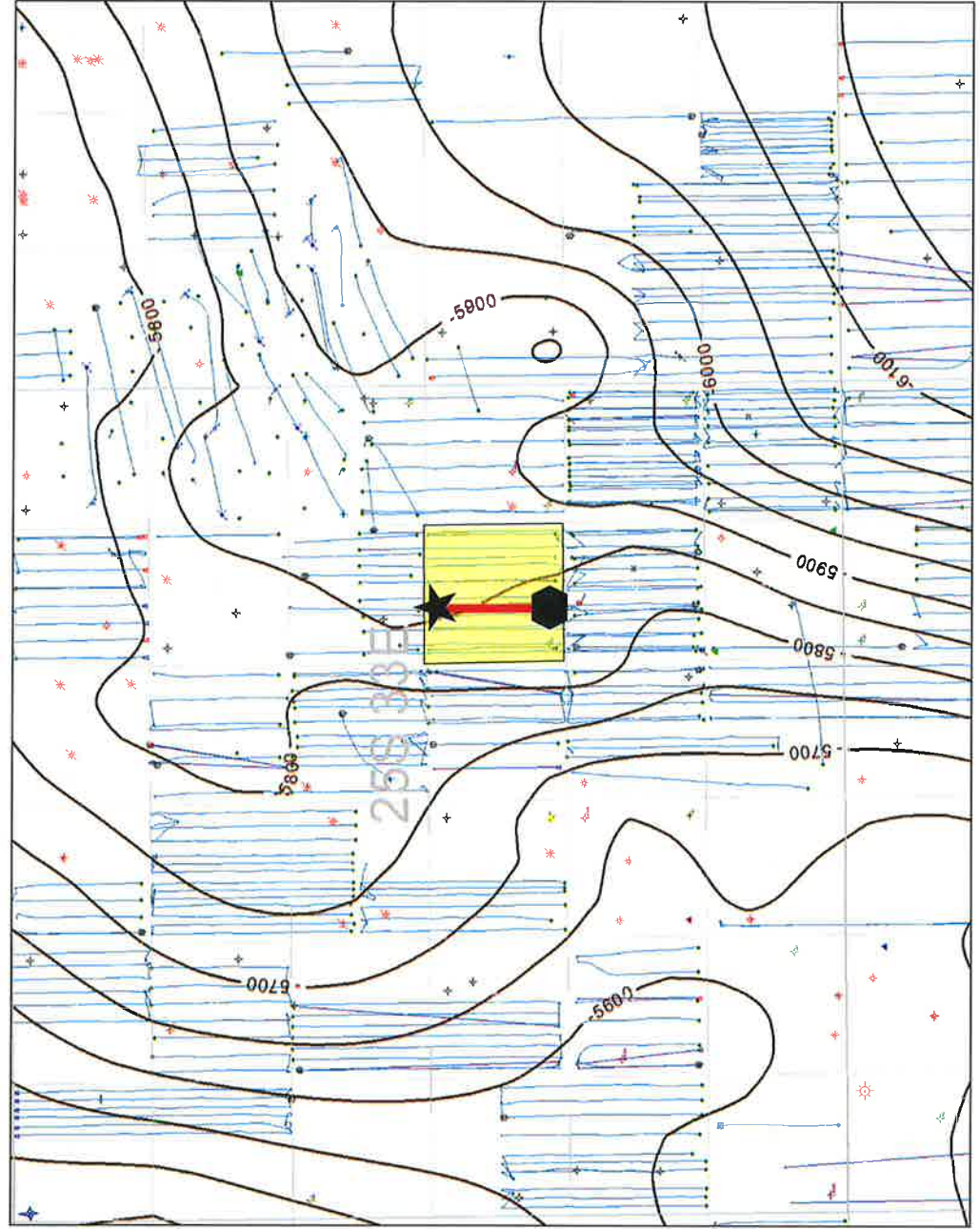




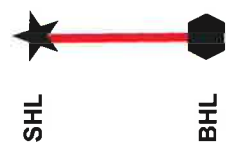
# Caballo Area Cross Section



# Caballo Area Structure with Top of Bone Spring Lime (SSTVD)



## Map Legend

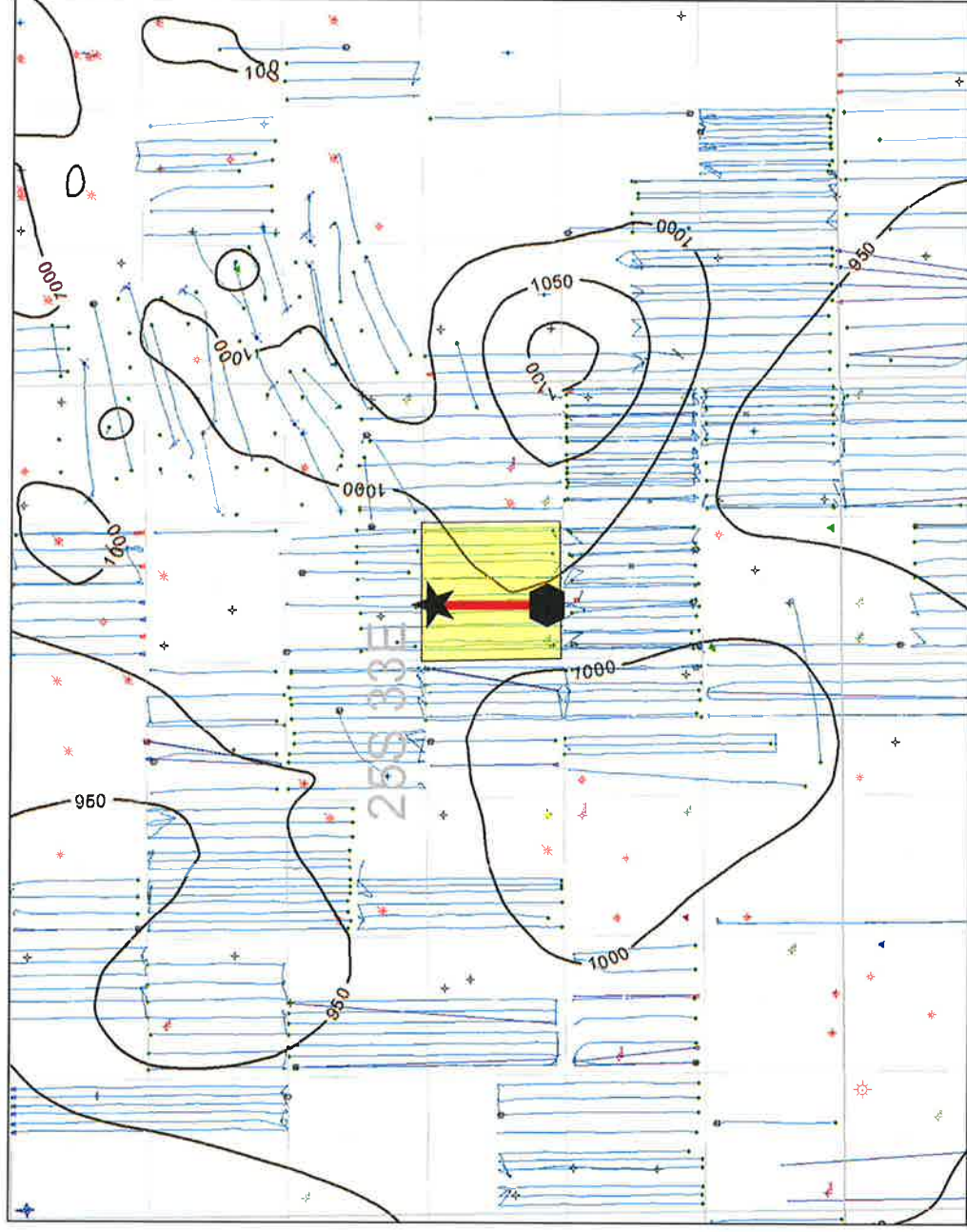


EOG Resources --  
Horizontal Well Location  
(Caballo 23 Federal #2H)

EOG Acreage



# Caballo Area Isopach with Top Bone Spring Lime to Top First Bone



## Map Legend



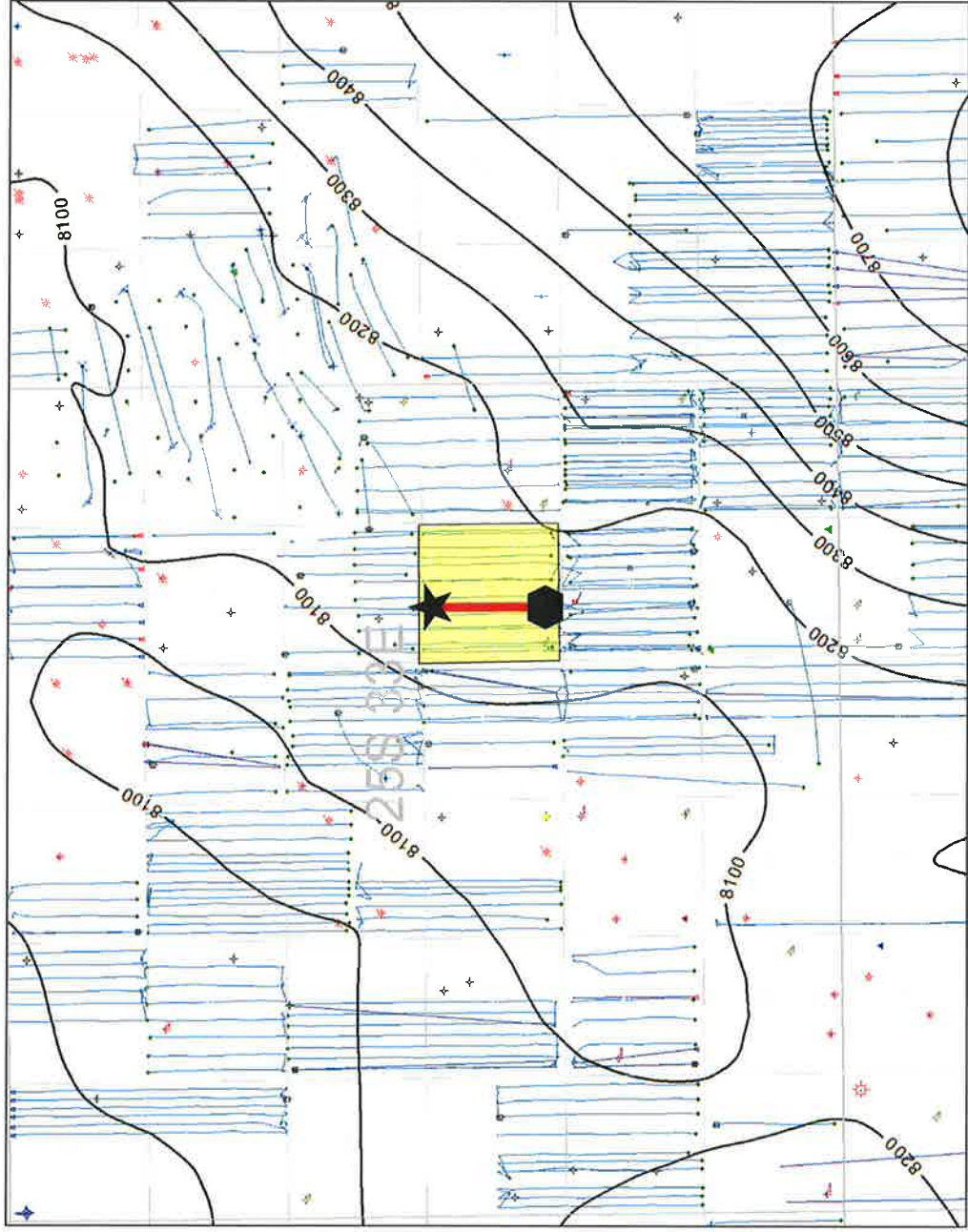
EOG Resources --  
Horizontal Well Location  
(Caballo 23 Federal #2H)

EOG Acreage

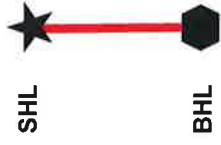




# Caballo Area Isopach with Top Rustler to Top Bone Spring Lime



## Map Legend



EOG Resources --  
Horizontal Well Location  
(Caballo 23 Federal #2H)

EOG Acreage

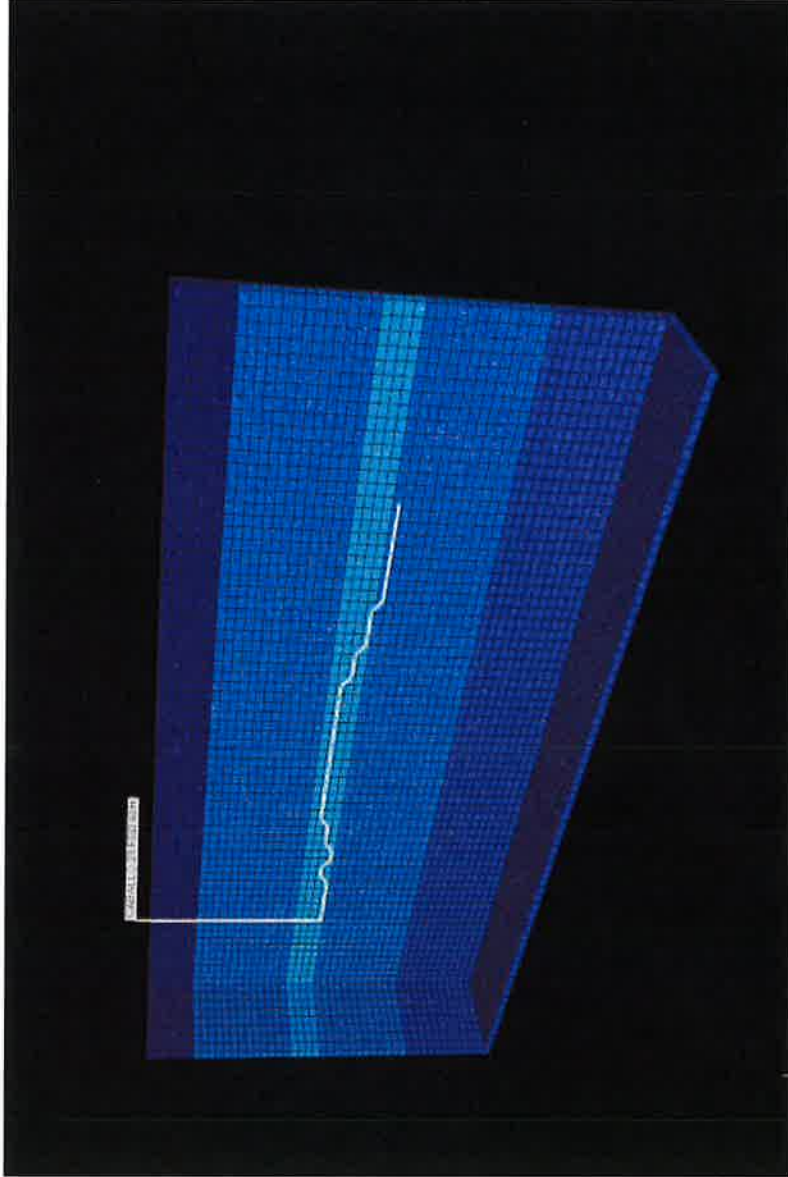


## Caballo 23 Fed Com 2H Frac Summary

Avg Pressure	Max Pressure	ISIP	FG
6437	7786	2998	0.75

Prop  
100 mesh  
40/70

291 Milbs  
96 Milbs  
195 Milbs



BSG LIME

LNRDA /  
Avalon Shale  
(Proposed Zone)

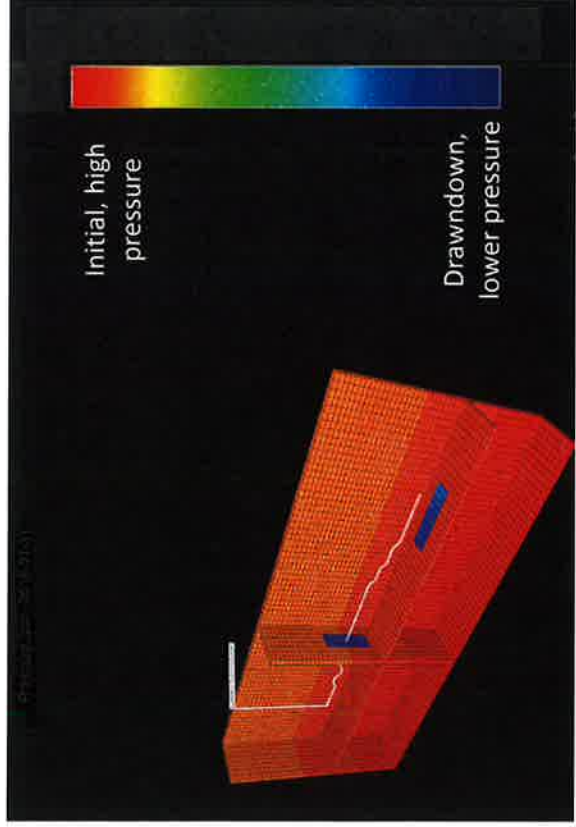
LNRD B shale

- Wellbore placed into geologic layers
- Layers assigned properties based on well log responses



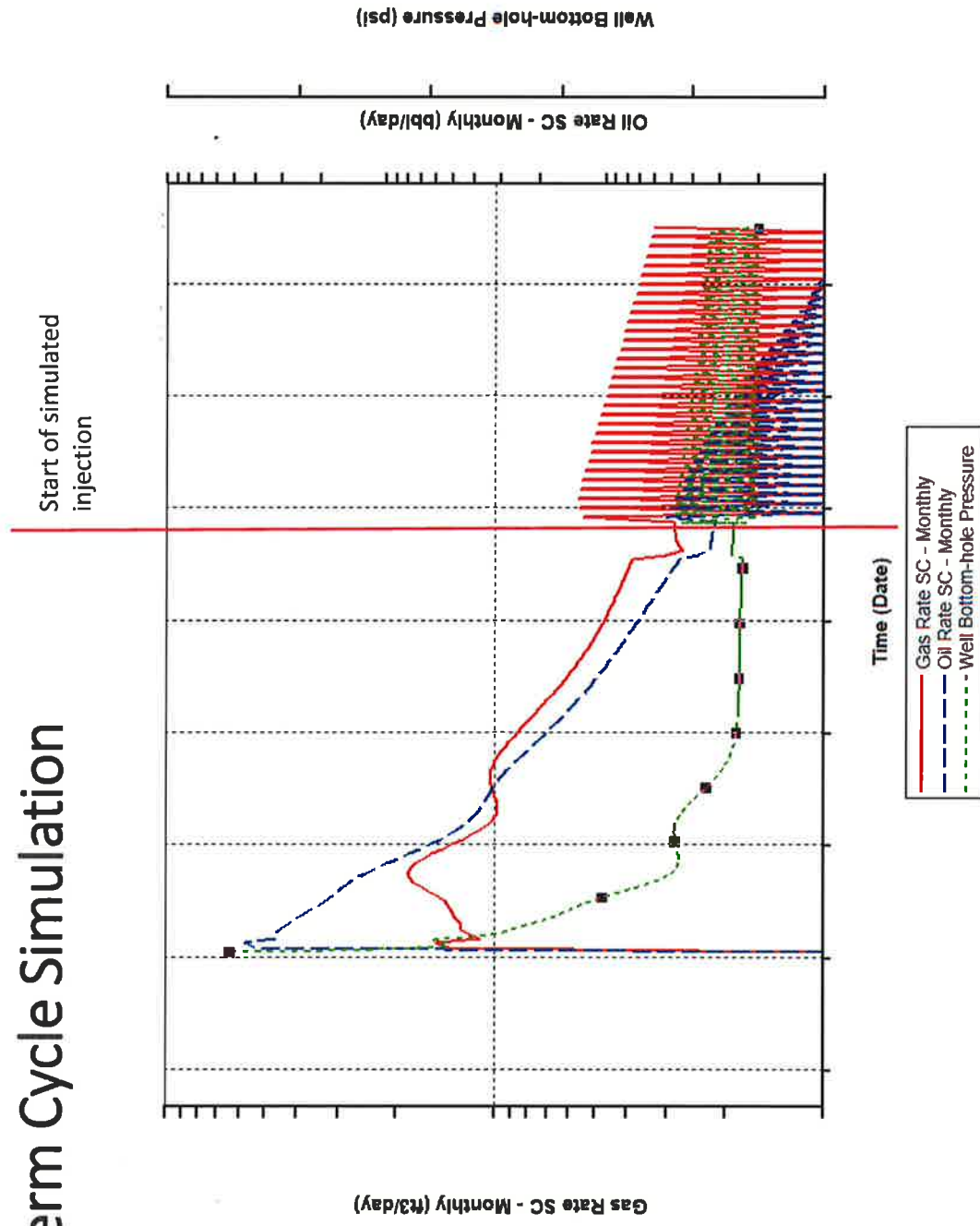


# Model



Within the matrix, drawdown is confined to near wellbore due to low permeability

# Long Term Cycle Simulation



# Long Term Cycle Simulation

