

DATE IN 2/28/2016	SUSPENSE	ENGINEER M A M	LOGGED IN 3/08/2016	TYPE NSL	APP NO. PMAm16 06841433
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
 - Engineering Bureau -
 1220 South St. Francis Drive, Santa Fe, NM 87505



ADMINISTRATIVE APPLICATION CHECKLIST

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

Application Acronyms:

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

- [1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]
 [A] Location - Spacing Unit - Simultaneous Dedication
☒ NSL ☐ NSP ☐ SD
 Check One Only for [B] or [C]
 [B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
 [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR
 [D] Other: Specify _____
- [2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or ☒ Does Not Apply
 [A] ☐ Working, Royalty or Overriding Royalty Interest Owners
 [B] ☐ Offset Operators, Leaseholders or Surface Owner
 [C] ☐ Application is One Which Requires Published Legal Notice
 [D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
 [E] ☒ For all of the above, Proof of Notification or Publication is Attached, and/or,
 [F] ☐ Waivers are Attached
- [3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**
- [4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate and complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

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

Kelly Holly

Print or Type Name

Signature

Permitting Tech

Title
kholly@concho.com

02/22/2016

Date

- NSL 7392
 - COG operating LLC
 229137
 well
 - Pan Head Fed commingling
 30-025-12 pending
 2016 FEB 25 P 3:21
 RECEIVED OGD
 Pool
 - Malyaman's yes
 west
 4450

**Flat Head Federal Com #15H
Lea County, NM**

COG proposes to drill a **HORIZONTAL**, 200 acre spacing
Maljamar; Yeso, West oil well
TD of approximately 5900'

Location:

SHL: 940' FNL & 2440' FEL Sec 14, T17S, R32E, Unit B
BHL: 330' FNL & 2310' FEL Sec 11, T17S, R32E, Unit B

**This well had to be drilled at a non-standard location due to a buried
pipeline too close to original location.**

The plan for this well is to complete it in the Yeso formation.
We won't know the exact perms until we drill & log it, but it will be very similar to
the J C Federal #9 (1650' FNL & 1650' FEL, Section 22, T17S, R32E, UL G)
which was completed in October 2007.

The J C Federal #9 completion has Yeso perms from 5478' – 6535', divided into 3
perf/stimulation intervals.

1st interval: 5478' – 5840',
acidized w/ 3000 gals,
frac'd w/ 42,294 gals 40# linear gel; 38,096 gal 30# linear gel; 7,382# LiteProp;
22,049# 16/30 white; 21,873# SiberProp resin coated; Flush w/5,292 gal linear
gel.

2nd interval: 6055' – 6255',
acidized w/ 5342 gals,
frac'd w/ 50,048# gal gel & 61,612 gals 16/30 sand.

3rd interval: 6335' – 6535',
acidized w/ 5000 gals,
frac'd w/ 49,601# gal gel & 45,586 gals 16/30 sand.

Attachment 1

Plat & Map

Attachment 2

Map & legend of offset wells.

Attachment 3

Updated land plat showing COG Operating LLC acreage.
The acreage we are encroaching on is Unit c of Sec 14.

All interests are the same.

COG Operating LLC respectfully requests permission to have this NSL approved.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
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

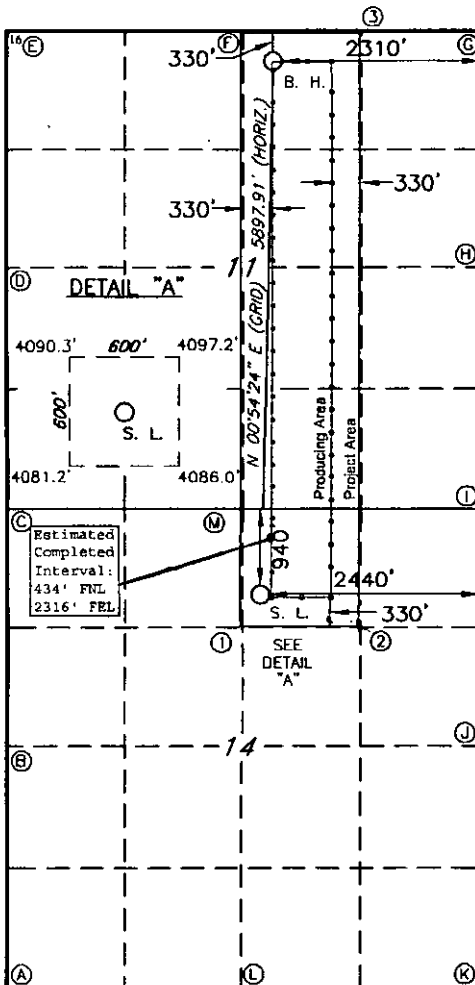
Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-		² Pool Code 44500		³ Pool Name Maljamar, Yeso, West					
⁴ Property Code 40481		⁵ Property Name FLAT HEAD FEDERAL COM						⁶ Well Number 15H	
⁷ OGRID NO. 229137		⁸ Operator Name COG OPERATING, LLC						⁹ Elevation 4088'	
¹⁰ Surface Location									
UL or lot no B	Section 14	Township 17S	Range 32E	Lot Idn	Feet from the 940	North/South line NORTH	Feet from the 2440	East/West line EAST	County LEA
¹¹ Bottom Hole Location If Different From Surface									
UL or lot no B	Section 11	Township 17S	Range 32E	Lot Idn	Feet from the 330	North/South line NORTH	Feet from the 2310	East/West line EAST	County LEA
¹² Dedicated Acres 200		¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.			

No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.



GEODETIC DATA
NAD 83 GRID - NM EAST
SURFACE LOCATION
N 669557.9 - E 724662.4
LAT: 32.83921649° N
LONG: 103.73644377° W
BOTTOM HOLE
N 675453.7 - E 724755.6
LAT: 32.85541975° N
LONG: 103.73603157° W

CORNER DATA
NAD 83 GRID - NM EAST
A: FOUND BRASS CAP "1913"
N 665220.0 - E 721849.6
B: FOUND BRASS CAP "1913"
N 667859.2 - E 721833.3
C: FOUND BRASS CAP "1913"
N 670497.8 - E 721816.9
D: FOUND BRASS CAP "1913"
N 673135.6 - E 721803.6
E: FOUND BRASS CAP "1913"
N 675771.1 - E 721786.3
F: FOUND BRASS CAP "1913"
N 675782.2 - E 724424.0
G: FOUND BRASS CAP "1913"
N 675793.6 - E 727062.9
H: FOUND BRASS CAP "1913"
N 673155.6 - E 727079.7
I: FOUND BRASS CAP "1913"
N 670517.3 - E 727096.3
J: FOUND BRASS CAP "1913"
N 667878.3 - E 727113.4
K: FOUND BRASS CAP "1913"
N 665238.4 - E 727129.7
L: FOUND BRASS CAP "1913"
N 665229.1 - E 724489.8
M: FOUND BRASS CAP "1913"
N 670496.2 - E 724451.5
1: CALCULATED CORNER
N 669193.0 - E 725782.8
2: CALCULATED CORNER
N 669193.0 - E 725782.8
3: CALCULATED CORNER
N 675787.9 - E 725743.5

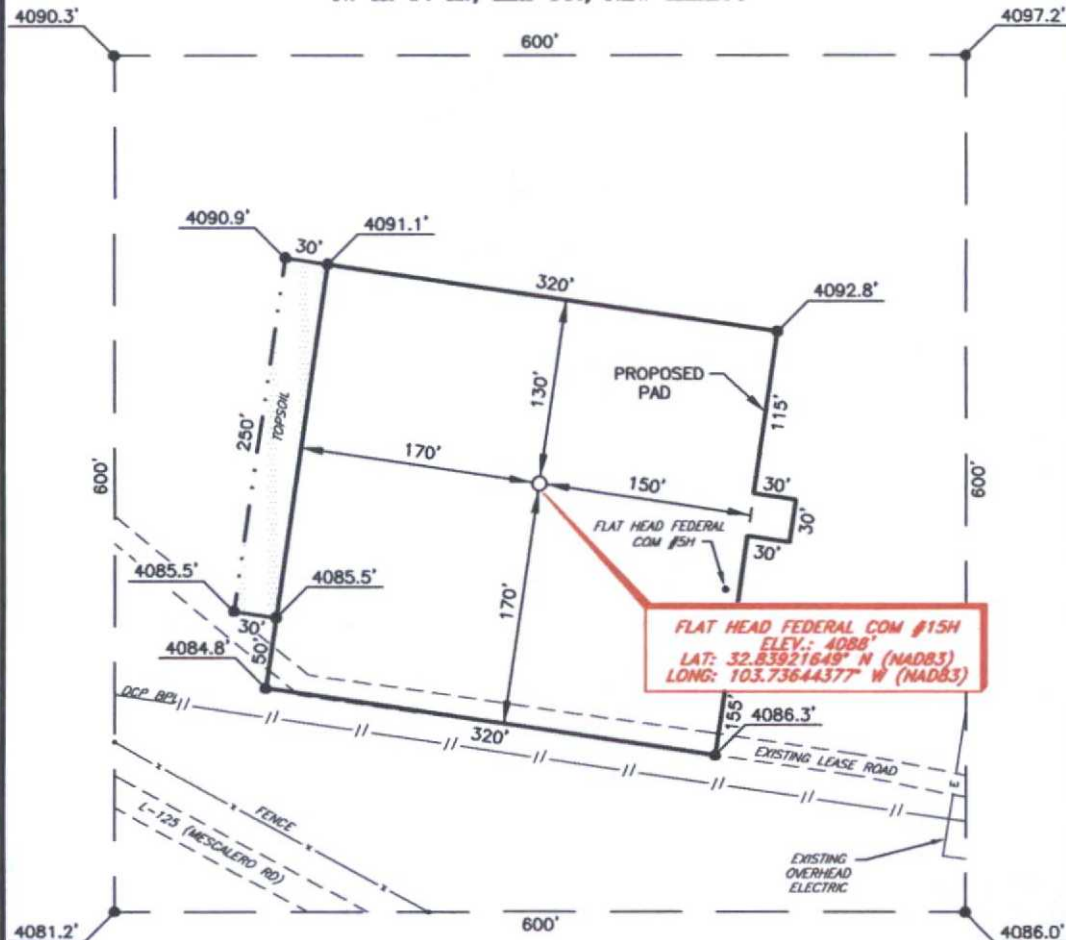
17 OPERATOR CERTIFICATION
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to 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 that has been approved by the division.

Signature: Kelly J. Holly Date: 02/22/2016
Printed Name: Kelly J. Holly
E-mail Address: kholly@concho.com

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.

2-19-16
Date of Survey
Signature and Seal of Professional Surveyor: Robert M. Howett
19680
Certificate Number

COG OPERATING, LLC
 FLAT HEAD FEDERAL COM #15H
 (940' FNL & 2440' FEL)
 SECTION 14, T17S, R32E
 N. M. P. M., LEA CO., NEW MEXICO



DIRECTIONS TO LOCATION

From the intersection of L-125 (Mescalero Road) and L-126 (Maljamar Road);
 Go East on L-125 for approx. 1.5 miles to lease road on left;
 Turn left go North turning East following lease road approx. 0.1 miles to this location.

SCALE: 1" = 100'
 0 50 100
 BEARINGS ARE
 NAD 83 GRID - NW EAST
 DISTANCES ARE
 GROUND.

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this unclassified survey of a well location from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Professional Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Robert M. Howett
 Robert M. Howett NM PS 19680



Firm No.: TX 10193838 NM 4655451

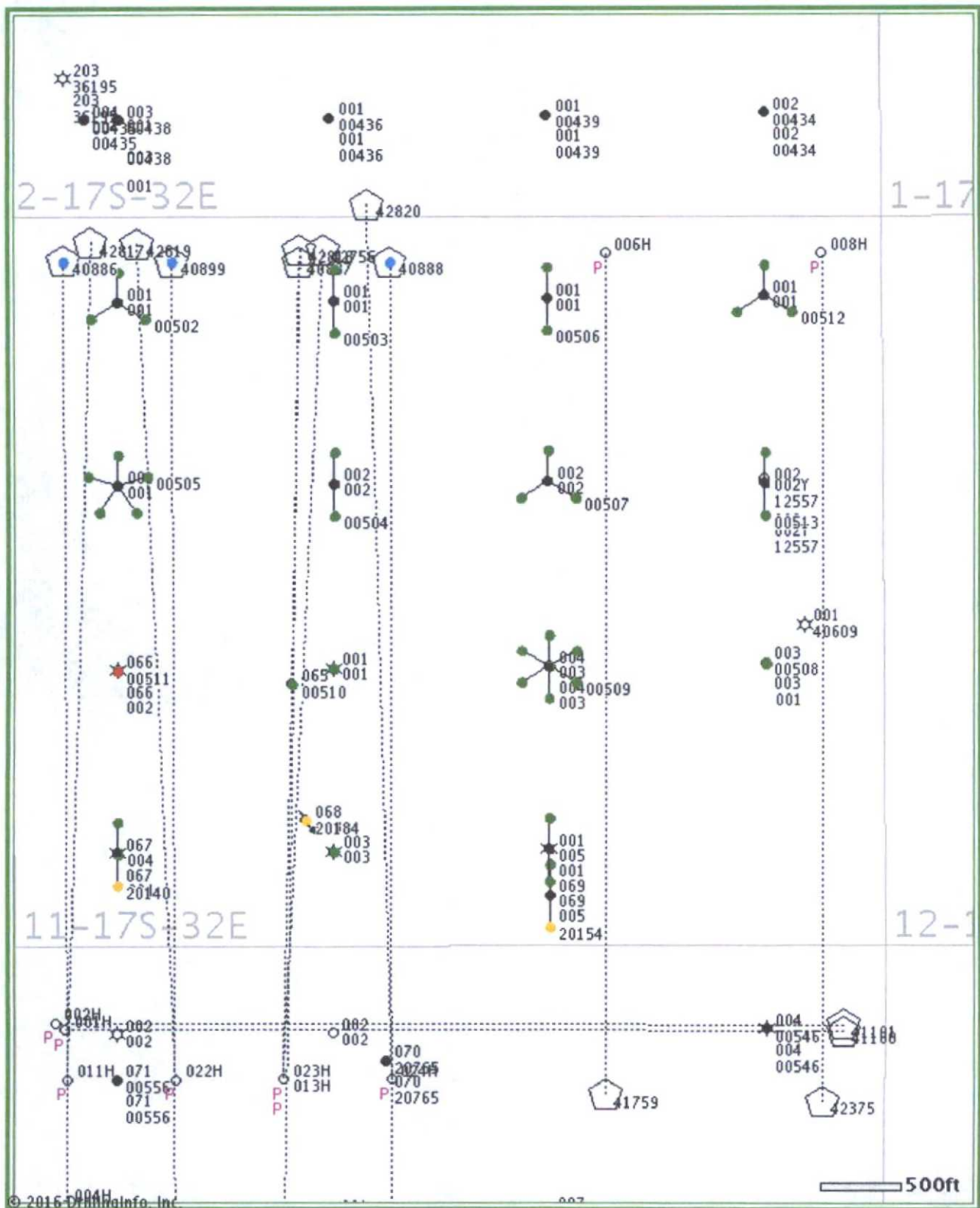
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NO.	REVISION	DATE
JOB NO.:	LS1504160	
DWG. NO.:	1504160PAD	

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 100'
DATE: 5-1-15
SURVEYED BY: ML/ER
DRAWN BY: JC
APPROVED BY: RMH
SHEET : 1 OF 1

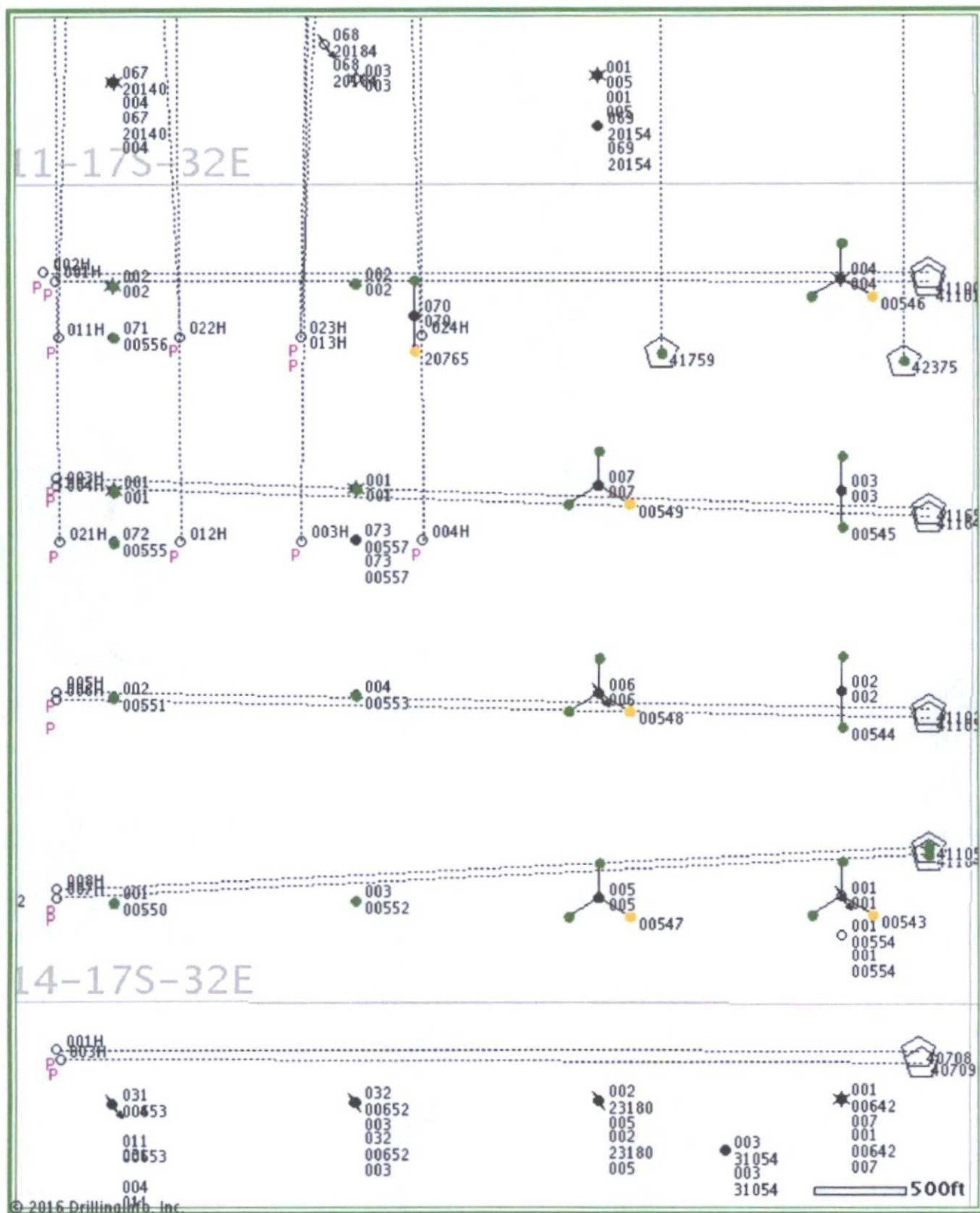


Producing Wells in Sec 11, T17S, R32E

API#	Operator	Lease	Well#	County	Legal	Prac. IP (BO/D)	Prac. IP (MCF/D)	First Prod.	Avg. (BO/D)	Avg. (MCF/D)	Last Prod.	Cumulative Oil	Cumulative Gas	Cumulative Water
30-025-00505		TAYLOR G	001	LEA	S:11, T:17S, R:32E	4.14	0.00	Jan 1959	0.03	0.00	Jun 1965	37,636	0	38,510
30-025-00508	NICHOLS,LEONARD	TRIMBLE B	003	LEA	S:11, T:17S, R:32E	39.26	0.00	Feb 1947	0.13	0.00	Apr 1958	10,852	0	32
30-025-20154	CHEVRON U S A INC	MALJAMAR GRAYBURG UNIT	069	LEA	S:11, T:17S, R:32E	0.32	3.61	Jan 1967	0.20	3.60	Apr 1967	54	433	7,048
30-025-00512		COCKBURN TRIMBLE	001	LEA	S:11, T:17S, R:32E	3.64	0.00	Jan 1959	0.26	0.00	Mar 1965	41,803	3,665	50,024
30-025-00000	NICHOLS LEONARD	AC TAYLOR E REPORT 2	002	LEA	S:11, T:17S, R:32E	75.45	0.00	Sep 1962	0.45	5.35	Dec 1966	49,528	8,787	118,652
30-025-00511	CHEVRON U S A INC	MALJAMAR GRAYBURG UNIT	066	LEA	S:11, T:17S, R:32E	0.14	6.32	Jan 1967	0.47	9.90	Apr 1967	44	764	4,540
30-025-00510	CHEVRON U S A INC	MALJAMAR GRAYBURG UNIT	065	LEA	S:11, T:17S, R:32E	42.04	12.64	Jan 1967	0.48	0.03	Dec 1969	11,885	2,594	66,540
30-025-00000	NICHOLS, LEONARD	TRIMBLE B	001	LEA	S:11, T:17S, R:32E	0.89	0.00	Jan 1955	0.55	0.00	Dec 1956	442	0	0
30-025-20140	LINN OPERATING, INC.	MALJAMAR GRAYBURG UNIT	067	LEA	S:11, T:17S, R:32E	18.18	3.96	Jan 1967	0.57	2.73	Nov 2015	66,314	16,051	71,830
30-025-00509	NICHOLS, LEONARD	TRIMBLE A	004	LEA	S:11, T:17S, R:32E	4.36	0.00	Jan 1954	0.58	0.00	Dec 1958	1,116	0	0
30-025-00512		COCKBURN TRIMBLE	001	LEA	S:11, T:17S, R:32E	0.00	0.00	Jul 1966	0.61	0.00	Jan 1967	113	0	20
30-025-00513	WATSON J.C.	TRIMBLE	002	LEA	S:11, T:17S, R:32E	43.52	0.00	Jun 1946	0.65	0.00	Dec 1960	36,205	0	0
30-025-00000	NICHOLS, LEONARD	TRIMBLE A	003	LEA	S:11, T:17S, R:32E	0.79	0.00	Jan 1955	0.65	0.00	Dec 1956	777	0	0
30-025-00509		TRIMBLE A	004	LEA	S:11, T:17S, R:32E	0.50	0.00	Jan 1959	0.97	13.45	May 1961	342	4,686	0
30-025-00505	OHIO OIL CO.	TAYLOR, A. C.	001	LEA	S:11, T:17S, R:32E	42.70	0.00	Aug 1947	1.06	0.00	Dec 1960	21,508	0	0
30-025-00509	OHIO OIL COMPANY	TRIMBLE, W. B.	004	LEA		26.17	0.00	Jan 1948	1.87	0.00	Dec 1960	6,343	1,118	0

					S:11, T:17S, R:32E									
30-025-00512	WATSON J.C.	TRIMBLE	001	LEA	S:11, T:17S, R:32E	31.25	0.00	Jan 1946	1.97	0.00	Dec 1960	71,294	0	0
30-025-00506	NICHOLS,LEONARD	TRIMBLE A	001	LEA	S:11, T:17S, R:32E	46.58	0.00	Apr 1946	2.06	25.26	Oct 1960	68,257	5,969	34
30-025-00502	NICHOLS,LEONARD	TAYLOR A.C.	001	LEA	S:11, T:17S, R:32E	7.57	0.00	Jan 1953	2.19	0.00	Dec 1958	3,532	0	0
30-025-00000	NICHOLS LEONARD	WB TRIMBLE O	005	LEA	S:11, T:17S, R:32E	11.52	85.00	Jul 1963	2.77	3.61	Dec 1966	5,822	11,186	6,973
30-025-00509	NICHOLS,LEONARD	ST. B	004	LEA	S:11, T:17S, R:32E	1.41	0.00	Jan 1952	2.90	0.00	Dec 1953	1,796	0	0
30-025-00502		TAYLOR F	001	LEA	S:11, T:17S, R:32E	1.07	0.00	Jan 1959	2.94	0.00	Oct 1959	501	0	0
30-025-00502	OHIO OIL CO.	TAYLOR F	001	LEA	S:11, T:17S, R:32E	7.21	0.00	Jan 1949	2.97	0.00	Dec 1956	13,111	0	0
30-025-00509	OHIO - CONT'D.	TRIMBLE B	004	LEA	S:11, T:17S, R:32E	5.32	0.00	Jan 1949	3.50	0.00	Nov 1951	4,526	0	0
30-025-00504	NICHOLS,LEONARD	TAYLOR A.C.	002	LEA	S:11, T:17S, R:32E	29.55	0.00	Dec 1946	3.55	0.00	Oct 1960	34,894	1,210	8
30-025-00505		TAYLOR G	001	LEA	S:11, T:17S, R:32E	5.46	0.00	Jan 1967	4.33	0.00	Apr 1967	722	0	1,250
30-025-00504		TAYLOR A	002	LEA	S:11, T:17S, R:32E	7.04	0.00	Jan 1959	4.90	0.00	Dec 1959	2,033	3,052	0
30-025-00505	NICHOLS,LEONARD	TAYLOR G	001	LEA	S:11, T:17S, R:32E	22.25	0.00	Jan 1949	5.39	0.00	Dec 1958	27,808	0	0
30-025-00000	NICHOLS LEONARD	A C TAYLOR E REPT 3	003	LEA	S:11, T:17S, R:32E	36.00	8.87	Apr 1963	5.61	18.84	Jan 1964	6,151	6,230	0
30-025-00506		TRIMBLE A	001	LEA	S:11, T:17S, R:32E	6.71	0.00	Jan 1959	5.84	0.00	Dec 1959	1,944	1,662	0
30-025-00000	OHIO OIL COMPANY	TAYLOR, A. C. F	001	LEA	S:11, T:17S, R:32E	13.86	0.00	Jan 1948	6.45	0.00	Dec 1948	4,562	0	0
30-025-00507		TRIMBLE A	002	LEA	S:11, T:17S, R:32E	4.93	0.00	Jan 1967	6.48	0.00	Dec 1967	2,068	0	1,417
30-025-00507		TRIMBLE A	002	LEA	S:11, T:17S, R:32E	5.46	0.00	Jan 1959	6.48	8.42	Dec 1967	47,858	4,111	13,545

30-025-00513		COCKBURN TRIMBLE	002	LEA	S:11, T:17S, R:32E	1.82	0.00	Jan 1959	6.71	0.00	Aug 1961	1,133	0	0
30-025-00507	NICHOLS,LEONARD	TRIMBLE A	002	LEA	S:11, T:17S, R:32E	44.26	0.00	Sep 1946	7.52	7.00	Dec 1960	46,687	607	13
30-025-00503	NICHOLS,LEONARD	TAYLOR, A.C.	001	LEA	S:11, T:17S, R:32E	46.53	0.00	Mar 1946	12.74	4.68	Dec 1960	62,994	8,971	36
30-025-00503		TAYLOR A	001	LEA	S:11, T:17S, R:32E	5.75	0.00	Jan 1959	15.74	0.00	Dec 1967	82,036	8,331	49,080
30-025-00000	NICHOLS LEONARD	A C TAYLOR E REPT 3	004	LEA	S:11, T:17S, R:32E	36.00	0.00	Apr 1963	18.81	3.77	Dec 1966	28,880	20,130	2,211
30-025-00509	OHIO OIL CO.	TRIMBLE	004	LEA	S:11, T:17S, R:32E	21.00	0.00	Jun 1947	25.97	0.00	Dec 1947	5,084	0	0
30-025-00505	OHIO OIL COMPANY	TAYLOR, A. C. G	001	LEA	S:11, T:17S, R:32E	44.07	0.00	Jan 1948	30.10	0.00	Dec 1948	14,223	0	0
30-025-00000	NICHOLS LEONARD	A C TAYLOR E	001	LEA	S:11, T:17S, R:32E	144.20	0.00	Aug 1962	34.94	8.42	Dec 1966	79,860	32,954	90,925
30-025-40888	COG OPERATING LLC	PAN HEAD FEE	004H	LEA	S:11, T:17S, R:32E	360.43	437.30	Mar 2014	69.20	85.93	Nov 2015	63,040	75,382	203,604
30-025-40886	COG OPERATING LLC	PAN HEAD FEE	021H	LEA	S:11, T:17S, R:32E			Nov 2015	128.37	111.17	Nov 2015	3,851	3,335	23,433
30-025-40899	COG OPERATING LLC	PAN HEAD FEE	012H	LEA	S:11, T:17S, R:32E	489.17	419.37	May 2015	315.20	419.57	Nov 2015	69,028	75,680	185,608



Producing Wells in Sec 14, T17S, R32E

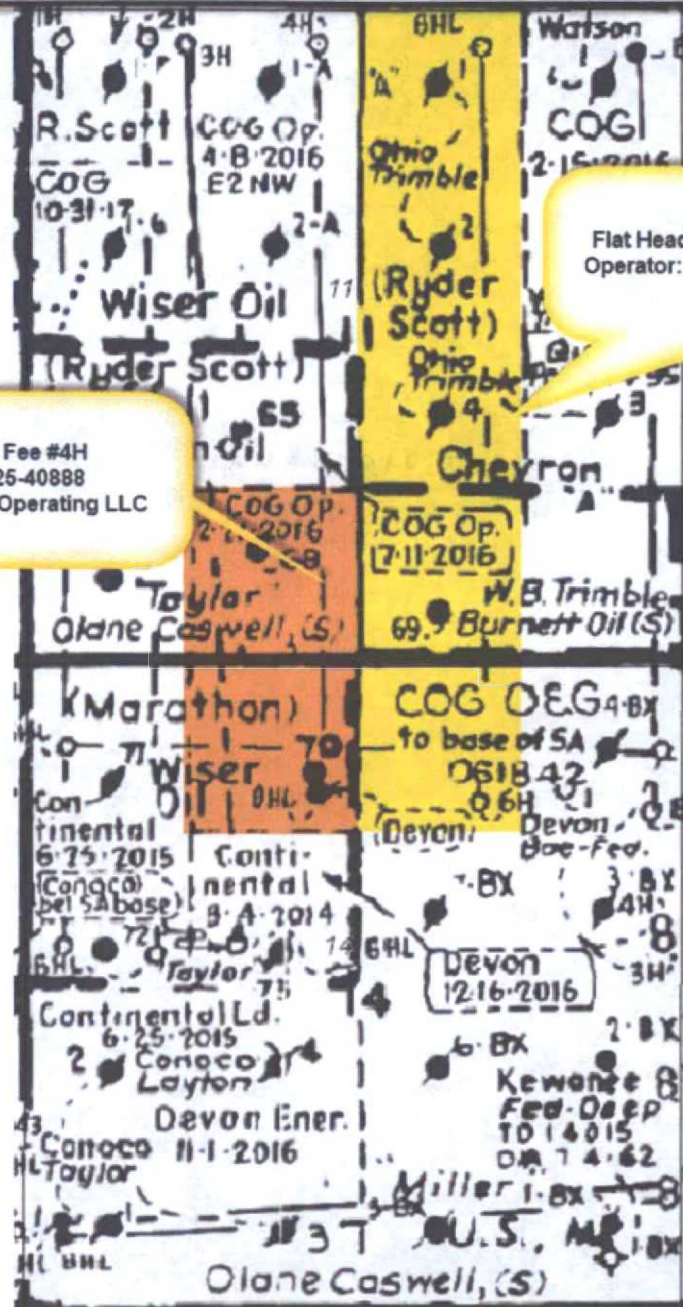
API#	Operator	Lease	Well#	County	Legal	Prac. IP (BO/D)	Prac. IP (MCF/D)	First Prod.	Avg. (BO/D)	Avg. (MCF/D)	Last Prod.	Cumulative Oil	Cumulative Gas	Cumulative Water
30-025-00548	MACK ENERGY CORP	MILLER BX	006	LEA	S:14, T:17S, R:32E	4.50	2.54	Jan 1962	0.00	18.97	Jul 1963	2,306	5,471	0
30-025-00553		TAYLOR	004	LEA	S:14, T:17S, R:32E	44.00	17.40	Oct 1961	0.23	0.00	Oct 1983	75,282	62,788	83,585
30-025-00547	MACK ENERGY CORP	MILLER BX	005	LEA	S:14, T:17S, R:32E			Dec 1961	0.30	0.40	Nov 1969	10,184	18,305	5,307
30-025-00550		TAYLOR	001	LEA	S:14, T:17S, R:32E	35.19	20.16	Apr 1961	0.30	0.00	Sep 1983	59,370	93,996	300,502
30-025-20765	LINN OPERATING, INC.	MALJAMAR GRAYBURG UNIT	070	LEA	S:14, T:17S, R:32E	5.71	10.64	Jan 1967	0.57	2.73	Nov 2015	64,334	28,584	56,634
30-025-00546	MACK ENERGY CORP	MILLER BX	004	LEA	S:14, T:17S, R:32E	12.29	492.71	Jan 1961	0.70	0.00	Jun 2000	53,391	125,349	107,960
30-025-00555	LINN OPERATING, INC.	MALJAMAR GRAYBURG UNIT	072	LEA	S:14, T:17S, R:32E	10.57	37.32	Jan 1967	1.17	2.73	Nov 2015	38,120	36,126	63,070
30-025-00000	NICHOLS LEONARD	A C TAYLOR D FEDERAL	001	LEA	S:14, T:17S, R:32E	31.11	0.00	Jan 1962	1.48	4.55	Aug 1965	16,652	39,471	1,262
30-025-00551		TAYLOR	002	LEA	S:14, T:17S, R:32E	41.80	64.67	May 1961	1.65	9.58	Aug 1969	27,453	54,066	93
30-025-00545	MACK ENERGY CORP	MILLER BX	003	LEA	S:14, T:17S, R:32E	31.00	35.39	Jan 1961	2.10	1.77	Nov 1995	21,116	46,841	20,473
30-025-00544	COG OPERATING LLC	MILLER BX	002	LEA	S:14, T:17S, R:32E	44.00	88.46	Jan 1961	2.13		Nov 2015	150,495	128,654	129,794
30-025-00546	MACK ENERGY CORP	MILLER BX	004	LEA	S:14, T:17S, R:32E	13.81	24.71	Nov 1960	3.19	0.42	Dec 1976	17,874	31,701	1,324
30-025-00543	MACK ENERGY CORP	MILLER BX	001	LEA	S:14, T:17S, R:32E	44.16	29.77	Jul 1960	3.58	15.94	Dec 1963	12,544	35,960	0
30-025-00545	MACK ENERGY CORP	MILLER BX	003	LEA	S:14, T:17S, R:32E	37.42	34.61	Sep 1960	3.58	14.00	Dec 1963	11,018	17,117	0
30-025-00549	MACK ENERGY CORP	MILLER BX	007	LEA	S:14, T:17S, R:32E	22.74	59.45	Jul 1962	4.42	6.61	Dec 1976	28,222	43,380	35,841

30-025-00556	CHEVRON U S A INC	MALJAMAR GRAYBURG UNIT	071	LEA	S:14, T:17S, R:32E	9.00	5.29	Jan 1967	4.50	3.20	Jun 1967	1,737	1,490	30
30-025-00548	MACK ENERGY CORP	MILLER BX	006	LEA	S:14, T:17S, R:32E			Dec 1961	4.87	27.13	May 1964	865	4,490	0
30-025-00549	MACK ENERGY CORP	MILLER BX	007	LEA	S:14, T:17S, R:32E	5.07	10.66	Jan 1964	6.65	6.26	Oct 1978	42,826	51,550	62,906
30-025-00552		TAYLOR	003	LEA	S:14, T:17S, R:32E	44.00	45.33	Aug 1961	6.68	11.81	Aug 1969	32,505	51,150	0
30-025-00544	MACK ENERGY CORP	MILLER BX	002	LEA	S:14, T:17S, R:32E	44.00	37.00	Aug 1960	8.58	0.42	Dec 1976	51,013	43,078	7,567
30-025-00000	SINCLAIR OIL AND GAS CO	A C TAYLOR D BATTERY 2	002	LEA	S:14, T:17S, R:32E	10.93	0.00	Jan 1965	8.97	13.55	Dec 1966	6,129	7,669	790
30-025-00000	NICHOLS LEONARD	TAYLOR C	001	LEA	S:14, T:17S, R:32E	33.77	0.00	Aug 1961	9.74	26.58	Dec 1966	25,177	62,200	4,984
30-025-00000	NICHOLS LEONARD	TAYLOR C	002	LEA	S:14, T:17S, R:32E	36.86	0.00	Jan 1962	10.26	4.68	Dec 1966	24,077	17,573	2,188
30-025-00547	MACK ENERGY CORP	MILLER BX	005	LEA	S:14, T:17S, R:32E	31.57	30.79	Jan 1962	13.97	0.00	Dec 1963	12,523	12,468	0
30-025-00543	MACK ENERGY CORP	MILLER BX	001	LEA	S:14, T:17S, R:32E	44.00	130.18	Jan 1961	21.87	5.61	Dec 1971	24,407	61,116	5,790
30-025-41104	DEVON ENERGY PRODUCTION COMPANY, LP	BAE 14 FEDERAL COM	007H	LEA	S:14, T:17S, R:32E	180.37	170.93	Oct 2014	25.07	20.13	Nov 2015	38,226	46,445	225,393
30-025-41105	DEVON ENERGY PRODUCTION COMPANY, LP	BAE 14 FEDERAL COM	008H	LEA	S:14, T:17S, R:32E			Nov 2015	50.27	76.70	Nov 2015	1,508	2,301	4,755
30-025-41759	COG OPERATING LLC	FLAT HEAD FEDERAL COM	006H	LEA	S:14, T:17S, R:32E	322.26	224.68	Sep 2014	52.57	46.97	Nov 2015	44,727	39,202	216,902
30-025-42375	COG OPERATING LLC	FLAT HEAD FEDERAL COM	008H	LEA	S:14, T:17S, R:32E	221.30	196.93	Mar 2015	101.60	160.90	Nov 2015	27,668	28,460	181,026

Flat Head Federal Com #15H
Non Standard Location Plat

Pan Head Fee #4H
API: 30-025-40888
Operator: COG Operating LLC

Flat Head Federal Com #15H
Operator: COG Operating LLC





COG Operating LLC

Lea County, NM

Flat Head Federal Com #15H

SHL: 940' FNL, 2440' FEL, Sec 14, T17S, R32E, Unit B

PP: 434' FNL, 2316.4' FEL, Sec 14, T17S, R32E, Unit B

BHL: 330' FNL, 2310' FEL, Sec 11, T17S, R32E, Unit B

Plan: Plan #1

Standard Planning Report

28 May, 2015



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SHL: 940' FNL, 2440' FEL, Sec 14, T17S, R32E, Unit B
Company:	COG Operating LLC	TVD Reference:	KB @ 4100.0usft (United 43)
Project:	Lea County, NM	MD Reference:	KB @ 4100.0usft (United 43)
Site:	Flat Head Federal Com #15H	North Reference:	Grid
Well:	SHL: 940' FNL, 2440' FEL, Sec 14, T17S, R32E, Unit B	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330' FNL, 2310' FEL, Sec 11, T17S, R32E, Unit B		
Design:	Plan #1		

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

Site						Flat Head Federal Com #15H					
Site Position:		Map		Northing:		669,493.40 usft		Latitude:		32° 50' 20.749 N	
From:		Map		Easting:		683,484.20 usft		Longitude:		103° 44' 9.380 W	
Position Uncertainty:		0.0 usft		Slot Radius:		13-3/16 "		Grid Convergence:		0.32 °	

Well	SHL: 940' FNL, 2440' FEL, Sec 14, T17S, R32E, Unit B					
Well Position	+N-S	0.0 usft	Northing:	669,493.40 usft	Latitude:	32° 50' 20.749 N
	+E-W	0.0 usft	Easting:	683,484.20 usft	Longitude:	103° 44' 9.380 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	4,088.0 usft

Wellbore	BHL: 330' FNL, 2310' FEL, Sec 11, T17S, R32E, Unit B				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/21/2015	7.22	60.63	48,569

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.0	0.0	0.0	0.91

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,379.1	0.00	0.00	5,379.1	0.0	0.0	0.00	0.00	0.00	0.00	
6,197.3	90.00	13.73	5,900.0	506.0	123.6	11.00	11.00	0.00	13.73	
6,687.9	90.00	359.01	5,900.0	992.2	177.9	3.00	0.00	-3.00	-90.00	
11,592.1	90.00	359.01	5,900.0	5,895.7	93.3	0.00	0.00	0.00	0.00	PBHL (FHFC #15H/O

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SHL: 940' FNL, 2440' FEL, Sec 14, T17S, R32E, Unit B
Company:	COG Operating LLC	TVD Reference:	KB @ 4100.0usft (United 43)
Project:	Lea County, NM	MD Reference:	KB @ 4100.0usft (United 43)
Site:	Flat Head Federal Com #15H	North Reference:	Grid
Well:	SHL: 940' FNL, 2440' FEL, Sec 14, T17S, R32E, Unit B	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330' FNL, 2310' FEL, Sec 11, T17S, R32E, Unit B		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00	

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SHL: 940' FNL, 2440' FEL, Sec 14, T17S, R32E, Unit B
Company:	COG Operating LLC	TVD Reference:	KB @ 4100.0usft (United 43)
Project:	Lea County, NM	MD Reference:	KB @ 4100.0usft (United 43)
Site:	Flat Head Federal Com #15H	North Reference:	Grid
Well:	SHL: 940' FNL, 2440' FEL, Sec 14, T17S, R32E, Unit B	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330' FNL, 2310' FEL, Sec 11, T17S, R32E, Unit B		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,379.1	0.00	0.00	5,379.1	0.0	0.0	0.0	0.00	0.00	0.00	
KOP - Start Build 11.00										
5,400.0	2.30	13.73	5,400.0	0.4	0.1	0.4	11.00	11.00	0.00	
5,450.0	7.80	13.73	5,449.8	4.7	1.1	4.7	11.00	11.00	0.00	
5,500.0	13.30	13.73	5,498.9	13.6	3.3	13.6	11.00	11.00	0.00	
5,550.0	18.80	13.73	5,547.0	27.0	6.6	27.1	11.00	11.00	0.00	
5,600.0	24.30	13.73	5,593.4	44.8	11.0	45.0	11.00	11.00	0.00	
5,650.0	29.80	13.73	5,638.0	66.9	16.3	67.2	11.00	11.00	0.00	
5,700.0	35.30	13.73	5,680.1	93.0	22.7	93.4	11.00	11.00	0.00	
5,750.0	40.80	13.73	5,719.4	123.0	30.0	123.4	11.00	11.00	0.00	
5,800.0	46.30	13.73	5,755.7	156.4	38.2	157.0	11.00	11.00	0.00	
5,850.0	51.80	13.73	5,788.4	193.1	47.2	193.8	11.00	11.00	0.00	
5,900.0	57.30	13.73	5,817.4	232.6	56.8	233.5	11.00	11.00	0.00	
5,950.0	62.80	13.73	5,842.4	274.7	67.1	275.7	11.00	11.00	0.00	
6,000.0	68.30	13.73	5,863.1	318.9	77.9	320.1	11.00	11.00	0.00	
6,050.0	73.80	13.73	5,879.3	364.8	89.1	366.2	11.00	11.00	0.00	
6,100.0	79.30	13.73	5,890.9	412.0	100.7	413.6	11.00	11.00	0.00	
6,150.0	84.80	13.73	5,897.8	460.1	112.4	461.8	11.00	11.00	0.00	
6,197.3	90.00	13.73	5,900.0	506.0	123.6	507.8	11.00	11.00	0.00	
EOC/TURN - Start DLS 3.00 TFO -90.00										
6,200.0	90.00	13.65	5,900.0	508.6	124.3	510.5	3.00	0.00	-3.00	
6,300.0	90.00	10.65	5,900.0	606.4	145.3	608.6	3.00	0.00	-3.00	
6,400.0	90.00	7.65	5,900.0	705.1	161.2	707.6	3.00	0.00	-3.00	
6,500.0	90.00	4.65	5,900.0	804.5	171.9	807.1	3.00	0.00	-3.00	
6,600.0	90.00	1.65	5,900.0	904.3	177.4	907.0	3.00	0.00	-3.00	
6,687.9	90.00	359.01	5,900.0	992.2	177.9	994.9	3.00	0.00	-3.00	
END TURN - Start 4904.2 hold at 6687.9 MD										
6,700.0	90.00	359.01	5,900.0	1,004.3	177.7	1,007.0	0.00	0.00	0.00	
6,800.0	90.00	359.01	5,900.0	1,104.3	176.0	1,107.0	0.00	0.00	0.00	
6,900.0	90.00	359.01	5,900.0	1,204.3	174.3	1,206.9	0.00	0.00	0.00	
7,000.0	90.00	359.01	5,900.0	1,304.3	172.5	1,306.9	0.00	0.00	0.00	
7,100.0	90.00	359.01	5,900.0	1,404.3	170.8	1,406.8	0.00	0.00	0.00	
7,200.0	90.00	359.01	5,900.0	1,504.3	169.1	1,506.7	0.00	0.00	0.00	
7,300.0	90.00	359.01	5,900.0	1,604.2	167.4	1,606.7	0.00	0.00	0.00	
7,400.0	90.00	359.01	5,900.0	1,704.2	165.6	1,706.6	0.00	0.00	0.00	
7,500.0	90.00	359.01	5,900.0	1,804.2	163.9	1,806.6	0.00	0.00	0.00	
7,600.0	90.00	359.01	5,900.0	1,904.2	162.2	1,906.5	0.00	0.00	0.00	
7,700.0	90.00	359.01	5,900.0	2,004.2	160.5	2,006.5	0.00	0.00	0.00	
7,800.0	90.00	359.01	5,900.0	2,104.2	158.7	2,106.4	0.00	0.00	0.00	
7,900.0	90.00	359.01	5,900.0	2,204.2	157.0	2,206.4	0.00	0.00	0.00	
8,000.0	90.00	359.01	5,900.0	2,304.1	155.3	2,306.3	0.00	0.00	0.00	
8,100.0	90.00	359.01	5,900.0	2,404.1	153.6	2,406.3	0.00	0.00	0.00	
8,200.0	90.00	359.01	5,900.0	2,504.1	151.8	2,506.2	0.00	0.00	0.00	
8,300.0	90.00	359.01	5,900.0	2,604.1	150.1	2,606.1	0.00	0.00	0.00	
8,400.0	90.00	359.01	5,900.0	2,704.1	148.4	2,706.1	0.00	0.00	0.00	
8,500.0	90.00	359.01	5,900.0	2,804.1	146.7	2,806.0	0.00	0.00	0.00	
8,600.0	90.00	359.01	5,900.0	2,904.1	144.9	2,906.0	0.00	0.00	0.00	
8,700.0	90.00	359.01	5,900.0	3,004.0	143.2	3,005.9	0.00	0.00	0.00	

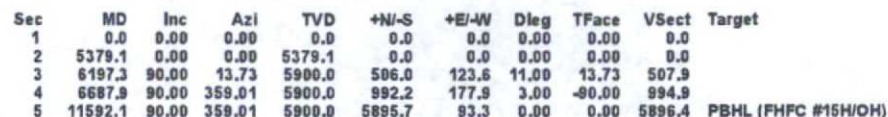
Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SHL: 940' FNL, 2440' FEL, Sec 14, T17S, R32E, Unit B
Company:	COG Operating LLC	TVD Reference:	KB @ 4100.0usft (United 43)
Project:	Lea County, NM	MD Reference:	KB @ 4100.0usft (United 43)
Site:	Flat Head Federal Com #15H	North Reference:	Grid
Well:	SHL: 940' FNL, 2440' FEL, Sec 14, T17S, R32E, Unit B	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330' FNL, 2310' FEL, Sec 11, T17S, R32E, Unit B		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,800.0	90.00	359.01	5,900.0	3,104.0	141.5	3,105.9	0.00	0.00	0.00	
8,900.0	90.00	359.01	5,900.0	3,204.0	139.7	3,205.8	0.00	0.00	0.00	
9,000.0	90.00	359.01	5,900.0	3,304.0	138.0	3,305.8	0.00	0.00	0.00	
9,100.0	90.00	359.01	5,900.0	3,404.0	136.3	3,405.7	0.00	0.00	0.00	
9,200.0	90.00	359.01	5,900.0	3,504.0	134.6	3,505.7	0.00	0.00	0.00	
9,300.0	90.00	359.01	5,900.0	3,603.9	132.8	3,605.6	0.00	0.00	0.00	
9,400.0	90.00	359.01	5,900.0	3,703.9	131.1	3,705.5	0.00	0.00	0.00	
9,500.0	90.00	359.01	5,900.0	3,803.9	129.4	3,805.5	0.00	0.00	0.00	
9,600.0	90.00	359.01	5,900.0	3,903.9	127.7	3,905.4	0.00	0.00	0.00	
9,700.0	90.00	359.01	5,900.0	4,003.9	125.9	4,005.4	0.00	0.00	0.00	
9,800.0	90.00	359.01	5,900.0	4,103.9	124.2	4,105.3	0.00	0.00	0.00	
9,900.0	90.00	359.01	5,900.0	4,203.9	122.5	4,205.3	0.00	0.00	0.00	
10,000.0	90.00	359.01	5,900.0	4,303.8	120.8	4,305.2	0.00	0.00	0.00	
10,100.0	90.00	359.01	5,900.0	4,403.8	119.0	4,405.2	0.00	0.00	0.00	
10,200.0	90.00	359.01	5,900.0	4,503.8	117.3	4,505.1	0.00	0.00	0.00	
10,300.0	90.00	359.01	5,900.0	4,603.8	115.6	4,605.1	0.00	0.00	0.00	
10,400.0	90.00	359.01	5,900.0	4,703.8	113.9	4,705.0	0.00	0.00	0.00	
10,500.0	90.00	359.01	5,900.0	4,803.8	112.1	4,804.9	0.00	0.00	0.00	
10,600.0	90.00	359.01	5,900.0	4,903.8	110.4	4,904.9	0.00	0.00	0.00	
10,700.0	90.00	359.01	5,900.0	5,003.7	108.7	5,004.8	0.00	0.00	0.00	
10,800.0	90.00	359.01	5,900.0	5,103.7	107.0	5,104.8	0.00	0.00	0.00	
10,900.0	90.00	359.01	5,900.0	5,203.7	105.2	5,204.7	0.00	0.00	0.00	
11,000.0	90.00	359.01	5,900.0	5,303.7	103.5	5,304.7	0.00	0.00	0.00	
11,100.0	90.00	359.01	5,900.0	5,403.7	101.8	5,404.6	0.00	0.00	0.00	
11,200.0	90.00	359.01	5,900.0	5,503.7	100.1	5,504.6	0.00	0.00	0.00	
11,300.0	90.00	359.01	5,900.0	5,603.6	98.3	5,604.5	0.00	0.00	0.00	
11,400.0	90.00	359.01	5,900.0	5,703.6	96.6	5,704.4	0.00	0.00	0.00	
11,500.0	90.00	359.01	5,900.0	5,803.6	94.9	5,804.4	0.00	0.00	0.00	
11,592.1	90.00	359.01	5,900.0	5,895.7	93.3	5,896.4	0.00	0.00	0.00	
TD at 11592.1										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N-S (usft)	+E-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
EOC (FHFC #15H/OH P - plan hits target center - Point	0.00	0.00	5,900.0	506.0	123.6	669,999.41	683,607.83	32° 50' 25.749 N	103° 44' 7.898 W	
PBHL (FHFC #15H/OH) - plan hits target center - Point	0.00	0.00	5,900.0	5,895.7	93.3	675,389.10	683,577.50	32° 51' 19.081 N	103° 44' 7.896 W	

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SHL: 940' FNL, 2440' FEL, Sec 14, T17S, R32E, Unit B
Company:	COG Operating LLC	TVD Reference:	KB @ 4100.0usft (United 43)
Project:	Lea County, NM	MD Reference:	KB @ 4100.0usft (United 43)
Site:	Flat Head Federal Com #15H	North Reference:	Grid
Well:	SHL: 940' FNL, 2440' FEL, Sec 14, T17S, R32E, Unit B	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330' FNL, 2310' FEL, Sec 11, T17S, R32E, Unit B		
Design:	Plan #1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
5,379.1	5,379.1	0.0	0.0	KOP - Start Build 11.00
6,197.3	5,900.0	506.0	123.6	EOC/TURN - Start DLS 3.00 TFO -90.00
6,687.9	5,900.0	992.2	177.9	END TURN - Start 4904.2 hold at 6687.9 MD
11,592.1	5,900.0	5,895.7	93.3	TD at 11592.1



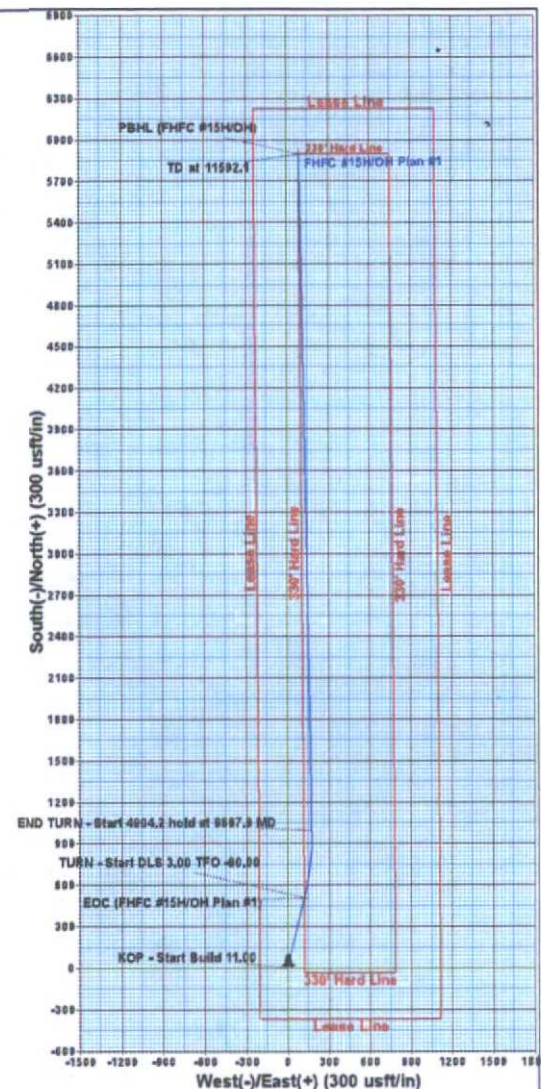
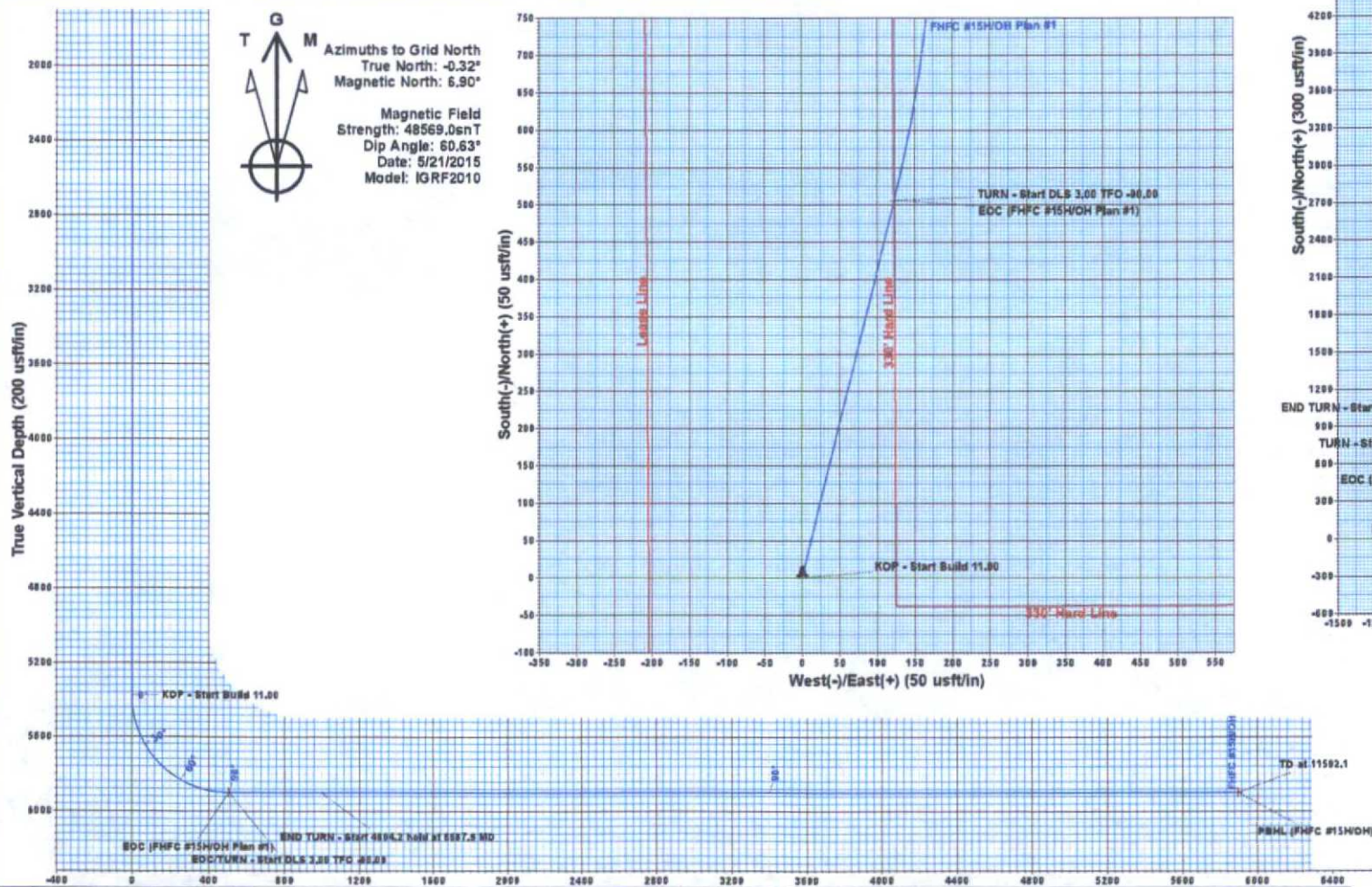
Ground Elevation:: 4088.0
RKB Elevation: KB @ 4100.0usft (United 43)
Rig Name: United 43

COG Operating LLC
Project: Lea County, NM
e: Flat Head Federal Corn #15H

Well: SHL: 940' FNL, 2440' FEL, Sec 14, T17S, R32E, Unit B
Wellbore: BHL: 330' FNL, 2310' FEL, Sec 11, T17S, R32E, Unit B

Plan: Plan #1 (SHL: 940' FNL, 2440' FEL, Sec 14, T17S, R32E, Unit B/BHL: 330' FNL, 2310' FEL, Sec 11, T17S, R32E, Unit B)

Northing	Easting	Latitude	Longitude
669493.40	683484.20	32° 50' 20.749 N	103° 44' 9.380 W



Vertical Section at 0.91" (200 usft/in)

Terra Directional Services LLC
322 Spring Hill Drive, Suite A300, Spring, Tx 77386
Phone: 432-425-7532

PROJECT DETAILS: Lea County, NM
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid