

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

Lease Serial No.
NMLC028784B

1a. Type of Well ☒ Oil Well ☐ Gas Well ☐ Dry ☐ Other			6. If Indian, Allottee or Tribe Name		
b. Type of Completion ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr. Other _____			7. Unit or CA Agreement Name and No. NMNM88525X		
2. Name of Operator COG OPERATING LLC			Contact: KANICIA CASTILLO E-Mail: kcastillo@concho.com		
3. Address 600 W ILLINOIS AVENUE MIDLAND, TX 79701			3a. Phone No. (include area code) Ph: 432-685-4332		
4. Location of Well (Report location clearly and in accordance with Federal requirements)* At surface NENE 487FNL 342FEL 32.825954 N Lat, 104.037971 W Lon At top prod interval reported below Lot A 369FNL 330FEL At total depth Lot D 344FNL 30FWL			8. Lease Name and Well No. BURCH KEELY UNIT 946H		
14. Date Spudded 05/15/2017			15. Date T.D. Reached 05/25/2017		
16. Date Completed ☐ D & A ☒ Ready to Prod. 09/08/2017			9. API Well No. 30-015-44100-00-S1		
18. Total Depth: MD 9885 TVD 4891			19. Plug Back T.D.: MD 9806 TVD 4891		
20. Depth Bridge Plug Set: MD TVD			10. Field and Pool, or Exploratory BURCH KEELY-GLORIETA-UPPER YES		
21. Type Electric & Other Mechanical Logs Run (Submit copy of each) CN			11. Sec., T., R., M., or Block and Survey or Area Sec 23 T17S R29E Mer NMP		
22. Was well cored? ☒ No ☐ Yes (Submit analysis) Was DST run? ☒ No ☐ Yes (Submit analysis) Directional Survey? ☐ No ☒ Yes (Submit analysis)			12. County or Parish EDDY		
23. Casing and Liner Record (Report all strings set in well)			13. State NM		
17. Elevations (DF, KB, RT, GL)* 3602 GL					

Hole Size	Size/Grade	Wt. (#/ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sk. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
17.500	13.375 J55	54.5	0	368		400		0	
12.250	9.625 J55	40.0	0	1020		475		0	
8.750	7.000 L80	29.0	0	4296				0	
8.750	5.500 L80	17.0	4296	9875		2150		0	

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2.875	5422							

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) YESO	5026	9786	5026 TO 9786	0.430	1080	OPEN
B)						
C)						
D)						

Depth Interval	Amount and Type of Material
5026 TO 9786	ACIDIZE W/ 118,944 15% ACID, FRAC W/ 345,030 GALS TREATED WATER, 5,324,970 GALS SLICK WATER,

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
09/08/2017	09/12/2017	24	→	419.0	369.0	1594.0	40.4	0.60	ELECTRIC PUMP SUB-SURFACE
Choke Size	Tbg. Press. Flwg. SI	Csg. Press. 70.0	24 Hr. Rate →	Oil BBL 419	Gas MCF 369	Water BBL 1594	Gas:Oil Ratio 881	Well Status	
								POW	

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 reverse side)

ELECTRONIC SUBMISSION #393358 VERIFIED BY THE BLM WELL INFORMATION SYSTEM

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

Reclamation Due by mar 8th, 2018

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. Flwg. 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. Flwg. 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.)
SOLD

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.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top
					Meas. Depth
TANSILL	902		DOLOMITE	TANSILL	902
QUEEN	1911		SANDSTONE	QUEEN	1911
GRAYBURG	2304		DOLOMITE & ANHYDRITE	GRAYBURG	2304
SAN ANDRES	2609		DOLOMITE & ANHYDRITE	SAN ANDRES	2609
PADDOCK	4168		DOLOMITE	PADDOCK	4168

32. Additional remarks (include plugging procedure):

Logs will be submitted in WIS.
Logs will be mailed to the OCD.

Casing tests:

5/17/17 Test 13-3/8csg to 1900# for 30mins, good test.
5/18/17 Test 12-1/4csg to 1500# for 30mins, good test.

33. Circle enclosed attachments:

- | | | | |
|---|--------------------|---------------|-----------------------|
| 1. Electrical/Mechanical Logs (1 full set req'd.) | 2. Geologic Report | 3. DST Report | 4. Directional Survey |
| 5. Sundry Notice for plugging and cement verification | 6. Core Analysis | 7. Other: | |

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

Electronic Submission #393358 Verified by the BLM Well Information System.

For COG OPERATING LLC, sent to the Carlsbad

Committed to AFMSS for processing by DUNCAN WHITLOCK on 11/03/2017 (18DW0017SE)

Name (please print) KANICIA CASTILLO

Title PREPARER

Signature _____ (Electronic Submission)

Date 10/27/2017

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 to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ****

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

MAR 12 2018
RECEIVED
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-015-44100	2 Pool Code 97918	3 Pool Name Burch Keely; Glorieta-Upper Yeso
4 Property Code 308086	5 Property Name BURCH KEELY UNIT	
7 OGRID NO. 229137	8 Operator Name COG OPERATING, LLC	6 Well Number 946H
		9 Elevation 3602'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
A	23	17S	29E		487	NORTH	342	EAST	EDDY

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	23	17S	29E		344	NORTH	30	WEST	EDDY

12 Dedicated Acres 160	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.

16 344' 330' 30' N 88°13'37" W (GRID) 4,934.96' (HORIZ.) 342' 487' 330' 330'

DETAIL "A"

3607.3' 3606.0' 3600.5' 3601.8'

S.L. SEE DETAIL "A"

CORNER DATA
NAD 83 GRID - NM EAST
A: FND USGLO BC 1914
N 659544.7 - E 627143.8
B: FND USGLO BC 1914
N 662184.5 - E 627134.6
C: FND USGLO BC 1914
N 664824.0 - E 627124.4
D: FND 1/2" REBAR
N 664826.4 - E 629765.3
E: FND 1" STEEL PIPE
N 664828.6 - E 632407.9
F: FND 3/4" IRON PIPE
N 662189.9 - E 632413.4
G: FND 2" GALVANIZED PIPE
N 659552.3 - E 632418.3

GEODETIC DATA
NAD 83 GRID - NM EAST
SURFACE LOCATION
N: 664341.4 - E: 632067.0
LAT: 32.82595338° N
LONG: 104.03796856° W
BOTTOM HOLE
N: 664494.1 - E: 627135.7
LAT: 32.82640981° N
LONG: 104.05402042° W

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.

10/27/17

Signature Kanicia Castillo
Printed Name
kcastillo@concho.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.

5/6/2013

Date of Survey
Signature and Seal of Professional Surveyor
19680
Certificate Number
3/23/17 BH CHANGE



CONCHO

NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 12 2018

RECEIVED

COG Operating LLC

Eddy County, NM (NAD-27 2015)

Burch Keely Unit #944H

API #: 30-015-44079

SHL: 1035' FSL, 149' FEL, Sec 13, T17S, R29E, Unit P

PP: 964' FSL, 330' FWL, Sec 18, T17S, R30E, Unit M

BHL: 967' FSL, 232' FEL, Sec 18, T17S, R30E, Unit P

Design: BHL: 970' FSL, 220' FEL, Sec 18, T17S, R30E, Unit P

Standard Survey Report

01 May, 2017





TDS
Survey Report



Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Site: Burch Keely Unit #944H
Well: SHL: 1035' FSL, 149' FEL, Sec 13, T17S, R29E, Unit P
Wellbore: BHL: 970' FSL, 220' FEL, Sec 18, T17S, R30E, Unit P
Design: BHL: 970' FSL, 220' FEL, Sec 18, T17S, R30E, Unit P
Local Co-ordinate Reference: Well SHL, 1035' FSL, 149' FEL, Sec 13, T17S, R29E, Unit P
TVD Reference: KB @ 3649.00usft (Silver Oak 3)
MD Reference: KB @ 3649.00usft (Silver Oak 3)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project	Eddy County, NM (NAD-27 2015)		
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	Burch Keely Unit #944H		
Site Position:		Northings:	685,811.50 usft
From:	Map	Easting:	598,356.50 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in
		Latitude:	32° 49' 48.033 N
		Longitude:	104° 1' 10.714 W
		Grid Convergence:	0.17 °

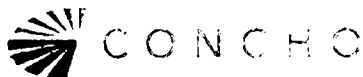
Well	SHL: 1035' FSL, 149' FEL, Sec 13, T17S, R29E, Unit P		
Well Position	+N/-S	0.00 usft	Northings:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 49' 48.033 N
		Longitude:	104° 1' 10.714 W
		Ground Level:	3,831.00 usft

Wellbore	BHL: 970' FSL, 220' FEL, Sec 18, T17S, R30E, Unit P		
Magnetics	Model Name	Sample Date	Declination
	IGRF2015	4/10/2017	7.23
		Dip Angle	60.55
		Field Strength	48,267
		(nT)	

Design	BHL: 970' FSL, 220' FEL, Sec 18, T17S, R30E, Unit P		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
		Direction	90.52
		(°)	

Survey Program	Date 5/1/2017		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
25.00	1,086.00	VES Gyro #1 (BHL 970' FSL, 220' FEL, S	VES-ISCWSA-GYRO-3
1,133.00	9,940.00	TDS MWD #2 (BHL 970' FSL, 220' FEL, S	MWD
			Description
			Biaxial Semi-Cont. Gyro
			MWD - Standard

Survey									
Measure 1	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25.00	0.17	61.75	25.00	0.02	0.03	0.03	0.68	0.68	0.00
50.00	0.18	333.60	50.00	0.07	0.05	0.05	0.97	0.04	-352.80
75.00	0.16	326.10	75.00	0.13	0.01	0.01	0.12	-0.08	-30.00
100.00	0.34	323.53	100.00	0.22	-0.05	-0.05	0.72	0.72	-10.28
125.00	0.46	314.58	125.00	0.35	-0.17	-0.17	0.54	0.48	-35.80
150.00	0.33	329.18	150.00	0.49	-0.28	-0.28	0.65	-0.52	58.32



TDS Survey Report



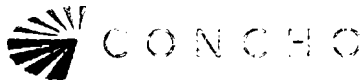
Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Site: Burch Keely Unit #944H
Well: SHL: 1035' FSL, 149' FEL, Sec 13, T17S, R29E, Unit P
Wellbore: BHL: 970' FSL, 220' FEL, Sec 18, T17S, R30E, Unit P
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MD Reference: KB @ 3649.00usft (Silver Oak 3)
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)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
175.00	0.27	337.58	175.00	0.60	-0.34	-0.34	0.30	-0.24	33.68
200.00	0.21	17.36	200.00	0.70	-0.34	-0.35	0.69	-0.24	159.12
225.00	0.22	20.00	225.00	0.79	-0.31	-0.32	0.06	0.04	10.56
250.00	0.29	343.03	250.00	0.89	-0.32	-0.32	0.70	0.28	-147.88
275.00	0.38	314.07	275.00	1.01	-0.39	-0.40	0.76	0.36	-115.84
300.00	0.29	298.15	300.00	1.10	-0.51	-0.52	0.51	-0.36	-63.88
325.00	0.29	280.32	325.00	1.14	-0.63	-0.64	0.36	0.00	-71.32
350.00	0.35	255.61	350.00	1.13	-0.76	-0.77	0.60	0.24	-88.84
375.00	0.46	227.25	375.00	1.05	-0.91	-0.92	0.90	0.44	-113.44
400.00	0.39	202.00	399.99	0.90	-1.02	-1.03	0.79	-0.28	-101.00
425.00	0.33	178.44	424.99	0.75	-1.05	-1.05	0.63	-0.24	-84.24
450.00	0.33	187.39	449.99	0.61	-1.05	-1.08	0.21	0.00	35.80
475.00	0.32	162.99	474.99	0.47	-1.04	-1.05	0.55	-0.04	-87.80
500.00	0.33	149.19	499.99	0.34	-0.99	-0.99	0.31	0.04	-55.20
525.00	0.36	131.36	524.99	0.22	-0.89	-0.89	0.44	0.12	-71.32
550.00	0.28	101.14	549.99	0.18	-0.77	-0.77	0.74	-0.32	-120.88
575.00	0.46	87.88	574.99	0.15	-0.61	-0.61	0.79	0.72	-53.84
600.00	0.52	80.01	599.99	0.18	-0.40	-0.40	0.36	0.24	-30.68
625.00	0.58	60.00	624.99	0.26	-0.18	-0.18	0.80	0.24	-80.04
650.00	0.73	57.78	649.99	0.41	0.07	0.06	0.61	0.60	-8.86
675.00	0.94	58.91	674.99	0.81	0.37	0.37	0.84	0.84	-3.40
700.00	1.00	58.54	699.98	0.83	0.73	0.72	0.28	0.24	6.52
725.00	1.21	60.44	724.98	1.07	1.15	1.14	0.85	0.84	7.80
750.00	1.40	62.14	749.97	1.35	1.65	1.63	0.78	0.76	8.80
775.00	1.46	60.05	774.96	1.65	2.19	2.18	0.32	0.24	-8.36
800.00	1.58	58.79	799.95	1.99	2.76	2.74	0.50	0.48	-5.04
825.00	1.81	54.40	824.94	2.37	3.34	3.32	0.50	0.12	-17.56
850.00	1.73	53.13	849.93	2.80	3.93	3.90	0.50	0.48	-5.08
875.00	1.67	51.61	874.92	3.25	4.52	4.49	0.30	-0.24	-6.08
900.00	1.70	50.49	899.91	3.72	5.09	5.06	0.18	0.12	-4.48
925.00	1.70	57.83	924.90	4.15	5.69	5.65	0.87	0.00	29.36
950.00	1.53	61.98	949.89	4.50	6.30	6.26	0.82	-0.68	16.60
975.00	1.36	68.73	974.88	4.77	6.67	6.63	0.96	-0.68	27.00
1,000.00	1.32	78.07	999.88	4.93	7.43	7.38	0.98	-0.16	41.36
1,025.00	1.23	88.95	1,024.87	4.99	7.98	7.93	0.95	-0.36	39.52
1,050.00	1.00	87.51	1,049.87	5.00	8.47	8.42	0.83	-0.92	-5.76
1,075.00	1.04	84.24	1,074.86	5.04	8.91	8.86	0.28	0.16	-13.08
1,088.00	0.99	82.27	1,085.86	5.06	9.10	9.08	0.55	-0.45	-17.91
Tie-In to VES Gyro									
1,133.00	1.20	71.80	1,132.85	5.27	9.87	9.92	0.82	0.45	-22.70

First TDS MWD Survey



TDS
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well SHL: 1035' FSL, 148' FEL, Sec 13, T17S, R29E, Unit P
Project:	Eddy County, NM (NAD-27 2015)	TVD Reference:	KB @ 3849.00usft (Silver Oak 3)
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Well:	SHL: 1035' FSL, 148' FEL, Sec 13, T17S, R29E, Unit P	North Reference:	Grid
Wellbore:	BHL 970' FSL, 220' FEL, Sec 18, T17S, R30E, Unit P	Survey Calculation Method:	Minimum Curvature
Design:	BHL 970' FSL, 220' FEL, Sec 18, T17S, R30E, Unit P	Database:	EDM 5000.1 Single User Db

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)
1,227.00	1.10	278.90	1,226.84	5.72	10.01	9.96	2.38	-0.11	-162.45
1,322.00	3.90	267.80	1,321.74	5.74	5.88	5.83	2.98	2.95	-11.88
1,417.00	4.60	270.40	1,416.48	5.84	-1.15	-1.20	0.76	0.74	2.74
1,511.00	4.60	272.90	1,510.18	5.86	-8.68	-8.74	0.21	0.00	2.66
1,608.00	4.40	247.40	1,604.90	4.65	-15.86	-15.90	2.10	-0.21	-26.84
1,701.00	4.50	242.40	1,699.61	1.52	-22.52	-22.54	0.42	0.11	-5.28
1,798.00	4.40	242.10	1,794.32	-1.91	-29.05	-29.03	0.11	-0.11	-0.32
1,890.00	4.10	241.20	1,888.07	-5.22	-35.18	-35.13	0.33	-0.32	-0.96
1,984.00	3.80	243.00	1,981.84	-8.25	-40.90	-40.82	0.35	-0.32	1.91
2,079.00	3.70	241.00	2,078.64	-11.17	-46.38	-46.28	0.17	-0.11	-2.11
2,173.00	3.80	244.20	2,170.45	-13.92	-51.89	-51.57	0.24	-0.11	3.40
2,268.00	3.30	244.50	2,265.28	-16.40	-56.85	-56.70	0.32	-0.32	0.32
2,363.00	3.20	248.00	2,360.12	-18.57	-61.77	-61.60	0.23	-0.11	3.66
2,457.00	3.10	247.90	2,453.98	-20.50	-66.56	-66.37	0.11	-0.11	-0.11
2,552.00	4.90	252.50	2,548.75	-22.69	-72.81	-72.60	1.92	1.89	4.84
2,647.00	5.80	258.20	2,643.35	-25.02	-81.18	-80.95	0.82	0.74	3.89
2,741.00	5.80	257.70	2,736.88	-27.12	-80.28	-80.03	0.27	0.21	1.80
2,836.00	5.90	257.50	2,831.39	-29.20	-89.73	-89.46	0.11	0.11	-0.21
2,931.00	6.20	260.20	2,925.86	-31.13	-109.56	-109.27	0.44	0.32	2.84
3,025.00	5.80	254.20	3,019.34	-33.29	-119.13	-118.82	0.79	-0.43	-6.38
3,120.00	4.70	245.20	3,113.95	-38.23	-127.28	-126.95	1.44	-1.16	-9.47
3,215.00	4.70	244.60	3,208.63	-39.53	-134.33	-133.97	0.05	0.00	-0.63
3,309.00	4.70	247.30	3,302.31	-42.67	-141.36	-140.97	0.24	0.00	2.87
3,404.00	4.80	252.50	3,398.98	-45.37	-148.74	-148.32	0.47	0.11	5.47
3,498.00	4.80	254.80	3,490.66	-47.58	-156.29	-155.85	0.20	0.00	2.45
3,593.00	4.60	244.40	3,585.34	-50.27	-163.56	-163.10	0.92	-0.21	-10.95
3,688.00	4.80	242.90	3,680.02	-53.73	-170.53	-170.04	0.25	0.21	-1.58
3,783.00	5.00	245.20	3,774.67	-57.27	-177.83	-177.30	0.30	0.21	2.42
3,878.00	3.90	235.00	3,869.38	-60.86	-184.24	-183.68	1.42	-1.16	-10.74
3,972.00	4.10	234.10	3,963.16	-64.67	-189.58	-188.98	0.22	0.21	-0.96
4,067.00	2.20	214.80	4,058.01	-68.15	-193.37	-192.74	2.26	-2.00	-20.32
4,162.00	2.20	186.70	4,152.85	-71.43	-193.99	-193.33	1.89	0.00	-50.63
4,183.00	2.10	162.70	4,183.93	-72.55	-193.66	-193.02	0.58	-0.32	-12.90
4,225.00	1.60	151.90	4,215.91	-73.50	-193.30	-192.62	1.90	-1.56	-33.75
4,258.00	2.20	108.10	4,246.89	-74.05	-192.52	-191.84	5.09	1.94	-147.74
4,288.00	4.50	105.90	4,278.64	-74.58	-190.73	-190.04	7.19	7.19	-0.63
4,319.00	7.10	107.00	4,309.68	-75.46	-187.72	-187.03	8.39	8.39	3.55
4,351.00	10.00	98.50	4,341.32	-76.45	-183.08	-182.38	9.86	9.06	-28.58
4,382.00	13.30	90.90	4,371.68	-78.90	-178.85	-178.15	11.72	10.65	-24.52
4,414.00	17.10	86.70	4,402.55	-76.69	-168.47	-167.77	12.36	11.88	-13.13
4,445.00	21.10	85.80	4,431.84	-76.02	-158.35	-157.66	12.94	12.90	-2.90



TDS Survey Report

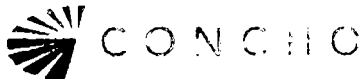


Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Site: Burch Keely Unit #944H
Well: SHL: 1035' FSL, 149' FEL, Sec 13, T17S, R29E, Unit P
Wellbore: BHL: 970' FSL, 220' FEL, Sec 18, T17S, R30E, Unit P
Design: BHL: 970' FSL, 220' FEL, Sec 18, T17S, R30E, Unit P

Local Co-ordinate Reference: Well SHL: 1035' FSL, 149' FEL, Sec 13, T17S, R29E, Unit P
TVD Reference: KB @ 3649.00usf (Silver Oak 3)
MD Reference: KB @ 3649.00usf (Silver Oak 3)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey

Measured Depth (usf)	Inclination (°)	Azimuth (°)	Vertical Depth (usf)	+N/-S (usf)	+E/-W (usf)	Vertical Section (usf)	Dogleg Rate (°/100usf)	Build Rate (°/100usf)	Turn Rate (°/100usf)
4,477.00	24.90	85.70	4,461.29	-75.09	-145.89	-145.20	11.88	11.88	-0.31
4,509.00	28.00	86.00	4,489.84	-74.08	-131.67	-131.00	9.70	9.89	0.94
4,540.00	30.30	86.50	4,517.01	-73.07	-116.61	-115.94	7.46	7.42	1.61
4,572.00	32.40	87.00	4,544.34	-72.13	-99.99	-99.33	6.61	6.56	1.56
4,603.00	34.90	87.70	4,570.14	-71.34	-82.83	-82.18	8.16	8.08	2.26
4,635.00	36.80	88.00	4,596.08	-70.81	-64.10	-63.45	6.40	5.94	4.06
4,666.00	40.30	89.90	4,620.32	-70.83	-44.78	-44.14	11.43	11.29	2.80
4,698.00	43.00	90.10	4,644.23	-70.83	-23.52	-22.87	8.45	8.44	0.63
4,730.00	43.80	89.90	4,667.48	-70.83	-1.53	-0.89	2.54	2.50	-0.63
4,761.00	44.10	89.90	4,689.79	-70.59	19.99	20.83	0.97	0.97	0.00
4,793.00	44.70	89.80	4,712.66	-70.53	42.37	43.01	1.89	1.88	-0.31
4,825.00	45.20	89.50	4,735.30	-70.39	64.98	65.62	1.70	1.56	-0.94
4,858.00	45.70	89.40	4,757.05	-70.18	87.07	87.71	1.83	1.61	-0.32
4,888.00	46.20	89.50	4,779.30	-69.96	110.07	110.70	1.58	1.56	0.31
4,919.00	47.40	89.70	4,800.52	-69.80	132.67	133.30	3.90	3.87	0.65
4,950.00	50.50	90.20	4,820.88	-69.79	156.04	156.67	10.07	10.00	1.61
4,982.00	53.70	90.80	4,840.53	-70.01	181.29	181.92	10.11	10.00	1.88
5,013.00	56.20	91.10	4,858.33	-70.43	206.66	207.29	8.10	8.06	0.97
5,045.00	59.10	90.60	4,875.46	-70.83	233.69	234.32	9.16	9.06	-1.56
5,076.00	61.40	89.90	4,890.84	-70.94	260.80	261.23	7.67	7.42	-2.26
5,108.00	64.50	89.20	4,905.39	-70.72	289.10	289.73	9.88	9.89	-2.19
5,140.00	68.30	88.10	4,918.20	-70.02	318.41	319.03	12.29	11.88	-3.44
5,171.00	72.10	89.00	4,928.70	-69.28	347.58	348.17	12.56	12.26	2.90
5,203.00	77.20	90.50	4,937.16	-69.16	378.40	379.02	16.57	15.94	4.69
5,234.00	82.80	90.00	4,942.60	-69.29	408.91	409.52	17.49	17.42	-1.61
5,266.00	88.90	90.00	4,945.53	-69.28	440.77	441.38	13.44	13.44	0.00
5,298.00	88.90	89.90	4,946.70	-69.28	472.75	473.36	6.26	6.25	-0.31
5,304.31	88.96	89.92	4,946.82	-69.25	479.06	479.67	0.98	0.91	0.30
As-Drilled PP									
5,397.00	89.80	90.20	4,947.82	-69.35	571.74	572.35	0.96	0.91	0.30
5,491.00	90.20	90.10	4,947.82	-69.60	665.74	666.34	0.44	0.43	-0.11
5,587.00	90.20	90.00	4,947.49	-69.68	761.74	762.34	0.10	0.00	-0.10
5,681.00	90.70	90.00	4,946.75	-69.68	855.74	856.33	0.53	0.53	0.00
5,776.00	91.10	88.90	4,945.26	-68.77	950.72	951.30	1.23	0.42	-1.16
5,871.00	91.60	88.00	4,943.02	-67.03	1,045.68	1,046.24	0.54	0.53	0.11
5,966.00	91.80	88.00	4,940.20	-65.37	1,140.62	1,141.17	0.21	0.21	0.00
6,060.00	91.90	88.20	4,937.17	-63.89	1,234.56	1,235.09	0.24	0.11	0.21
6,155.00	90.10	89.60	4,935.51	-62.90	1,329.53	1,330.05	1.94	-1.89	0.42
6,249.00	89.80	89.90	4,935.59	-62.49	1,423.53	1,424.04	0.45	-0.32	0.32
6,344.00	90.00	90.10	4,935.76	-62.49	1,518.53	1,519.04	0.30	0.21	0.21
6,439.00	90.10	90.60	4,935.67	-63.07	1,613.53	1,614.04	0.54	0.11	0.53



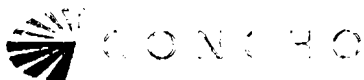
TDS
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well SHL: 1035' FSL, 148' FEL, Sec 13, T17S, R29E, Unit P
Project:	Eddy County, NM (NAD-27 2015)	TVD Reference:	KB @ 3849.00usft (Silver Oak 3)
Site:	Burch Keely Unit #944H	MD Reference:	KB @ 3849.00usft (Silver Oak 3)
Well:	SHL: 1035' FSL, 148' FEL, Sec 13, T17S, R29E, Unit P	North Reference:	Grid
Wellbore:	BHL: 970' FSL, 220' FEL, Sec 18, T17S, R30E, Unit P	Survey Calculation Method:	Minimum Curvature
Design:	BHL: 970' FSL, 220' FEL, Sec 18, T17S, R30E, Unit P	Database:	EDM 5000.1 Single User Db

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)
6,534.00	90.70	91.20	4,935.01	-64.58	1,708.52	1,709.03	0.89	0.63	0.63
6,628.00	90.50	89.40	4,934.02	-65.05	1,802.51	1,803.02	1.93	-0.21	-1.91
6,723.00	90.50	89.20	4,933.20	-63.89	1,897.50	1,898.00	0.21	0.00	-0.21
6,817.00	90.60	90.00	4,932.29	-63.24	1,991.49	1,991.98	0.86	0.11	0.85
6,912.00	91.10	89.40	4,930.88	-62.74	2,086.48	2,086.96	0.82	0.53	-0.63
7,006.00	91.60	89.70	4,928.67	-62.00	2,180.45	2,180.92	0.62	0.53	0.32
7,101.00	91.80	89.90	4,925.85	-61.67	2,275.40	2,275.87	0.30	0.21	0.21
7,195.00	92.00	90.30	4,922.73	-61.83	2,369.35	2,369.81	0.48	0.21	0.43
7,290.00	90.90	89.50	4,920.33	-61.67	2,464.32	2,464.78	1.43	-1.16	-0.84
7,385.00	91.40	89.60	4,918.42	-60.92	2,559.30	2,559.74	0.54	0.53	0.11
7,479.00	91.40	89.80	4,916.13	-60.43	2,653.27	2,653.71	0.21	0.00	0.21
7,574.00	91.60	89.90	4,913.84	-60.18	2,748.23	2,748.67	0.24	0.21	0.11
7,669.00	91.80	90.40	4,910.82	-60.43	2,843.19	2,843.62	0.57	0.21	0.53
7,764.00	92.30	90.70	4,907.42	-61.34	2,938.13	2,938.56	0.81	0.53	0.32
7,858.00	91.20	89.90	4,904.55	-61.83	3,032.08	3,032.51	1.45	-1.17	-0.85
7,953.00	90.10	89.00	4,903.48	-60.92	3,127.07	3,127.49	1.50	-1.16	-0.95
8,048.00	90.50	89.70	4,902.98	-59.84	3,222.06	3,222.47	0.85	0.42	0.74
8,142.00	90.50	89.80	4,902.16	-59.52	3,316.05	3,316.46	0.21	0.00	0.21
8,237.00	90.80	89.90	4,901.08	-59.35	3,411.05	3,411.44	0.32	0.32	0.00
8,332.00	91.20	90.10	4,899.42	-59.35	3,506.03	3,506.43	0.47	0.42	0.21
8,426.00	90.90	89.70	4,897.70	-58.37	3,600.01	3,600.39	1.52	-0.32	-1.49
8,521.00	91.00	89.70	4,896.12	-56.21	3,694.97	3,695.33	0.11	0.11	0.00
8,616.00	90.80	89.10	4,894.63	-54.39	3,789.94	3,790.28	0.47	-0.21	0.42
8,710.00	90.90	89.40	4,893.24	-53.16	3,883.92	3,884.25	0.34	0.11	0.32
8,804.00	91.40	89.50	4,891.35	-52.25	3,977.90	3,978.21	0.54	0.53	0.11
8,899.00	91.60	90.00	4,889.86	-51.84	4,072.87	4,073.17	0.57	0.21	0.53
8,993.00	91.70	90.60	4,888.16	-52.33	4,168.83	4,167.13	0.85	0.11	0.64
9,088.00	90.20	89.90	4,884.58	-52.75	4,261.81	4,262.11	1.74	-1.58	-0.74
9,182.00	90.60	90.00	4,883.93	-52.66	4,355.81	4,356.10	0.44	0.43	0.11
9,277.00	90.90	90.30	4,882.68	-52.91	4,450.80	4,451.09	0.45	0.32	0.32
9,371.00	91.20	90.60	4,880.86	-53.65	4,544.78	4,545.08	0.45	0.32	0.32
9,465.00	90.70	89.80	4,879.40	-53.98	4,638.76	4,639.06	1.00	-0.53	-0.85
9,559.00	90.80	90.20	4,878.17	-53.98	4,732.75	4,733.05	0.44	0.11	0.43
9,656.00	90.40	89.10	4,877.16	-53.39	4,829.75	4,830.03	1.21	-0.41	-1.13
9,750.00	90.70	89.10	4,876.25	-51.91	4,923.73	4,924.00	0.32	0.32	0.00
9,845.00	90.90	89.20	4,874.93	-50.50	5,018.71	5,018.98	0.24	0.21	0.11
Last TDS MWD Survey									
9,940.00	90.90	89.20	4,873.43	-49.17	5,113.69	5,113.93	0.00	0.00	0.00
Projection to Bit/TD									



TDS
Survey Report



Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Site: Burch Keely Unit #944H
Well: SHL: 1035' FSL 149' FEL Sec 13 T17S. R29E, Unit P
Wellbore: BHL: 970' FSL, 220' FEL, Sec 18, T17S, R30E, Unit P
Design: BHL: 970' FSL, 220' FEL, Sec 18, T17S, R30E, Unit P

Local Co-ordinate Reference: Well SHL 1035' FSL, 149' FEL, Sec 13, T17S, R29E, Unit P
TVD Reference: KB @ 3649.00usft (Silver Oak 3)
MD Reference: KB @ 3649.00usft (Silver Oak 3)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
1,086.00	1,085.86	5.06	9.10	Tie-In to VES Gyro
1,133.00	1,132.85	5.27	9.97	First TDS MWD Survey
5,304.31	4,946.62	-69.25	479.06	As-Drilled PP
8,645.00	4,874.93	-50.50	5,018.71	Last TDS MWD Survey
8,940.00	4,873.43	-48.17	5,113.69	Projection to Bit/TD

Checked By: _____ Approved By: _____ Date: _____



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

NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 12 2018

RECEIVED

May 1, 2017

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

RE: Burch Keely Unit 944H
1085' FSL & 149' FEL
Sec. 13, T17S, R29E
Eddy County, New Mexico

Dear Sir,

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

Very truly yours,

Chris Graham
Asst. Operations Manager

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 1st day of May, 2017.

Notary Public
Aug. 30, 2017

BURCH KEELY UNIT #944H

Date	Depth	Deviation	Direction	TVD
4/18/2017	176	2.90	0.00	0.00
4/20/2017	533	0.40	0.00	0.00
4/20/2017	993	1.10	0.00	0.00
4/21/2017	1133	1.20	1.20	0.00
4/21/2017	1227	1.10	278.90	0.00
4/21/2017	1417	4.60	270.40	0.00
4/21/2017	1511	4.60	272.40	0.00
4/21/2017	1606	4.40	247.40	0.00
4/21/2017	1701	4.50	242.40	0.00
4/21/2017	1796	4.40	242.10	0.00
4/21/2017	1890	4.10	241.20	0.00
4/21/2017	1984	3.80	243.00	0.00
4/21/2017	2079	3.70	244.00	0.00
4/21/2017	2173	3.60	244.20	0.00
4/22/2017	2268	3.30	244.50	0.00
4/22/2017	2363	3.20	248.00	0.00
4/22/2017	2457	3.10	247.90	0.00
4/22/2017	2552	4.90	252.50	0.00
4/22/2017	2647	5.60	256.20	0.00
4/22/2017	2741	5.80	257.70	0.00
4/22/2017	3120	4.70	245.20	0.00
4/22/2017	3215	4.70	244.60	0.00
4/22/2017	3309	4.70	247.30	0.00
4/22/2017	3404	4.80	252.50	0.00
4/22/2017	3498	4.80	254.80	0.00
4/22/2017	3593	4.60	244.40	0.00
4/22/2017	3688	4.80	242.90	0.00
4/22/2017	3783	5.00	245.20	0.00
4/23/2017	3878	3.90	235.00	0.00
4/23/2017	3972	4.10	234.10	0.00
4/23/2017	4067	2.20	214.80	0.00
4/23/2017	4162	2.20	166.70	0.00
4/23/2017	4193	2.10	162.70	0.00
4/23/2017	4225	1.60	151.90	0.00
4/23/2017	4382	13.30	90.90	0.00
4/23/2017	4414	17.10	86.70	0.00
4/23/2017	4445	21.10	85.80	0.00
4/23/2017	4477	24.90	85.70	0.00
4/23/2017	4509	28.00	86.00	0.00
4/23/2017	4540	30.30	86.50	0.00
4/23/2017	4572	32.40	87.00	0.00
4/23/2017	4603	34.90	87.70	0.00

Date	Depth	Deviation	Direction	TVD
4/23/2017	4635	36.80	89.00	0.00
4/23/2017	4666	40.30	89.90	0.00
4/23/2017	4698	43.00	90.10	0.00
4/23/2017	4730	45.80	89.90	0.00
4/23/2017	4761	44.10	89.90	0.00
4/23/2017	4793	44.70	89.80	0.00
4/23/2017	4825	45.20	89.15	0.00
4/23/2017	4856	45.10	89.40	0.00
4/24/2017	4919	47.40	89.70	0.00
4/24/2017	4950	50.50	90.20	0.00
4/24/2017	4982	53.70	90.80	0.00
4/24/2017	5013	56.20	91.10	0.00
4/24/2017	5045	59.10	90.60	0.00
4/24/2017	5076	61.40	89.90	0.00
4/24/2017	5140	68.30	88.10	0.00
4/24/2017	5171	72.10	89.00	0.00
4/24/2017	5203	77.20	90.50	0.00
4/24/2017	5234	82.60	90.00	0.00
4/24/2017	5266	86.90	90.00	0.00
4/24/2017	5298	88.90	89.90	0.00
4/25/2017	5397	89.80	90.20	0.00
4/25/2017	5491	90.20	90.10	0.00
4/25/2017	5587	90.20	90.00	0.00
4/25/2017	5681	90.70	90.00	0.00
4/25/2017	5776	91.10	88.90	0.00
4/25/2017	5966	91.80	89.20	0.00
4/25/2017	6060	91.90	89.20	0.00
4/25/2017	6155	90.10	89.60	0.00
4/25/2017	6249	89.80	89.90	0.00
4/25/2017	6344	90.00	90.10	0.00
4/26/2017	6439	90.40	90.60	0.00
4/26/2017	6534	90.70	91.20	0.00
4/26/2017	6628	90.50	89.40	0.00
4/26/2017	6723	90.20	89.20	0.00
4/26/2017	6817	90.60	90.00	0.00
4/26/2017	6912	91.10	89.40	0.00
4/26/2017	7006	91.60	89.70	0.00
4/26/2017	7101	91.80	89.90	0.00
4/26/2017	7195	92.00	90.30	0.00
4/26/2017	7290	90.90	89.50	0.00
4/26/2017	7385	91.40	89.60	0.00
4/27/2017	7574	91.60	89.90	4913.60
4/27/2017	7579	91.40	89.80	4916.10
4/27/2017	7669	91.80	90.40	4910.80
4/27/2017	7764	92.30	90.70	4907.40

Date	Depth	Deviation	Direction	TVD
4/27/2017	8048	90.50	89.70	4902.90
4/27/2017	8142	90.50	89.90	4902.10
4/27/2017	8237	90.80	89.90	4901.00
4/27/2017	8332	91.20	90.10	4899.40
4/27/2017	8426	90.90	88.70	4897.70
4/27/2017	8521	91.00	88.70	4896.10
4/28/2017	8616	90.80	89.10	4894.60
4/28/2017	8710	90.00	89.40	4893.20
4/28/2017	8804	91.40	89.50	4891.30
4/28/2017	8899	91.60	90.00	4888.80
4/28/2017	8993	91.70	90.60	4886.10
4/28/2017	9088	90.20	89.90	4884.50
4/28/2017	9277	90.90	90.30	4882.60
4/28/2017	9371	91.20	90.60	4880.90
4/28/2017	9465	90.70	89.80	4879.40
4/29/2017	9656	90.40	89.10	4877.10
4/29/2017	9750	90.70	89.10	4876.20
4/29/2017	9845	90.90	89.20	4874.90

EOF



April 25, 2017

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

Attn: Kanicia Castillo

RE: Burch Keely Unit No. 944H

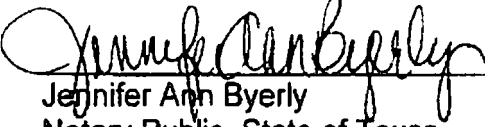
Please find enclosed a copy of the survey from 0' to 1086' ran on the above referenced well.

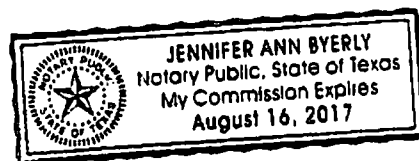
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 25th day of April, A.D., 2017, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas





Company: COG OPERATING
Lease/Well: BURCH KEELY UNIT No./944H

Rig Name: SILVER OAK 3
State/County: NEW MEXICO/EDDY
VS-Azi: 0.00 Degrees
Latitude: 32.83001, Longitude: -104.01964
Grid North = True North -0.17 degs (NAD 27)
Grid Correction Applied = -0.17 degs



Depth Reference : RKB=18 FEET

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: e-line gyro-de_01.ut
Minimum Curvature Method
Report Date/Time: 4/25/2017 / 08:31

VES Survey International
Midland, Texas
432-683-6444

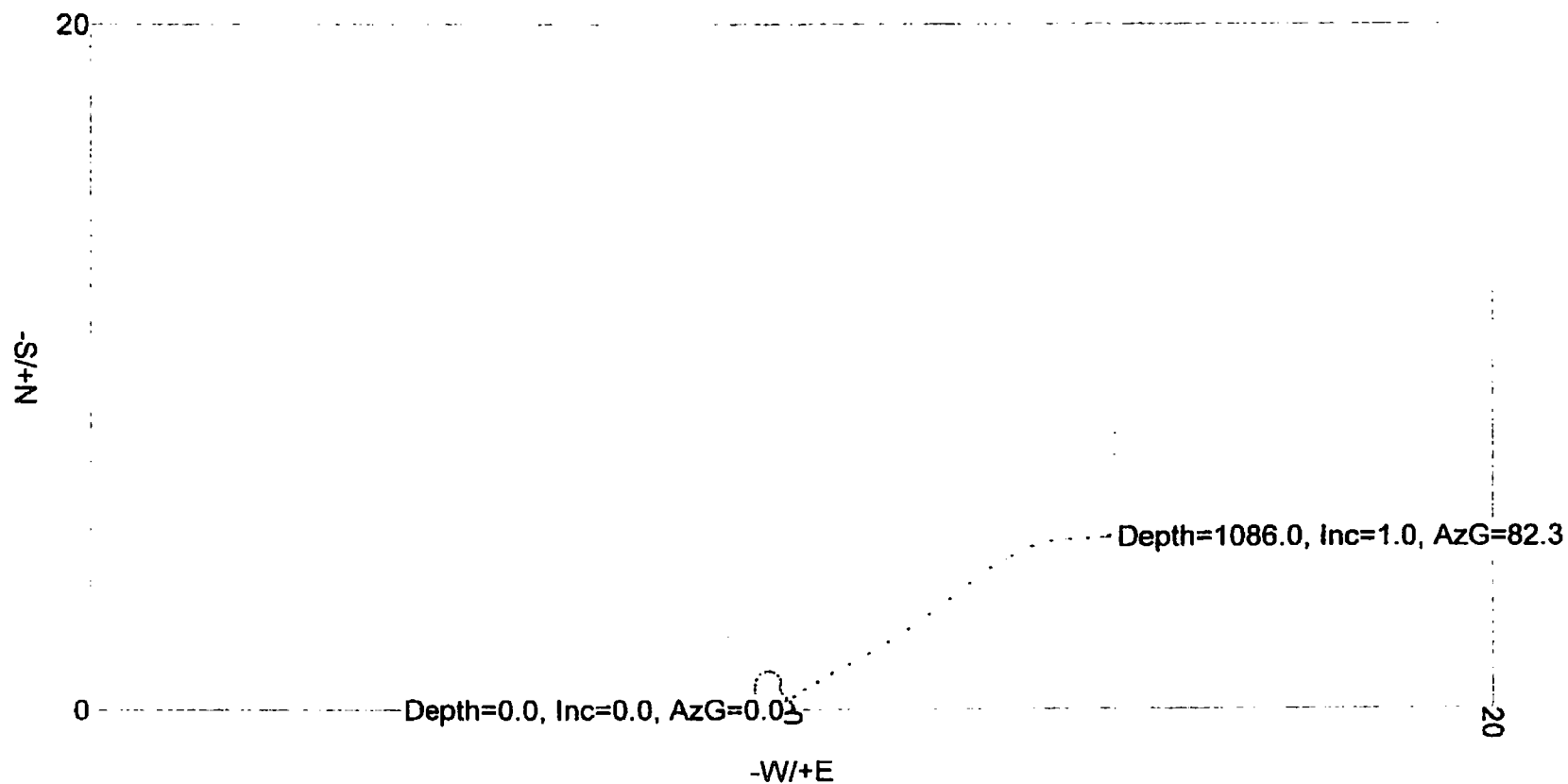
Surveyor: Michael Cook
Burch Keely Unit No. 944H / API 30-015-44079

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	----
25.00	0.17	61.75	25.00	0.02	0.03	0.02	0.04	61.75	0.69
50.00	0.18	333.60	50.00	0.07	0.05	0.07	0.09	34.27	0.98
75.00	0.16	326.10	75.00	0.14	0.01	0.14	0.14	4.66	0.12
100.00	0.34	323.53	100.00	0.23	-0.05	0.23	0.23	348.70	0.73
125.00	0.46	314.58	125.00	0.36	-0.17	0.36	0.39	334.59	0.61
150.00	0.33	329.16	150.00	0.49	-0.28	0.49	0.66	330.40	0.66
175.00	0.27	337.58	175.00	0.60	-0.34	0.60	0.69	330.89	0.28
200.00	0.21	17.36	200.00	0.70	-0.34	0.70	0.78	333.84	0.70
225.00	0.22	20.00	225.00	0.79	-0.31	0.79	0.85	338.30	0.05
250.00	0.29	343.03	250.00	0.90	-0.32	0.90	0.95	340.53	0.70
275.00	0.38	314.07	275.00	1.01	-0.39	1.01	1.09	338.74	0.75
300.00	0.29	298.15	300.00	1.10	-0.51	1.10	1.21	335.15	0.50
325.00	0.29	280.32	325.00	1.14	-0.63	1.14	1.31	331.18	0.36
350.00	0.36	255.61	350.00	1.14	-0.77	1.14	1.37	326.02	0.59
375.00	0.46	227.25	375.00	1.05	-0.91	1.05	1.39	318.94	0.91
400.00	0.39	202.00	399.99	0.90	-1.02	0.90	1.36	311.48	0.80

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
425.00	0.33	178.44	424.99	0.75	-1.05	0.75	1.29	305.55	0.63
450.00	0.33	187.39	449.99	0.61	-1.06	0.61	1.22	299.80	0.21
475.00	0.32	162.99	474.99	0.47	-1.05	0.47	1.14	294.04	0.55
500.00	0.33	149.19	499.99	0.34	-0.99	0.34	1.04	288.85	0.32
525.00	0.36	131.36	524.99	0.22	-0.89	0.22	0.92	284.08	0.44
550.00	0.28	101.14	549.99	0.16	-0.77	0.16	0.79	281.72	0.73
575.00	0.46	87.88	574.99	0.15	-0.62	0.15	0.63	283.98	0.81
600.00	0.52	80.01	599.99	0.18	-0.40	0.18	0.44	293.88	0.35
625.00	0.58	60.00	624.99	0.26	-0.18	0.26	0.32	324.75	0.79
650.00	0.73	57.76	649.99	0.41	0.06	0.41	0.41	8.34	0.82
675.00	0.94	56.91	674.99	0.60	0.37	0.60	0.71	31.24	0.86
700.00	1.00	58.54	699.98	0.83	0.72	0.83	1.10	41.14	0.27
725.00	1.21	60.44	724.98	1.07	1.14	1.07	1.57	46.72	0.82
750.00	1.40	62.14	749.97	1.35	1.64	1.35	2.12	50.60	0.78
775.00	1.46	60.05	774.96	1.65	2.18	1.65	2.74	52.97	0.35
800.00	1.58	58.79	799.95	1.99	2.76	1.99	3.40	54.23	0.49
825.00	1.61	54.40	824.94	2.37	3.34	2.37	4.09	54.63	0.50
850.00	1.73	53.13	849.93	2.80	3.92	2.80	4.82	54.49	0.53
875.00	1.67	51.81	874.92	3.25	4.51	3.25	5.58	54.21	0.32
900.00	1.70	50.49	899.91	3.71	5.08	3.71	6.30	53.84	0.17
925.00	1.70	57.83	924.90	4.15	5.88	4.15	7.04	53.88	0.87
950.00	1.53	61.98	949.89	4.50	6.29	4.50	7.74	54.41	0.83
975.00	1.36	68.73	974.88	4.77	6.86	4.77	8.36	55.22	0.98
1000.00	1.32	79.07	999.88	4.93	7.42	4.93	8.91	56.41	0.98
1025.00	1.23	88.95	1024.87	4.99	7.97	4.99	9.40	57.96	0.95
1050.00	1.00	87.51	1049.87	5.00	8.46	5.00	9.83	59.39	0.93
1075.00	1.04	84.24	1074.86	5.03	8.90	5.03	10.23	60.50	0.29
1086.00	0.99	82.27	1085.86	5.06	9.09	5.06	10.41	60.92	0.55



VES Survey International
Midland, Texas
432-563-5444
Surveyor: Michael Cook
Burch Keely Unit No. 944H / API 30-015-44079



V.E.S. Survey Date: 4/19/2017



I Michael Cook certify that I am employed by VES Survey International. That I did on the day(s) of 04/20/17 through 04/20/17 conduct or supervise the taking of a Rate Gyro survey from a depth of 0.00 feet to a depth of 1,086.00 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of COG Operating for the Burch Keely Unit Well # 944H API # 30-015-44079 in Eddy County / Parish New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by VES Survey International.

M Cook

Michael Cook
Service Technician
VES Survey International