

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-104
Revised August 1, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

¹ Operator name and Address BTA Oil Producers LLC 104 S. Pecos Midland, TX 79701		² OGR/D Number 260297	
		³ Reason for Filing Code/ Effective Date NW	
⁴ API Number 30 - 025-42414	⁵ Pool Name Red Hills; Bone Spring, Upper Shale		⁶ Pool Code 97900
⁷ Property Code 314180	⁸ Property Name Rojo 7811 JV-P Federal Com		⁹ Well Number 2H

II. ¹⁰ Surface Location

UI or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West line	County
P	22	25S	33E		50	South	430	East	Lea

¹¹ Bottom Hole Location

UI or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West line	County
A	22	25S	33E		375	North	331	East	Lea
¹² Lse Code F	¹³ Producing Method Code F	¹⁴ Gas Connection Date Flaring	¹⁵ C-129 Permit Number	¹⁶ C-129 Effective Date	¹⁷ C-129 Expiration Date				

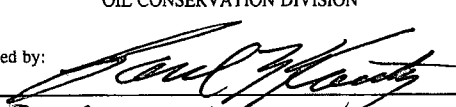
III. Oil and Gas Transporters

¹⁸ Transporter OGRID	¹⁹ Transporter Name and Address	²⁰ O/G/W
248440	Western Refining Company, LP 6500 Trowbridge Drive El Paso, TX 79905	O

IV. Well Completion Data

²¹ Spud Date 3/20/15	²² Ready Date 5/6/15	²³ TD 14092'	²⁴ PBTD 14040'	²⁵ Perforations 9556-14000'	²⁶ DHC, MC
²⁷ Hole Size	²⁸ Casing & Tubing Size	²⁹ Depth Set	³⁰ Sacks Cement		
17 1/2"	13 3/8"	1174'	1040		
12 1/4"	9 5/8"	5021'	1720		
8 3/4"	5 1/2"	14092'	1900 (TOC @ 3380')		
	2 7/8"	9515'			

V. Well Test Data

³¹ Date New Oil 5/15/15	³² Gas Delivery Date	³³ Test Date 5/23/15	³⁴ Test Length 24 Hrs	³⁵ Tbg. Pressure	³⁶ Csg. Pressure 700#
³⁷ Choke Size 22/64"	³⁸ Oil 464	³⁹ Water 1647	⁴⁰ Gas 663		⁴¹ Test Method Flowing
⁴² I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief. Signature: Pam Inskeep			OIL CONSERVATION DIVISION		
Printed name: Pam Inskeep			Approved by: 		
Title: Regulatory Administrator			Title: Petroleum Engineer		
E-mail Address: pinskeep@btaoil.com			Approval Date: 07/31/15		
Date: 07/30/2015		Phone: 432-682-3753			

E-PERMIT RZ

JUL 31 2015

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS
*Do not use this form for proposals to drill or to re-enter an
abandoned well. Use Form 3160-3 (APD) for such proposals.*

SUBMIT IN TRIPLICATE - Other Instructions on page 2.

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMNM15091
2. Name of Operator BTA Oil Producers LLC		6. If Indian, Allottee, or Tribe Name ---
3a. Address 104 S. Pecos Midland, TX 79701	3b. Phone No. (include area code) 432-682-3753	7. If Unit or CA. Agreement Name and/or No. ---
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) 50' FSL & 430' FEL, Unit P (SESE) Sec 22-T25S-R33E		8. Well Name and No. Rojo 7811 JV-P Federal Com #2H
Lat. Long.		9. API Well No. 30-025-42414
		10. Field and Pool, or Exploratory Area Red Hills; Bone Spring, Upper Shale
		11. County or Parish, State Lea NM

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-off
	☐ Altering Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☒ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other _____
	☐ Change Plans	☐ Plug and abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug back	☒ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths or pertinent markers and sands. Attach the Bond under which the work will be performed or provide the Bond No. on file with the BLM/ BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notice shall be filed only after all requirements, including reclamantion, have been completed, and the operator has determined that the site is ready for final inspection.)

Required Information for the Disposal of Produced Water:

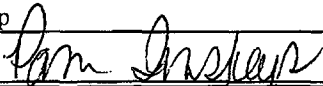
- 1) Name of formation producing water on lease: Bone Spring
- 2) Amount of water produced in barrels per day 500 BWPD
- 3) How water is stored on lease: 2 - 500 bbl fiberglass tanks
- 4) How water is moved to disposal facility: Trucked
- 5) Disposal Facility #1:
 - a) Facility Operator Name: Mesquite SWD, Inc.
 - b) Name of facility or well name & number: Cotton Draw SWD #66 (SWD-1306)
 - c) Type of facility or well: WDW
 - d) Location by 1/4, 1/4, Section, Township & Range: SWNW, 10-T25S-R32E
- Disposal Facility #2:
 - a) Facility Operator Name: Mesquite SWD, Inc.
 - b) Name of facility or well name & number: West Jal SWD #1 (SWD-272)
 - c) Type of facility or well: WDW
 - d) Location by 1/4, 1/4, Section, Township & Range: SWNE, 10-T25S-R36E

14. I hereby certify that the foregoing is true and correct.

Name (Printed/ Typed)

Pam Inskeep

Signature:



Title:

Regulatory Administrator

Date:

7/9/15

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by:

Title:

Date:

Conditions of approval, if any are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office:

Title 18 U.S.C. Section 1001 AND Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS
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SUBMIT IN TRIPLICATE - Other Instructions on page 2.

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMNM15091
2. Name of Operator BTA Oil Producers LLC		6. If Indian, Allottee, or Tribe Name ---
3a. Address 104 S. Pecos Midland, TX 79701	3b. Phone No. (include area code) 432-682-3753	7. If Unit or CA. Agreement Name and/or No. ---
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) 50' FSL & 430' FEL, Unit P (SESE) Sec 22-T25S-R33E		8. Well Name and No. Rojo 7811 JV-P Federal Com #2H
Lat. Long.		9. API Well No. 30-025-42414
		10. Field and Pool, or Exploratory Area Red Hills; Upper Bone Spring
		11. County or Parish, State Lea NM

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/ Resume)	☐ Water Shut-off
☒ Subsequent Report	☐ Altering Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and abandon	☐ Temporarily Abandon	Drilling Operations
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths or pertinent markers and sands. Attach the Bond under which the work will performed or provide the Bond No. on file with the BLM/ BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notice shall be filed only after all requirements, including reclamantion, have been completed, and the operator has determined that the site is ready for final inspection.)

3/20/15 Spud well.

3/22/15 TD 17 1/2" hole @ 1174'. Set 13 3/8" 54.5# J-55 csg @ 1174'. Cmt w/690 sx Extendacem. Tailed in w/350 sx. Circ 319 sx to surface. WOC 18 hrs & test csg to 1500# for 30 mins. Good test.

3/26/15 TD 12 1/4" hole @ 5021'. Set 9 5/8" 40# J-55 csg @ 5021'. Cmt w/1470 sx Econocem. Tailed in w/250 sx. Circ 311 sx to surface. WOC 18 hrs. Test csg to 1500# for 30 mins. Good test.

4/7/15 TD 8 3/4" lateral @ 14092' (KOP @ 8850). Set 5 1/2" 17# P-110 csg @ 14092'. Cmt w/700 Class H. Tailed in w/1200 sx. DNC. Est TOC @ 1200'. Completions will run CBL.

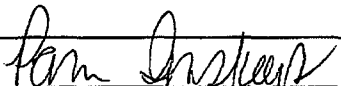
4/9/15 Rig released.

14. I hereby certify that the foregoing is true and correct.

Name (Printed/ Typed)

Pam Inskeep

Signature:



Title:

Regulatory Administrator

Date:

4/28/15

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by:

Title:

Date:

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Office:

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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OMB No. 1004-0137
Expires: July 31, 2010

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1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMNM15091
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3a. Address 104 S. Pecos Midland, TX 79701	3b. Phone No. (include area code) 432-682-3753	7. If Unit or CA. Agreement Name and/or No. ---
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) 50' FSL & 430' FEL, Unit P (SESE) Sec 22-T25S-R33E		8. Well Name and No. Rojo 7811 JV-P Federal Com #2H
Lat. Long.		9. API Well No. 30-025-42414
		10. Field and Pool, or Exploratory Area Red Hills; Bone Spring, Upper Shale
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☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/ Resume)	☐ Water Shut-off
	☐ Altering Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☒ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other <u>Completion Operations</u>
	☐ Change Plans	☐ Plug and abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug back	☐ Water Disposal	

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4/15/15 MIRU. Ran CBL. TOC @ 3380'. Set CBP @ 14040'. Test csg to 8548#. Good test. Perforate 13990-14000' (60).
Injection test.

5/1/15 to 5/6/15 Perforate Bone Spring 9556-13940' (1080). Acdz w/93491 gal 7 1/2%; frac w/7379176# sand & 7533530 gal fluid.

5/13/15 Began flowing back & testing.

5/15/15 Date of first production.

6/4/15 to 6/15/15 Drilled all frac plugs. Circulate clean.

6/16/15 Set 2 7/8" 6.5# L-80 tbg @ 9515' & pkr @ 8872'.

14. I hereby certify that the foregoing is true and correct.

Name (Printed/ Typed)

Pam Inskeep

Title:

Regulatory Administrator

Signature:

Pam Inskeep

Date:

7/9/15

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by:

Title:

Date:

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(Instructions on page 2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

FORM APPROVED

OMB NO. 1004-0137

Expires: July 31, 2010

5. LEASE DESIGNATION AND SERIAL NO.

NMNM15091

1a. Type of Well ☒ Oil Well ☐ Gas Well ☐ Dry ☐ Other
b. Type of Completion ☒ New Well ☐ Workover ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.

Other

2. Name of Operator

BTA Oil Producers LLC

6. INDIAN ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT

8. FARM OR LEASE NAME

Rojo 7811 JV-P Federal Com #2H

3. Address

104 S. Pecos
Midland, TX 79701

3a. Phone No. (include area code)

432-682-3753

9. API WELL NO.

30-025-42414

4. Location of Well (Report location clearly and in accordance with Federal requirements)*

At surface 50' FSL & 430' FEL, Unit P (SESE) Sec 22-T25S-R33E

At top prod. Interval reported below

At total depth 375' FNL & 331' FEL, Unit A (NENE) Sec 22-T25S-R33E

10. FIELD NAME

Red Hills; Bone Spring, Upper Shale

11. SEC. T. R. M., OR BLOCK AND SURVEY
OR AREA 22 T 25S R 33E

12. COUNTY OR PARISH

Lea

13. STATE

NM

14. Date Spudded

3/20/15

15. Date T.D. Reached

4/7/15

16. Date Completed

5/6/15

☐ D & A

☒ Ready to Prod.

17. ELEVATIONS (DF, RKB, RT, GR, etc.)*

3345'

GR

3363'

KB

18. Total Depth:

MD

14092'

TVD

9371'

19. Plug back T.D.:

MD

14040'

TVD

9369'

20. Depth Bridge Plug Set:

MD

14040'

TVD

9369'

21. Type Electric & other Logs Run (Submit a copy of each)

None

22. Was well cored?

☒ No

☐ Yes (Submit analysis)

Was DST run?

☒ No

☐ Yes (Submit report)

Directional Survey?

☐ No

☒ 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"	13 3/8" J55	54.5#	0	1174'	None	1040		0	None
12 1/4"	9 5/8" J55	40#	0	5021'	None	1720		0	None
8 3/4"	5 1/2" P110	17#	0	14092'	None	1900		3380'	None

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"	9515'	8872'						

25. Producing Intervals

Formation	Top	Bottom	Perforated Interval	Size	No. of Holes	Perf. Status
A) Bone Spring	9556'	14000'	9556-13940'		1080	Open
B)			13990-14000'		60	Open
C)						
D)						

27. Acid, Fracture Treatment, Cement Squeeze, Etc.

Depth Interval	Amount and Type of Material
See Attached	See Attached

28. Production- Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil Bbl	Gas MCF	Water Bbl	Oil Gravity Corr. API	Gas Gravity	Production Method
5/15/15	5/23/15	24	→	464	663	1647			Flowing
Choke Size	Tbg. Press Flwg. SI	Csg. Press.	24 Hr. Rate	Oil Bbl	Gas MCF	Water Bbl	Gas: Oil Ratio	Well Status	
22/64"		700#	→	464	663	1647		Producing	

28a. Production- Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil Bbl	Gas MCF	Water Bbl	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press Flwg. SI	Csg. Press.	24 Hr. Rate	Oil Bbl	Gas MCF	Water Bbl	Gas: Oil Ratio	Well Status	
			→						

* See instructions and spaces for additional data on page 2)

28b. Production- Interval C

Date First Produced	Test Date	Hours Tested	Test Production →	Oil Bbl	Gas MCF	Water Bbl	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg. Press Flwz. SI	Csg Press.	24 Hr. Rate →	Oil Bbl	Gas MCF	Water Bbl	Gas: Oil Ratio	Well Status	

28c. Production- Interval D

Date First Produced	Test Date	Hours Tested	Test Production →	Oil Bbl	Gas MCF	Water Bbl	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg. Press Flwz. SI	Csg Press.	24 Hr. Rate →	Oil Bbl	Gas MCF	Water Bbl	Gas: Oil Ratio	Well Status	

29. Disposition of Gas (Sold, used for fuel, vented, etc.)

Flared

30. Summary of Porous Zones (include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

Formation	Top	Bottom	Descriptions Contents, Etc.	Name	Top
					Measured Depth
Lamar	4972'	5021'		Rustler	1048'
Bell Canyon	5022'	6090'		Top of Salt	1415'
Cherry Canyon	6091'	7661'		Base of Salt	4732'
Brushy Canyon	7662'	9179'		Lamar	4972'
Bone Spring Lm	9180'	9391'		Bell Canyon	5022'
				Cherry Canyon	6091'
				Brushy Canyon	7662'
				Bone Spring Lm	9180'
					TVD. 9391'

32. Additional remarks (include plugging procedure):

33. Indicate which items have been attached by placing a check in the appropriate boxes:

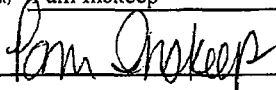
- ☒ Electrical/ Mechanical Logs (1 full set required)
 ☐ Geologic Report
 ☐ DST Report
 ☒ Directional Surveys
- ☒ Sundry Notice for plugging and cement verification
 ☐ Core Analysis
 ☐ Other:

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name (please print) Pam Inskeep

Title Regulatory Administrator

Signature



Date 7/9/15

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Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

Form C-102
Revised August 1,
2011
Submit one copy to appropriate
District Office
☐ AMENDED REPORT
(As Drilled)

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ APT Number 30-025-42414		² Pool Code 97900	³ Pool Name Red Hills; Bone Spring, Upper Shale
⁴ Property Code 314180	⁵ Property Name Rojo 7811 JV-P Federal Com		⁶ Well Number 2H
⁷ OGRID No. 260297	⁸ Operator Name BTA Oil Producers LLC		⁹ Elevation 3345' GR

¹⁰ Surface Location

UL or lot no. P	Section 22	Township 25S	Range 33E	Lot Idn	Feet from the 50	North/South line South	Feet from the 430	East/West line East	County Lea
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no. A	Section 22	Township 25S	Range 33E	Lot Idn	Feet from the 375	North/South line North	Feet from the 331	East/West line East	County Lea
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¹² Dedicated Acres 160	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

Producing Area 9556-14000'	¹⁶		¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Pam Inskeep</i> 07/08/2015 Signature Date Pam Inskeep, Regulatory Administrator Printed Name pinskeep@btaoil.com E-mail Address
	¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date of Survey Signature and Seal of Professional Surveyor: REFER TO ORIGINAL PLAT Certificate Number		
	375' BHL 331' SHL 430' 50'		

ROJO 7811 JV-P FEDERAL COM #2H**30-025-42414****Sec 22-T25S-R33E****Stimulation Data/Attachment to Completion Report**

<u>Perfs</u>	<u>7 1/2% Acid (Gal)</u>	<u>Sand (#)</u>	<u>Fluid (Gal)</u>
13841-13940	5536	248161	284626
13694-13792	3012	246268	251652
13554-13644	3012	245532	254550
13398-13497	3012	245307	255180
13250-13349	3012	244255	293988
13103-13201	3012	245485	252492
12955-13058	3012	245351	244117
12807-12906	3012	246984	247872
12659-12754	3012	246856	249535
12516-12610	3012	246303	245419
12364-12462	3012	245503	252912
12216-12314	3042	245986	248469
12068-12167	3012	246629	246948
11917-12019	3054	245869	244974
11773-11871	3012	244757	245856
11625-11723	3012	244915	244050
11476-11576	3012	241779	248779
11329-11433	3024	244051	246708
11182-11280	3012	246347	246637
11034-11132	3012	247341	244260
10894-10985	3234	244430	243642
10738-10837	3012	242044	244470
10590-10689	3264	248526	235591
10443-10536	3012	242252	260892
10295-10400	3012	250849	246738
10147-10246	3054	249500	249090
9999-10093	3054	246707	246889
9855-9950	3012	247023	246318
9704-9799	2982	247189	265692
9556-9655	3012	246977	245184
Totals	93491	7379176	7533530



PO Box 1370
Artesia, NM 88211-1370
(575) 748-1288

April 10, 2015

COG, LLC
One Concho Center
600 W. Illinois Ave.
Midland, TX 79701

RE: 7811 JV-P Rojo Com 2H
50' FSL & 430' FEL
Sec. 22, T25S, R33E
Lea County, New Mexico

Dear Sir,

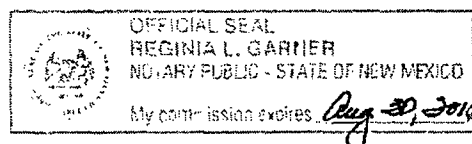
The attached is the Deviation Survey for the above captioned well.

Very truly yours,

Eddie C. LaRue
Operations Manager

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 10th day of April, 2015.

Notary Public

7811 JV-P Rojo Com 2H

Date	Depth	Deviation	Direction	TVD
3/20/2015	293	0.10	0.00	0.00
3/20/2015	612	0.60	0.00	0.00
3/22/2015	1130	0.60	0.00	0.00
3/24/2015	1271	0.80	0.00	0.00
3/24/2015	1556	0.60	0.00	0.00
3/24/2015	2126	0.70	0.00	0.00
3/24/2015	2410	0.40	0.00	0.00
3/25/2015	2695	0.80	0.00	0.00
3/25/2015	2979	1.30	0.00	0.00
3/25/2015	3264	2.30	0.00	0.00
3/25/2015	3548	2.20	0.00	0.00
3/25/2015	3833	1.60	0.00	0.00
3/26/2015	4117	1.60	0.00	0.00
3/26/2015	4401	1.80	0.00	0.00
3/26/2015	4686	3.10	0.00	0.00
3/26/2015	4971	1.90	153.10	0.00
3/28/2015	5272	1.40	0.00	0.00
3/28/2015	5525	1.10	0.00	0.00
3/28/2015	5841	0.60	0.00	0.00
3/29/2015	6126	0.20	0.00	0.00
3/29/2015	6316	1.00	0.00	0.00
3/29/2015	6569	0.30	0.00	0.00
3/29/2015	6885	0.20	0.00	0.00
3/29/2015	7203	0.50	0.00	0.00
3/30/2015	7518	0.50	0.00	0.00
3/30/2015	7772	0.50	0.00	0.00
3/30/2015	8025	0.60	0.00	0.00
3/31/2015	8275	0.70	0.00	0.00
3/31/2015	8558	0.70	0.00	0.00
4/1/2015	8827	0.90	181.00	8827.00
4/1/2015	8861	0.70	76.20	8859.00
4/1/2015	8892	2.90	34.70	8890.00
4/1/2015	8924	6.10	24.20	8922.00
4/1/2015	8956	10.40	18.60	8953.00
4/1/2015	8987	14.90	15.50	8984.00
4/2/2015	9050	23.70	13.90	0.00
4/2/2015	9082	26.20	12.80	0.00
4/2/2015	9113	28.70	12.10	0.00
4/2/2015	9145	29.90	10.40	0.00
4/2/2015	9177	32.90	7.80	0.00
4/2/2015	9208	37.20	6.10	0.00
4/2/2015	9240	40.40	5.70	0.00
4/2/2015	9271	43.80	3.70	0.00

Date	Depth	Deviation	Direction	TVD
4/2/2015	9303	48.10	1.10	0.00
4/2/2015	9335	53.90	359.50	0.00
4/2/2015	9366	59.00	359.20	0.00
4/2/2015	9398	60.80	359.20	0.00
4/2/2015	9493	67.00	359.60	9346.00
4/2/2015	9524	69.50	359.20	9357.00
4/2/2015	9556	73.50	358.60	9368.00
4/2/2015	9588	78.10	358.40	9375.00
4/2/2015	9619	82.10	358.80	9381.00
4/3/2015	9639	84.10	358.40	0.00
4/3/2015	9670	85.40	358.90	0.00
4/3/2015	9702	89.00	359.00	0.00
4/3/2015	9733	87.90	359.30	0.00
4/3/2015	9955	91.20	358.90	0.00
4/3/2015	10050	90.30	357.70	0.00
4/3/2015	10145	90.10	357.70	0.00
4/3/2015	10240	91.40	357.10	0.00
4/3/2015	10335	91.80	357.70	0.00
4/3/2015	10430	91.00	358.80	0.00
4/3/2015	10525	90.60	359.60	0.00
4/4/2015	10619	90.40	359.70	0.00
4/4/2015	10715	91.20	1.90	0.00
4/4/2015	10809	89.90	3.00	0.00
4/4/2015	10904	89.90	3.50	0.00
4/4/2015	10999	87.90	2.40	0.00
4/4/2015	11094	89.50	3.30	0.00
4/4/2015	11189	90.60	2.90	0.00
4/4/2015	11284	88.70	0.40	0.00
4/4/2015	11379	89.80	1.10	0.00
4/4/2015	11474	88.30	359.00	0.00
4/4/2015	11569	87.40	357.80	0.00
4/4/2015	11664	90.00	357.60	0.00
4/4/2015	11758	90.10	358.70	0.00
4/4/2015	11853	89.50	359.20	0.00
4/5/2015	11947	89.50	359.00	0.00
4/5/2015	12042	90.20	357.10	0.00
4/5/2015	12137	91.30	1.00	0.00
4/5/2015	12232	93.90	1.00	0.00
4/6/2015	12328	94.40	359.80	0.00
4/6/2015	12423	94.90	359.60	0.00
4/6/2015	12518	94.60	359.50	0.00
4/6/2015	12613	93.80	0.60	0.00
4/6/2015	12708	1.10	94.40	9350.51
4/6/2015	12803	93.10	358.80	9344.29
4/6/2015	12898	91.30	358.80	9340.00

Date	Depth	Deviation	Direction	TVD
4/6/2015	12993	90.20	359.70	9339.40
4/6/2015	13087	89.10	359.90	9339.98
4/6/2015	13182	88.40	359.20	9342.05
4/6/2015	13277	88.30	358.56	9344.62
4/7/2015	13372	89.00	359.10	0.00
4/7/2015	13467	89.20	1.00	0.00
4/7/2015	13563	88.40	0.40	0.00
4/7/2015	13658	87.80	0.80	0.00
4/7/2015	13752	88.40	0.50	9356.00
4/7/2015	13847	87.30	360.00	9360.00
4/7/2015	13942	86.90	359.30	9364.00
4/7/2015	14045	88.20	358.80	9369.00



April 8, 2015

Concho Resources, Inc.
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

Attn: Kanicia Castillo

RE: Rojo 7811 JV-P Federal Com 2H

Please find enclosed a copy of the survey from 0' to 8751' ran on the above referenced well.

Sincerely,

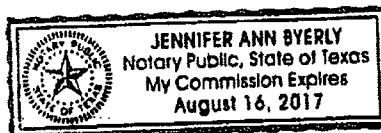

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 8 day of April,
A.D., 2015, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas

VES Survey International
P.O. Box 261021 Corpus Christi, TX 78426
T (361) 767-0602 F (361) 767-0612
www.vessurvey.com





Company: CONCHO
Lease/Well: Rojo 7811 JV-P Federal Com/2H

Rig Name: SILVEROAK 12
State/County: NEW MEXICO/LEA
Latitude: 32.11, Longitude: -103.55
GRID North is 0.41 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB: 18 FEET

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut
Minimum Curvature Method
Report Date/Time: 4/8/2016 / 09:08

VES Survey International
West Texas
(432) 563-5444
Surveyor: Jordan Shelleby
Rojo 7811 JV-P Federal Com 2H / API 30-025-42414

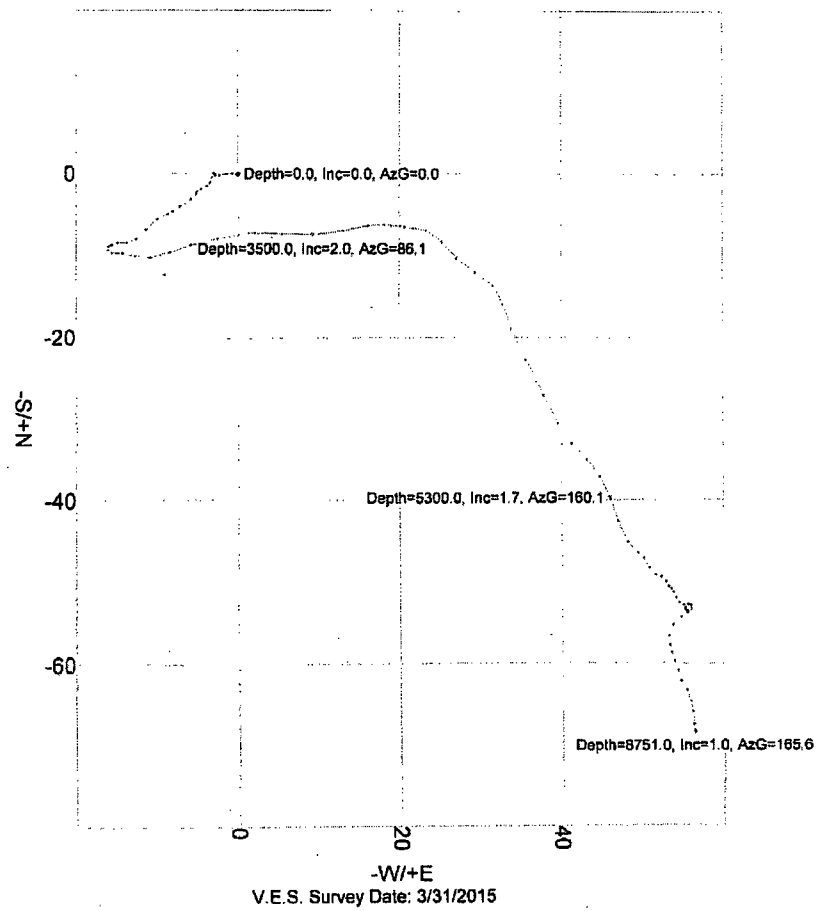
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	----
100.00	0.25	255.72	100.00	-0.05	-0.21	-0.05	0.22	255.72	0.25
200.00	0.44	256.20	200.00	0.06	-0.77	0.08	0.77	274.38	0.29
300.00	0.52	235.72	300.00	-0.03	-1.48	-0.03	1.48	288.92	0.49
400.00	0.55	275.19	399.99	-0.24	-2.33	-0.24	2.35	264.14	0.36
500.00	0.06	282.28	499.99	-0.18	-2.86	-0.18	2.87	266.31	0.49
600.00	0.24	336.67	599.99	0.02	-3.00	0.02	3.00	270.30	0.21
700.00	0.11	162.52	699.99	0.12	-3.05	0.12	3.05	272.18	0.34
800.00	0.62	206.23	799.99	-0.45	-3.26	-0.45	3.29	262.07	0.54
900.00	0.16	186.93	899.98	-1.08	-3.52	-1.08	3.68	262.96	0.46
1000.00	0.47	236.07	999.98	-1.45	-3.87	-1.45	4.13	249.50	0.38
1100.00	0.51	250.32	1099.98	-1.83	-4.63	-1.83	4.98	248.48	0.13
1200.00	0.26	198.81	1199.98	-2.20	-5.13	-2.20	5.58	248.83	0.41
1300.00	0.13	205.18	1299.98	-2.52	-5.25	-2.52	5.62	244.41	0.14
1400.00	0.89	228.93	1399.97	-3.12	-5.68	-3.12	6.66	242.02	0.77
1500.00	0.92	248.31	1499.96	-3.93	-7.21	-3.93	8.21	241.41	0.31
1600.00	0.39	202.18	1599.95	-4.54	-8.08	-4.54	9.27	240.69	0.71
1700.00	0.62	263.57	1699.95	-4.91	-8.74	-4.91	10.03	240.70	0.55
1800.00	1.08	230.93	1799.94	-5.56	-10.01	-5.56	11.45	240.95	0.65

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N-S FT	+E-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	1.03	224.73	1899.92	-6.79	-11.39	-8.79	13.26	239.16	0.13
2000.00	0.87	227.07	1899.91	-7.95	-12.56	-7.95	14.86	237.69	0.16
2100.00	0.74	271.37	2099.90	-8.45	-13.76	-8.45	16.16	238.48	0.62
2200.00	0.82	270.71	2199.89	-8.42	-14.95	-8.42	17.16	240.60	0.12
2300.00	0.35	216.33	2299.89	-8.66	-15.66	-8.66	17.90	241.05	0.51
2400.00	0.20	293.68	2399.89	-8.84	-16.00	-8.84	18.28	241.07	0.36
2500.00	0.60	172.05	2499.89	-9.29	-16.09	-9.29	18.59	239.99	0.73
2600.00	0.49	70.23	2599.88	-9.66	-15.81	-9.66	18.36	238.24	0.85
2700.00	1.10	102.17	2699.87	-8.72	-14.27	-8.72	17.27	235.73	0.74
2800.00	0.82	99.83	2799.86	-10.05	-12.62	-10.05	16.14	231.48	0.28
2900.00	1.31	93.41	2899.84	-10.24	-10.78	-10.24	14.87	226.47	0.50
3000.00	1.57	59.77	2999.81	-9.52	-8.46	-9.52	12.81	221.33	0.87
3100.00	1.62	81.27	3099.77	-8.72	-5.88	-8.72	10.51	214.00	0.60
3200.00	2.33	73.10	3199.72	-7.91	-2.54	-7.91	8.31	197.78	0.76
3300.00	2.28	88.96	3299.64	-7.21	1.38	-7.21	7.35	169.12	0.66
3400.00	2.33	95.72	3399.55	-7.31	6.39	-7.31	9.08	143.60	0.36
3500.00	2.03	86.05	3499.48	-7.39	9.18	-7.39	11.79	128.84	0.47
3600.00	2.36	80.37	3599.41	-6.93	12.88	-6.93	14.71	116.08	0.39
3700.00	1.26	74.76	3699.36	-6.29	16.06	-6.29	17.26	111.40	1.13
3800.00	1.16	101.81	3799.34	-6.22	18.10	-6.22	19.14	108.96	0.57
3900.00	1.75	90.78	3899.30	-6.45	20.53	-6.45	21.61	107.36	0.55
4000.00	1.33	111.87	3999.27	-6.50	23.23	-6.50	24.23	106.54	0.70
4100.00	1.59	136.30	4099.24	-8.32	25.28	-8.32	26.61	108.21	0.85
4200.00	1.63	140.71	4199.20	-10.34	27.10	-10.34	28.01	110.88	0.16
4300.00	1.81	114.93	4299.16	-12.04	29.38	-12.04	31.76	112.28	0.79
4400.00	1.45	142.58	4399.12	-13.71	31.58	-13.71	34.43	113.46	0.85
4500.00	1.55	180.55	4499.09	-15.99	32.80	-15.99	36.49	115.99	0.48
4600.00	1.96	159.06	4599.04	-18.66	33.86	-18.66	38.76	119.12	0.41
4700.00	2.88	152.69	4698.95	-22.69	35.63	-22.69	42.24	122.50	0.96
4800.00	2.76	154.29	4798.83	-27.10	37.82	-27.10	46.53	125.62	0.15
4900.00	1.73	151.00	4898.75	-30.59	39.80	-30.59	50.04	127.69	1.04
5000.00	1.74	139.42	4998.70	-33.08	41.32	-33.08	52.92	128.68	0.35
5100.00	1.34	135.40	5098.67	-35.05	43.13	-35.05	55.68	129.10	0.41
5200.00	1.67	148.47	5198.63	-37.13	44.72	-37.13	58.12	129.70	0.47
5300.00	1.68	160.10	5298.59	-39.76	46.99	-39.76	60.78	130.84	0.34
5400.00	1.84	163.04	5398.54	-42.65	46.94	-42.65	63.43	132.28	0.19
5500.00	1.43	143.82	5498.50	-45.20	48.16	-45.20	66.04	133.19	0.68
5600.00	0.70	119.57	5598.49	-46.50	49.41	-46.50	67.86	133.28	0.85
5700.00	0.49	151.70	5698.48	-47.18	50.16	-47.18	68.85	133.26	0.38

Measured Depth FT	Incl Angle Deg	Dnt Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure FT	Closure Direction Deg	Dogleg Severity Deg/100
5800.00	0.89	145.75	5798.47	-48.27	50.83	-48.27	70.10	133.62	0.60
5800.00	0.30	120.77	5898.47	-49.12	61.64	-49.12	71.20	133.62	0.73
6000.00	0.58	102.19	6098.46	-49.36	62.28	-49.36	71.90	133.36	0.32
6100.00	0.68	169.87	6098.46	-49.97	62.87	-49.97	72.76	133.38	0.66
6200.00	0.32	117.87	6198.46	-50.59	63.21	-50.59	73.42	133.66	0.46
6300.00	0.21	149.83	6298.46	-50.88	63.55	-50.88	73.87	133.54	0.18
6400.00	0.36	154.90	6398.46	-51.33	53.77	-51.33	74.34	133.67	0.16
6500.00	0.46	158.12	6498.46	-51.98	54.07	-51.98	75.00	133.67	0.09
6600.00	0.40	133.73	6598.46	-52.58	64.48	-52.58	75.72	133.98	0.17
6700.00	0.29	92.29	6698.46	-52.84	64.99	-52.84	76.26	133.86	0.27
6800.00	0.34	83.81	6798.44	-52.81	65.54	-52.81	76.64	133.66	0.07
6900.00	0.18	129.18	6898.44	-52.88	65.96	-52.88	76.99	133.38	0.26
7000.00	0.42	181.95	6998.44	-53.34	56.01	-53.34	77.34	133.60	0.38
7100.00	0.44	249.43	7098.44	-53.84	65.67	-53.84	77.37	134.09	0.41
7200.00	0.61	356.94	7198.44	-53.43	65.19	-53.43	76.82	134.08	0.86
7300.00	0.35	160.64	7298.44	-53.19	65.26	-53.19	76.70	133.91	0.96
7400.00	0.18	148.07	7398.43	-53.81	65.44	-53.81	77.12	134.04	0.18
7500.00	0.10	261.30	7498.43	-53.77	55.44	-53.77	77.23	134.12	0.22
7600.00	0.93	228.23	7598.43	-54.33	64.75	-54.33	77.13	134.78	0.84
7700.00	0.88	226.43	7698.42	-55.29	63.72	-55.29	77.09	135.82	0.25
7800.00	1.04	187.22	7798.41	-56.80	53.18	-56.80	77.57	136.78	0.65
7900.00	0.44	141.20	7898.40	-57.80	53.31	-57.80	78.63	137.31	0.80
8000.00	0.67	180.44	7998.40	-58.89	63.66	-58.89	79.46	137.62	0.43
8100.00	0.67	145.79	8098.39	-59.76	63.88	-59.76	80.46	137.96	0.40
8200.00	0.80	171.58	8198.38	-60.93	64.31	-60.93	81.82	138.29	0.35
8300.00	0.73	154.19	8298.37	-62.19	54.69	-62.19	82.82	138.67	0.24
8400.00	0.86	145.50	8398.36	-63.38	55.39	-63.38	84.17	138.86	0.18
8500.00	0.72	172.16	8498.35	-64.62	55.90	-64.62	85.44	139.14	0.39
8600.00	0.93	168.73	8598.34	-66.04	56.14	-66.04	86.68	139.63	0.22
8700.00	0.94	183.82	8698.33	-67.66	56.26	-67.66	87.98	140.26	0.24
8751.00	1.01	165.59	8749.32	-68.61	56.33	-68.61	88.70	140.57	0.62



VES Survey International
West Texas
(432) 563-5444
Surveyor: Jordan Shelleby
Rojo 7811 JV-P Federal Com 2H / API 30-025-42414





COG Operating LLC

Lea County, NM

7811 JV-P Rojo Com

#2H

OH

Survey: MWD #1

Survey Report - Geographic

08 April, 2015



Wellplanning Survey Report - Geographic

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM	TVD Reference:	WELL @ 3383.0usft (Original Well Elev)
Site:	7811 JV-P Rojo Com	MD Reference:	WELL @ 3383.0usft (Original Well Elev)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Project:	Lea County, NM	System Datum:	Mean Sea Level
Map System:	US State Plane 1927 (Exact solution)		
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	7811 JV-P Rojo Com		
Site Position:		Northing:	404,177.00 usft
From:	Map	Easting:	741,747.50 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 6' 31.651 N
		Longitude:	103° 33' 9.276 W
		Grid Convergence:	0.42 "

Well:	#2H		
Well Position:	+N-S	0.0 usft	Northing:
	+E-W	0.0 usft	Easting:
Position Uncertainty:	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 6' 31.651 N
		Longitude:	103° 33' 9.276 W
		Ground Level:	3,345.0 usft

Wellbore:	OH		
Magnetics:	Model Name	Sample Date	Declination
	IGRF2010	2/23/2015	7.11
			Dip Angle
			59.99
			Field Strength
			48,180

Design:	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			0.74

Survey Program	Date	4/8/2015		
From:	To:	Survey (Wellbore)	Tool Name	Description
100.0	8,751.0	GYRO (OH)	NS-GYRO-SS	NS Gyro single shots
8,829.0	14,982.0	MWD #1 (OH)	MWD	MWD - Standard

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,751.0	1.01	185.59	8,748.3	-68.5	56.3	404,108.46	741,803.80	32° 6' 30.988 N	103° 33' 8.627 W
8,829.0	0.90	181.00	8,827.3	-69.8	56.5	404,107.18	741,803.98	32° 6' 30.956 N	103° 33' 8.625 W
8,861.0	0.70	76.20	8,859.3	-70.0	56.8	404,106.98	741,804.15	32° 6' 30.954 N	103° 33' 8.623 W
8,892.0	2.90	34.70	8,890.3	-69.3	57.3	404,107.67	741,804.78	32° 6' 30.961 N	103° 33' 8.616 W
8,924.0	6.10	24.20	8,922.2	-67.1	58.4	404,109.89	741,805.94	32° 6' 30.983 N	103° 33' 8.602 W
8,956.0	10.40	18.60	8,953.8	-62.8	60.1	404,114.18	741,807.55	32° 6' 31.025 N	103° 33' 8.583 W
8,987.0	14.80	15.50	8,984.1	-56.3	62.0	404,120.67	741,808.51	32° 6' 31.089 N	103° 33' 8.580 W
9,019.0	20.00	15.40	9,014.6	-47.1	64.6	404,128.92	741,812.07	32° 6' 31.181 N	103° 33' 8.529 W
9,050.0	23.70	13.90	9,043.4	-35.9	67.5	404,141.08	741,814.97	32° 6' 31.291 N	103° 33' 8.494 W
9,082.0	26.20	12.80	9,072.4	-22.8	70.6	404,154.22	741,818.08	32° 6' 31.421 N	103° 33' 8.457 W
9,113.0	28.10	12.10	9,100.0	-9.0	73.6	404,168.03	741,821.13	32° 6' 31.557 N	103° 33' 8.421 W



Wellplanning
Survey Report - Geographic

Company: COG Operating LLC
Project: Lea County, NM
Site: 7811 JV-P Rojo Com
Well: #2H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #2H
TYD Reference: WELL @ 3383.0usft (Original Well Elev)
MD Reference: WELL @ 3383.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,145.0	29.90	10.40	9,128.0	6.2	76.7	404,183.24	741,824.15	32° 6' 31.707 N	103° 33' 8.364 W
9,177.0	32.90	7.80	9,155.3	22.7	79.3	404,199.70	741,826.77	32° 6' 31.870 N	103° 33' 8.352 W
9,208.0	37.20	6.10	9,180.6	40.4	81.4	404,217.37	741,828.91	32° 6' 32.045 N	103° 33' 8.328 W
9,240.0	40.40	5.70	9,205.6	80.3	83.5	404,237.31	741,830.97	32° 6' 32.242 N	103° 33' 8.300 W
9,271.0	43.80	3.70	9,228.6	81.0	85.2	404,258.02	741,832.66	32° 6' 32.447 N	103° 33' 8.278 W
9,303.0	48.10	1.10	9,250.6	104.0	86.1	404,280.99	741,833.60	32° 6' 32.674 N	103° 33' 8.266 W
9,335.0	53.90	359.50	9,271.0	128.9	86.2	404,305.85	741,833.72	32° 6' 32.820 N	103° 33' 8.263 W
9,368.0	59.00	359.20	9,288.1	154.7	85.9	404,331.88	741,833.42	32° 6' 33.176 N	103° 33' 8.264 W
9,398.0	60.80	359.20	9,304.1	182.4	85.5	404,359.36	741,833.04	32° 6' 33.450 N	103° 33' 8.266 W
9,430.0	62.30	359.40	9,319.4	210.5	85.2	404,387.49	741,832.89	32° 6' 33.728 N	103° 33' 8.268 W
9,461.0	64.30	359.60	9,333.3	238.2	85.0	404,415.18	741,832.45	32° 6' 34.002 N	103° 33' 8.268 W
9,493.0	67.00	359.60	9,346.5	267.3	84.8	404,444.33	741,832.25	32° 6' 34.290 N	103° 33' 8.268 W
9,524.0	69.50	359.20	9,358.0	296.1	84.4	404,473.12	741,831.95	32° 6' 34.575 N	103° 33' 8.269 W
9,556.0	73.50	359.60	9,368.1	326.5	83.9	404,503.45	741,831.38	32° 6' 34.878 N	103° 33' 8.273 W
9,588.0	78.10	358.40	9,376.0	357.5	83.1	404,534.48	741,830.55	32° 6' 35.182 N	103° 33' 8.280 W
9,619.0	82.10	358.60	9,381.3	389.0	82.3	404,564.98	741,829.80	32° 6' 35.485 N	103° 33' 8.286 W
9,639.0	84.10	358.40	9,383.7	407.8	81.8	404,584.83	741,829.32	32° 6' 35.681 N	103° 33' 8.290 W
9,670.0	85.40	358.90	9,386.5	438.7	81.1	404,615.69	741,828.59	32° 6' 35.988 N	103° 33' 8.298 W
9,702.0	87.00	359.00	9,388.7	470.6	80.5	404,647.61	741,828.01	32° 6' 36.302 N	103° 33' 8.300 W
9,733.0	87.90	359.30	9,390.0	501.6	80.1	404,678.58	741,827.55	32° 6' 36.609 N	103° 33' 8.303 W
9,765.0	88.00	359.00	9,391.2	533.6	79.6	404,710.55	741,827.07	32° 6' 36.925 N	103° 33' 8.306 W
9,800.0	91.80	358.60	9,391.4	628.5	77.6	404,805.52	741,825.08	32° 6' 37.885 N	103° 33' 8.321 W
9,855.0	91.20	358.90	9,388.9	723.5	75.5	404,900.46	741,823.01	32° 6' 38.805 N	103° 33' 8.337 W
10,050.0	90.10	357.70	9,387.8	818.4	72.7	404,985.41	741,820.19	32° 6' 39.745 N	103° 33' 8.362 W
10,145.0	89.10	355.90	9,388.5	913.3	67.4	405,080.25	741,814.89	32° 6' 40.684 N	103° 33' 8.415 W
10,240.0	91.40	357.10	9,388.0	1,008.1	61.8	405,185.07	741,809.09	32° 6' 41.622 N	103° 33' 8.475 W
10,335.0	91.80	357.70	9,385.4	1,102.9	57.3	405,279.93	741,804.78	32° 6' 42.561 N	103° 33' 8.517 W
10,430.0	91.00	358.80	9,383.1	1,197.9	54.4	405,374.86	741,801.88	32° 6' 43.501 N	103° 33' 8.543 W
10,525.0	90.80	359.60	9,381.7	1,292.8	53.1	405,469.84	741,800.58	32° 6' 44.441 N	103° 33' 8.550 W
10,619.0	90.40	359.70	9,380.9	1,388.8	52.5	405,563.83	741,799.89	32° 6' 45.371 N	103° 33' 8.549 W
10,715.0	91.20	1.70	9,379.6	1,482.8	53.7	405,659.81	741,801.18	32° 6' 46.321 N	103° 33' 8.527 W
10,809.0	89.60	3.00	9,378.7	1,576.7	57.5	405,753.72	741,805.01	32° 6' 47.250 N	103° 33' 8.474 W
10,904.0	89.80	3.50	9,378.8	1,671.6	62.9	405,848.57	741,810.40	32° 6' 48.188 N	103° 33' 8.404 W
10,999.0	87.80	2.40	9,380.7	1,766.4	67.8	405,943.42	741,815.28	32° 6' 49.126 N	103° 33' 8.339 W
11,094.0	89.50	3.30	9,382.8	1,861.3	72.5	406,038.27	741,820.01	32° 6' 50.064 N	103° 33' 8.276 W
11,189.0	80.60	2.90	9,382.7	1,956.1	77.6	406,133.13	741,825.14	32° 6' 51.003 N	103° 33' 8.208 W
11,284.0	88.70	0.40	9,383.3	2,051.1	80.4	406,228.08	741,827.88	32° 6' 51.942 N	103° 33' 8.189 W
11,379.0	89.80	1.10	9,384.6	2,146.1	81.6	406,323.06	741,829.12	32° 6' 52.882 N	103° 33' 8.146 W
11,474.0	88.30	358.00	9,386.1	2,241.0	81.7	406,418.04	741,829.21	32° 6' 53.822 N	103° 33' 8.137 W
11,569.0	87.40	357.80	9,389.7	2,335.9	79.1	406,512.93	741,826.56	32° 6' 54.761 N	103° 33' 8.160 W
11,664.0	90.00	357.60	9,391.9	2,430.8	75.2	406,607.83	741,822.74	32° 6' 55.700 N	103° 33' 8.198 W
11,758.0	80.10	356.70	9,391.8	2,524.8	72.2	406,701.77	741,819.71	32° 6' 56.630 N	103° 33' 8.224 W
11,853.0	89.50	359.20	9,392.1	2,619.8	70.5	406,796.76	741,817.97	32° 6' 57.570 N	103° 33' 8.236 W
11,947.0	89.50	359.00	9,392.9	2,713.7	69.0	406,890.74	741,816.49	32° 6' 58.500 N	103° 33' 8.245 W
12,042.0	90.20	359.10	9,393.2	2,808.7	67.4	406,985.73	741,814.82	32° 6' 59.440 N	103° 33' 8.255 W
12,137.0	91.30	1.00	9,391.9	2,903.7	67.5	407,080.71	741,815.00	32° 7' 0.380 N	103° 33' 8.246 W
12,232.0	83.90	1.00	9,387.6	2,998.6	69.2	407,175.59	741,816.66	32° 7' 1.319 N	103° 33' 8.219 W
12,328.0	94.90	359.80	9,380.3	3,094.3	69.8	407,271.31	741,817.33	32° 7' 2.266 N	103° 33' 8.203 W
12,423.0	94.90	359.60	9,372.1	3,189.0	69.3	407,365.98	741,816.83	32° 7' 3.203 N	103° 33' 8.201 W
12,518.0	94.60	359.50	9,384.3	3,283.6	68.8	407,460.83	741,816.09	32° 7' 4.140 N	103° 33' 8.202 W
12,613.0	93.80	0.80	9,357.3	3,378.4	68.7	407,555.37	741,816.17	32° 7' 5.077 N	103° 33' 8.193 W
12,708.0	94.40	1.10	9,350.5	3,473.1	70.1	407,650.12	741,817.57	32° 7' 6.015 N	103° 33' 8.189 W
12,803.0	93.10	358.80	9,344.3	3,567.9	70.0	407,744.90	741,817.49	32° 7' 6.953 N	103° 33' 8.182 W
12,898.0	91.30	358.80	9,340.7	3,662.8	68.0	407,839.81	741,815.50	32° 7' 7.892 N	103° 33' 8.177 W
12,993.0	90.20	358.70	9,339.4	3,757.8	66.8	407,934.79	741,814.26	32° 7' 8.832 N	103° 33' 8.183 W



Wellplanning Survey Report - Geographic

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM	TVD Reference:	WELL @ 3383.0usft (Original Well Elev)
Site:	7611 JV-P Rojo Com	MD Reference:	WELL @ 3383.0usft (Original Well Elev)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
13,087.0	88.10	359.90	9,340.0	3,851.8	68.4	408,028.79	741,813.93	32° 7' 9.782 N	103° 33' 8.179 W
13,182.0	88.40	359.20	9,342.1	3,846.8	65.7	408,123.76	741,813.19	32° 7' 10.702 N	103° 33' 8.180 W
13,277.0	88.50	358.50	9,344.6	4,041.7	63.8	408,218.71	741,811.28	32° 7' 11.642 N	103° 33' 8.194 W
13,372.0	88.00	359.10	9,346.7	4,136.7	61.8	408,313.66	741,809.29	32° 7' 12.582 N	103° 33' 8.209 W
13,467.0	89.20	1.00	9,348.2	4,231.8	61.9	408,408.85	741,809.37	32° 7' 13.521 N	103° 33' 8.200 W
13,563.0	88.40	0.40	9,350.2	4,327.6	63.0	408,504.82	741,810.55	32° 7' 14.471 N	103° 33' 8.178 W
13,659.0	87.80	0.80	9,353.4	4,422.6	64.0	408,599.56	741,811.54	32° 7' 15.411 N	103° 33' 8.159 W
13,752.0	88.40	0.50	9,356.5	4,518.5	65.1	408,693.50	741,812.61	32° 7' 16.340 N	103° 33' 8.138 W
13,847.0	87.30	0.00	9,360.0	4,611.4	65.5	408,788.43	741,813.02	32° 7' 17.279 N	103° 33' 8.128 W
13,942.0	88.90	359.30	9,364.9	4,706.3	64.9	408,883.31	741,812.44	32° 7' 18.218 N	103° 33' 8.124 W
14,045.0	88.20	358.80	9,369.3	4,809.2	63.2	408,986.19	741,810.73	32° 7' 19.237 N	103° 33' 8.135 W
14,092.0	88.20	358.80	9,370.7	4,858.2	62.3	408,033.18	741,809.75	32° 7' 19.701 N	103° 33' 8.143 W
PBHL(JVPROJO#2H)									

Checked By: _____	Approved By: _____	Date: _____
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