

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

¹ Operator name and Address COG Operating 600 West Illinois Ave. Midland, TX 79701		² OGRID Number 229137
		³ Reason for Filing Code/ Effective Date NW/ 1/29/21
⁴ API Number 30-015-46813	⁵ Pool Name Dogie Draw; Purple Sage; Wolfcamp	
⁶ Pool Code 98220		
⁷ Property Code 323072	⁸ Property Name Hambone Federal Com	⁹ Well Number 702H

II. ¹⁰ Surface Location

UI or lot no. P	Section 8	Township 26-S	Range 29-E	Lot Idn	Feet from the 222	North/South Line South	Feet from the 1198	East/West line East	County Eddy
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¹¹ Bottom Hole Location

UL or lot no. 1	Section 5	Township 26-S	Range 29-E	Lot Idn	Feet from the 205	North/South line North	Feet from the 1287	East/West line East	County Eddy
¹² Lse Code F	¹³ Producing Method Code P		¹⁴ Gas Connection Date 1/29/21		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
371058	ETC Field Services 8111 Westchester Drive Suite 600 Dallas, Tx 75225	G
214984	Plains Marketing L.P. P.O. Box 4648 Houston, Tx 77002	O

IV. Well Completion Data

²¹ Spud Date 3/18/20	²² Ready Date 5/18/20	²³ TD 20046'	²⁴ PBTD 20004	²⁵ Perforations 10,040' – 19,807'	²⁶ DHC, MC
²⁷ Hole Size		²⁸ Casing & Tubing Size	²⁹ Depth Set		³⁰ Sacks Cement
17.5"		13.375"	357'		425
12.25"		10.75"	2898'		625
9.875"		7.625"	9171'		890
6.75"		5.5"	14947'		0
6.75"		5.5"	20031'		1330
Tubing		2.875"	9233		

V. Well Test Data

³¹ Date New Oil 1/29/21	³² Gas Delivery Date 1/29/21	³³ Test Date 1/29/21	³⁴ Test Length 24 hrs	³⁵ Tbg. Pressure 2000#	³⁶ Csg. Pressure 1825#
³⁷ Choke Size 6/64	³⁸ Oil 620	³⁹ Water 4640	⁴⁰ Gas 1964		⁴¹ Test Method
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:			OIL CONSERVATION DIVISION		
Printed name: Kayla Estrada			Approved by:		
Title: Regulatory Coordinator			Title:		
E-mail Address: kayla.l.estrada@conocophillips.com			Approval Date:		

Date: 2/14/23	Phone: 432-688-6837	
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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 RD., 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, New Mexico 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

API Number 30-015-46813	Pool Code 98220	Pool Name Purple Sage; Wolfcamp
Property Code 323072	Property Name HAMBONE FEDERAL COM	Well Number 702H
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 2914.0'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	8	26-S	29-E		222	SOUTH	1198	EAST	EDDY

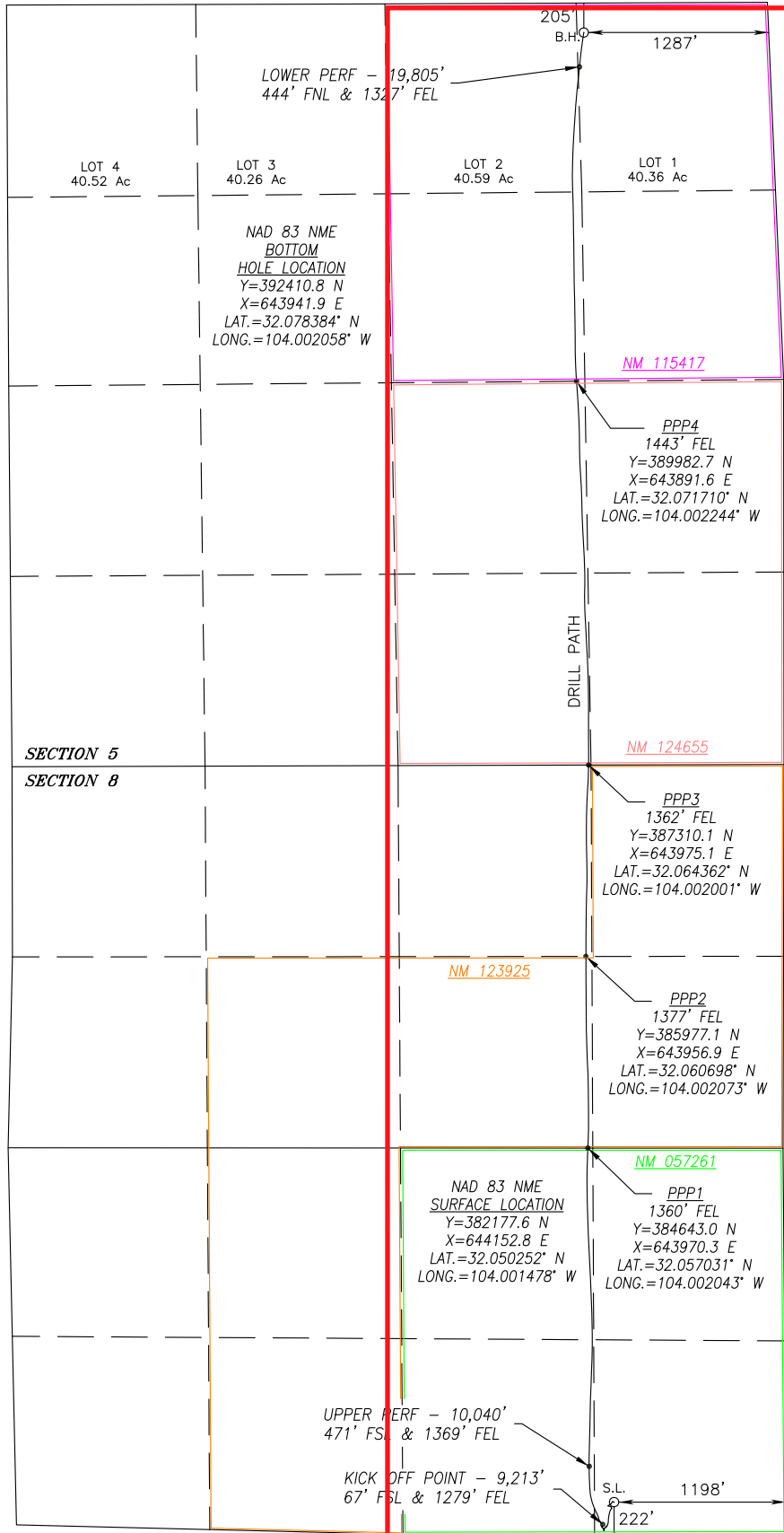
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1	5	26-S	29-E		205	NORTH	1287	EAST	EDDY
Dedicated Acres 640	Joint or Infill	Consolidation Code	Order No.						

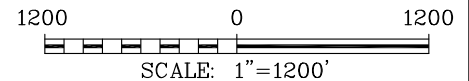
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

SEE PAGE 2

Property Code 323072	Property Name HAMBONE FEDERAL COM	Well Number 702H
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 2914.0'



SURFACE INFO AND BOREPATH SHOWN HEREON IS BASED ON DIRECTIONAL SURVEY REPORT PROVIDED BY COG OPERATING, LLC FOR THE HAMBONE FEDERAL COM #702H SUPPLIED TO HARCROW SURVEYING, LLC ON DECEMBER 4, 2020



OPERATOR CERTIFICATION

I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered

Kayla Estrada

9/18/23

Signature

Date

Kayla Estrada

9/18/23

Printed Name

kayla.l.estrada@conocophillips.com

E-mail Address

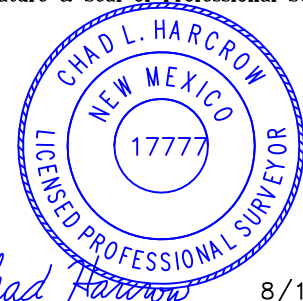
SURVEYOR CERTIFICATION

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.

JULY 13, 2019/MAY 19, 2020

Date of Survey/Date of Geographic Survey

Signature & Seal of Professional Surveyor



Chad Harcrow

8/11/23

Certificate No. CHAD HARCROW 17777

PAGE 2 OF 2

W.O. #23-644

DRAWN BY: WN

Intent ☐ As Drilled ☐

API # 30-015-46813		
Operator Name:	Property Name:	Well Number

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude				NAD

Is this well the defining well for the Horizontal Spacing Unit?

☐ yes

Is this well an infill well?

☐ no

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018



COG Operating LLC

Eddy County, NM (NAD27 NME)

Hambone Federal Com

702H

OH / 66456

Design: Surveys (Pioneer 84)

Standard Survey Report

19 May, 2020





Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 702H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 2939.00usft (Pioneer 84)
Site:	Hambone Federal Com	MD Reference:	RKB @ 2939.00usft (Pioneer 84)
Well:	702H	North Reference:	Grid
Wellbore:	OH / 66456	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

Project	Eddy County, NM (NAD27 NME)		
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	Hambone Federal Com		
Site Position:		Northing:	382,232.28 usft
From:	Map	Easting:	601,211.49 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 3' 1.622153 N
		Longitude:	104° 0' 23.979022 W
		Grid Convergence:	0.17 °

Well	702H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	1.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 3' 0.456952 N
		Longitude:	104° 0' 3.580639 W
		Ground Level:	2,914.00 usft

Wellbore	OH / 66456		
Magnetics	Model Name	Sample Date	Declination (°)
	User Defined	4/14/2020	6.72
			Dip Angle (°)
			59.63
			Field Strength (nT)
			47,733.00000000

Design	Surveys (Pioneer 84)		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°)
			359.00

Survey Program	Date	5/18/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	9,041.30	Scientific Gyro Surveys (OH / 66456)	Scientific Keeper	Scientific Drilling Intl. Standard Wireline Keeper
9,110.00	19,989.00	Phoenix MWD Surveys (OH / 66456)	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.75	287.40	100.00	0.20	-0.62	0.21	0.75	0.75	0.00	
125.00	0.94	287.78	124.99	0.31	-0.98	0.32	0.76	0.76	1.52	
150.00	0.98	288.54	149.99	0.44	-1.37	0.46	0.17	0.16	3.04	
175.00	0.99	287.17	174.99	0.57	-1.78	0.60	0.10	0.04	-5.48	
200.00	0.97	288.01	199.98	0.70	-2.19	0.74	0.10	-0.08	3.36	
225.00	1.08	285.01	224.98	0.83	-2.62	0.87	0.49	0.44	-12.00	
250.00	1.16	283.65	249.97	0.95	-3.09	1.00	0.34	0.32	-5.44	
275.00	1.11	286.20	274.97	1.07	-3.57	1.14	0.28	-0.20	10.20	
300.00	1.10	286.02	299.97	1.21	-4.03	1.28	0.04	-0.04	-0.72	



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 702H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 2939.00usft (Pioneer 84)
Site:	Hambone Federal Com	MD Reference:	RKB @ 2939.00usft (Pioneer 84)
Well:	702H	North Reference:	Grid
Wellbore:	OH / 66456	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
325.00	0.94	286.08	324.96	1.33	-4.46	1.41	0.64	-0.64	0.24
350.00	1.10	292.08	349.96	1.48	-4.88	1.56	0.77	0.64	24.00
375.00	1.11	294.74	374.95	1.67	-5.32	1.76	0.21	0.04	10.64
400.00	1.14	297.10	399.95	1.88	-5.77	1.98	0.22	0.12	9.44
425.00	1.18	298.59	424.94	2.12	-6.21	2.23	0.20	0.16	5.96
450.00	1.13	299.51	449.94	2.36	-6.65	2.48	0.21	-0.20	3.68
475.00	1.18	299.25	474.93	2.61	-7.09	2.73	0.20	0.20	-1.04
500.00	1.28	298.17	499.93	2.87	-7.56	3.00	0.41	0.40	-4.32
525.00	1.31	297.69	524.92	3.13	-8.06	3.27	0.13	0.12	-1.92
550.00	1.39	297.14	549.91	3.40	-8.59	3.55	0.32	0.32	-2.20
575.00	1.33	296.85	574.91	3.67	-9.11	3.83	0.24	-0.24	-1.16
600.00	0.88	287.42	599.90	3.86	-9.56	4.03	1.94	-1.80	-37.72
625.00	1.05	254.30	624.90	3.86	-9.96	4.03	2.29	0.68	-132.48
650.00	1.07	224.23	649.89	3.63	-10.34	3.81	2.20	0.08	-120.28
675.00	1.43	216.55	674.89	3.21	-10.69	3.40	1.59	1.44	-30.72
700.00	1.48	209.63	699.88	2.68	-11.04	2.87	0.73	0.20	-27.68
725.00	1.53	212.05	724.87	2.12	-11.37	2.31	0.32	0.20	9.68
750.00	1.67	211.79	749.86	1.52	-11.74	1.73	0.56	0.56	-1.04
775.00	1.67	210.61	774.85	0.90	-12.12	1.11	0.14	0.00	-4.72
800.00	1.76	212.56	799.84	0.26	-12.51	0.48	0.43	0.36	7.80
825.00	1.83	215.29	824.83	-0.39	-12.95	-0.16	0.44	0.28	10.92
850.00	1.83	215.54	849.82	-1.04	-13.41	-0.80	0.03	0.00	1.00
875.00	1.92	215.49	874.80	-1.70	-13.89	-1.46	0.36	0.36	-0.20
900.00	2.05	218.22	899.79	-2.39	-14.41	-2.14	0.64	0.52	10.92
925.00	2.18	217.92	924.77	-3.12	-14.98	-2.86	0.52	0.52	-1.20
950.00	2.23	218.43	949.75	-3.88	-15.57	-3.60	0.21	0.20	2.04
975.00	2.50	217.27	974.73	-4.69	-16.20	-4.41	1.10	1.08	-4.64
1,000.00	2.64	214.84	999.70	-5.60	-16.86	-5.30	0.71	0.56	-9.72
1,025.00	2.97	213.00	1,024.67	-6.61	-17.54	-6.31	1.37	1.32	-7.36
1,050.00	3.04	213.65	1,049.64	-7.71	-18.26	-7.39	0.31	0.28	2.60
1,075.00	3.10	213.33	1,074.60	-8.83	-19.00	-8.49	0.25	0.24	-1.28
1,100.00	3.23	214.15	1,099.57	-9.97	-19.77	-9.63	0.55	0.52	3.28
1,125.00	3.24	213.60	1,124.53	-11.14	-20.56	-10.78	0.13	0.04	-2.20
1,150.00	3.26	214.50	1,149.49	-12.32	-21.35	-11.94	0.22	0.08	3.60
1,175.00	3.32	215.43	1,174.45	-13.49	-22.17	-13.11	0.32	0.24	3.72
1,200.00	2.98	218.49	1,199.41	-14.59	-23.00	-14.19	1.52	-1.36	12.24
1,225.00	2.01	230.71	1,224.38	-15.38	-23.74	-14.96	4.40	-3.88	48.88
1,250.00	1.60	245.24	1,249.37	-15.80	-24.40	-15.38	2.45	-1.64	58.12
1,275.00	1.53	256.83	1,274.36	-16.03	-25.04	-15.59	1.29	-0.28	46.36
1,300.00	1.49	260.08	1,299.35	-16.16	-25.68	-15.71	0.38	-0.16	13.00
1,325.00	1.41	263.25	1,324.35	-16.25	-26.31	-15.79	0.45	-0.32	12.68
1,350.00	1.47	262.27	1,349.34	-16.33	-26.93	-15.86	0.26	0.24	-3.92
1,375.00	1.48	263.83	1,374.33	-16.41	-27.57	-15.92	0.17	0.04	6.24



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 702H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 2939.00usft (Pioneer 84)
Site:	Hambone Federal Com	MD Reference:	RKB @ 2939.00usft (Pioneer 84)
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Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
1,400.00	1.47	263.27	1,399.32	-16.48	-28.21	-15.98	0.07	-0.04	-2.24
1,425.00	1.46	263.32	1,424.31	-16.55	-28.84	-16.05	0.04	-0.04	0.20
1,450.00	1.42	258.55	1,449.30	-16.65	-29.46	-16.14	0.51	-0.16	-19.08
1,475.00	1.03	234.36	1,474.30	-16.84	-29.95	-16.32	2.56	-1.56	-96.76
1,500.00	0.92	222.15	1,499.30	-17.12	-30.27	-16.59	0.94	-0.44	-48.84
1,525.00	0.97	220.66	1,524.29	-17.43	-30.54	-16.90	0.22	0.20	-5.96
1,550.00	1.02	225.67	1,549.29	-17.75	-30.84	-17.21	0.40	0.20	20.04
1,575.00	1.03	223.32	1,574.28	-18.07	-31.15	-17.52	0.17	0.04	-9.40
1,600.00	1.15	227.28	1,599.28	-18.40	-31.49	-17.85	0.57	0.48	15.84
1,625.00	1.42	229.94	1,624.27	-18.77	-31.91	-18.21	1.11	1.08	10.64
1,650.00	1.63	230.47	1,649.26	-19.20	-32.42	-18.63	0.84	0.84	2.12
1,675.00	1.83	234.41	1,674.25	-19.66	-33.02	-19.08	0.93	0.80	15.76
1,700.00	1.94	234.96	1,699.24	-20.13	-33.69	-19.54	0.45	0.44	2.20
1,725.00	2.08	233.01	1,724.22	-20.65	-34.40	-20.04	0.62	0.56	-7.80
1,750.00	2.19	233.14	1,749.21	-21.21	-35.15	-20.59	0.44	0.44	0.52
1,775.00	2.27	231.80	1,774.19	-21.80	-35.92	-21.17	0.38	0.32	-5.36
1,800.00	2.41	233.26	1,799.17	-22.42	-36.73	-21.78	0.61	0.56	5.84
1,825.00	2.58	233.42	1,824.14	-23.07	-37.60	-22.41	0.68	0.68	0.64
1,850.00	2.57	232.63	1,849.12	-23.75	-38.50	-23.07	0.15	-0.04	-3.16
1,875.00	2.57	232.02	1,874.09	-24.43	-39.38	-23.74	0.11	0.00	-2.44
1,900.00	2.49	232.12	1,899.07	-25.11	-40.25	-24.40	0.32	-0.32	0.40
1,925.00	1.97	234.07	1,924.05	-25.69	-41.03	-24.97	2.10	-2.08	7.80
1,950.00	0.96	237.44	1,949.04	-26.06	-41.56	-25.33	4.05	-4.04	13.48
1,975.00	0.43	252.30	1,974.04	-26.20	-41.82	-25.47	2.22	-2.12	59.44
2,000.00	0.32	275.24	1,999.04	-26.22	-41.98	-25.49	0.74	-0.44	91.76
2,025.00	0.19	296.24	2,024.04	-26.20	-42.09	-25.46	0.63	-0.52	84.00
2,050.00	0.25	292.22	2,049.04	-26.16	-42.18	-25.42	0.25	0.24	-16.08
2,075.00	0.24	295.56	2,074.04	-26.12	-42.27	-25.37	0.07	-0.04	13.36
2,100.00	0.18	296.97	2,099.04	-26.08	-42.36	-25.33	0.24	-0.24	5.64
2,125.00	0.19	304.27	2,124.04	-26.03	-42.42	-25.29	0.10	0.04	29.20
2,150.00	0.21	304.74	2,149.04	-25.99	-42.50	-25.24	0.08	0.08	1.88
2,175.00	0.14	310.07	2,174.04	-25.94	-42.56	-25.19	0.29	-0.28	21.32
2,200.00	0.18	76.48	2,199.04	-25.91	-42.54	-25.16	1.14	0.16	505.64
2,225.00	0.64	91.56	2,224.04	-25.91	-42.36	-25.16	1.87	1.84	60.32
2,250.00	0.95	97.97	2,249.03	-25.94	-42.02	-25.20	1.29	1.24	25.64
2,275.00	1.25	105.02	2,274.03	-26.04	-41.55	-25.31	1.31	1.20	28.20
2,300.00	1.56	105.26	2,299.02	-26.20	-40.96	-25.48	1.24	1.24	0.96
2,325.00	1.55	106.02	2,324.01	-26.38	-40.31	-25.67	0.09	-0.04	3.04
2,350.00	1.55	107.06	2,349.00	-26.57	-39.66	-25.88	0.11	0.00	4.16
2,375.00	1.53	106.60	2,373.99	-26.77	-39.02	-26.08	0.09	-0.08	-1.84
2,400.00	1.52	108.19	2,398.99	-26.97	-38.38	-26.29	0.17	-0.04	6.36
2,425.00	1.69	106.58	2,423.98	-27.17	-37.71	-26.51	0.70	0.68	-6.44
2,450.00	1.84	107.56	2,448.96	-27.40	-36.98	-26.75	0.61	0.60	3.92



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 702H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 2939.00usft (Pioneer 84)
Site:	Hambone Federal Com	MD Reference:	RKB @ 2939.00usft (Pioneer 84)
Well:	702H	North Reference:	Grid
Wellbore:	OH / 66456	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
2,475.00	2.20	108.90	2,473.95	-27.68	-36.14	-27.04	1.45	1.44	5.36
2,500.00	2.56	108.11	2,498.93	-28.01	-35.15	-27.39	1.45	1.44	-3.16
2,525.00	3.06	107.31	2,523.90	-28.38	-33.99	-27.78	2.01	2.00	-3.20
2,550.00	3.44	107.45	2,548.86	-28.80	-32.63	-28.23	1.52	1.52	0.56
2,575.00	3.99	107.39	2,573.80	-29.29	-31.09	-28.74	2.20	2.20	-0.24
2,600.00	4.29	108.49	2,598.74	-29.84	-29.37	-29.33	1.24	1.20	4.40
2,625.00	4.40	107.82	2,623.67	-30.43	-27.57	-29.95	0.48	0.44	-2.68
2,650.00	4.32	108.07	2,648.59	-31.02	-25.76	-30.56	0.33	-0.32	1.00
2,675.00	3.59	112.44	2,673.53	-31.61	-24.15	-31.18	3.16	-2.92	17.48
2,700.00	2.48	121.13	2,698.50	-32.19	-22.96	-31.78	4.79	-4.44	34.76
2,725.00	2.00	129.19	2,723.48	-32.74	-22.16	-32.35	2.29	-1.92	32.24
2,750.00	1.58	138.30	2,748.47	-33.28	-21.59	-32.89	2.02	-1.68	36.44
2,775.00	1.46	144.84	2,773.46	-33.79	-21.18	-33.42	0.84	-0.48	26.16
2,800.00	1.40	141.48	2,798.45	-34.29	-20.80	-33.93	0.41	-0.24	-13.44
2,825.00	1.39	143.49	2,823.44	-34.78	-20.43	-34.41	0.20	-0.04	8.04
2,850.00	1.63	141.04	2,848.44	-35.30	-20.03	-34.94	0.99	0.96	-9.80
2,875.00	1.49	140.90	2,873.43	-35.83	-19.60	-35.48	0.56	-0.56	-0.56
2,900.00	1.47	141.41	2,898.42	-36.33	-19.20	-35.99	0.10	-0.08	2.04
2,925.00	1.54	140.61	2,923.41	-36.84	-18.78	-36.50	0.29	0.28	-3.20
2,950.00	1.46	143.67	2,948.40	-37.35	-18.38	-37.03	0.45	-0.32	12.24
2,975.00	1.47	145.05	2,973.39	-37.87	-18.01	-37.55	0.15	0.04	5.52
3,000.00	1.55	142.59	2,998.38	-38.41	-17.62	-38.09	0.41	0.32	-9.84
3,025.00	1.51	142.63	3,023.38	-38.94	-17.21	-38.63	0.16	-0.16	0.16
3,050.00	1.52	145.05	3,048.37	-39.47	-16.82	-39.17	0.26	0.04	9.68
3,075.00	1.55	143.60	3,073.36	-40.01	-16.43	-39.72	0.20	0.12	-5.80
3,100.00	1.52	147.68	3,098.35	-40.57	-16.06	-40.28	0.45	-0.12	16.32
3,125.00	1.54	145.73	3,123.34	-41.12	-15.69	-40.84	0.22	0.08	-7.80
3,150.00	1.45	174.52	3,148.33	-41.72	-15.47	-41.44	2.99	-0.36	115.16
3,175.00	1.74	196.12	3,173.32	-42.40	-15.55	-42.12	2.65	1.16	86.40
3,200.00	1.88	205.04	3,198.31	-43.13	-15.82	-42.85	1.26	0.56	35.68
3,225.00	1.90	207.12	3,223.30	-43.87	-16.19	-43.58	0.29	0.08	8.32
3,250.00	2.08	208.21	3,248.28	-44.64	-16.59	-44.34	0.74	0.72	4.36
3,275.00	3.41	218.42	3,273.25	-45.62	-17.27	-45.31	5.65	5.32	40.84
3,300.00	4.06	221.62	3,298.20	-46.87	-18.32	-46.54	2.73	2.60	12.80
3,325.00	4.11	221.57	3,323.13	-48.20	-19.50	-47.85	0.20	0.20	-0.20
3,350.00	4.13	221.28	3,348.07	-49.55	-20.69	-49.18	0.12	0.08	-1.16
3,375.00	4.15	221.26	3,373.01	-50.90	-21.88	-50.51	0.08	0.08	-0.08
3,400.00	4.16	221.03	3,397.94	-52.27	-23.07	-51.86	0.08	0.04	-0.92
3,425.00	4.23	217.62	3,422.87	-53.68	-24.23	-53.25	1.04	0.28	-13.64
3,450.00	4.88	206.67	3,447.79	-55.36	-25.27	-54.91	4.33	2.60	-43.80
3,475.00	5.40	199.92	3,472.69	-57.42	-26.15	-56.95	3.19	2.08	-27.00
3,500.00	5.47	198.84	3,497.58	-59.65	-26.93	-59.17	0.50	0.28	-4.32
3,525.00	5.52	197.90	3,522.47	-61.92	-27.69	-61.43	0.41	0.20	-3.76
3,550.00	5.51	198.41	3,547.35	-64.21	-28.43	-63.70	0.20	-0.04	2.04



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 702H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 2939.00usft (Pioneer 84)
Site:	Hambone Federal Com	MD Reference:	RKB @ 2939.00usft (Pioneer 84)
Well:	702H	North Reference:	Grid
Wellbore:	OH / 66456	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
3,575.00	5.53	198.08	3,572.23	-66.49	-29.19	-65.97	0.15	0.08	-1.32
3,600.00	5.45	197.32	3,597.12	-68.77	-29.91	-68.24	0.43	-0.32	-3.04
3,625.00	5.38	196.09	3,622.01	-71.03	-30.59	-70.48	0.54	-0.28	-4.92
3,650.00	5.26	196.14	3,646.90	-73.25	-31.24	-72.70	0.48	-0.48	0.20
3,675.00	5.16	194.60	3,671.80	-75.44	-31.84	-74.88	0.69	-0.40	-6.16
3,700.00	5.27	195.16	3,696.69	-77.64	-32.42	-77.06	0.48	0.44	2.24
3,725.00	5.01	194.24	3,721.59	-79.81	-32.99	-79.22	1.09	-1.04	-3.68
3,750.00	4.88	193.28	3,746.50	-81.90	-33.50	-81.30	0.62	-0.52	-3.84
3,775.00	4.82	192.70	3,771.41	-83.96	-33.98	-83.35	0.31	-0.24	-2.32
3,800.00	4.76	191.41	3,796.32	-86.00	-34.41	-85.39	0.49	-0.24	-5.16
3,825.00	4.81	191.05	3,821.24	-88.05	-34.82	-87.42	0.23	0.20	-1.44
3,850.00	4.82	191.05	3,846.15	-90.10	-35.22	-89.48	0.04	0.04	0.00
3,875.00	4.82	191.15	3,871.06	-92.17	-35.63	-91.53	0.03	0.00	0.40
3,900.00	4.77	190.76	3,895.97	-94.22	-36.02	-93.57	0.24	-0.20	-1.56
3,925.00	4.75	189.42	3,920.89	-96.26	-36.39	-95.61	0.45	-0.08	-5.36
3,950.00	4.67	188.71	3,945.80	-98.29	-36.71	-97.63	0.40	-0.32	-2.84
3,975.00	4.64	187.52	3,970.72	-100.30	-37.00	-99.63	0.40	-0.12	-4.76
4,000.00	4.62	187.70	3,995.64	-102.30	-37.26	-101.63	0.10	-0.08	0.72
4,025.00	4.62	187.78	4,020.56	-104.29	-37.54	-103.62	0.03	0.00	0.32
4,050.00	4.54	187.09	4,045.48	-106.27	-37.79	-105.60	0.39	-0.32	-2.76
4,075.00	4.51	186.00	4,070.40	-108.23	-38.02	-107.55	0.36	-0.12	-4.36
4,100.00	4.55	185.19	4,095.32	-110.20	-38.21	-109.51	0.30	0.16	-3.24
4,125.00	4.49	185.31	4,120.24	-112.16	-38.39	-111.47	0.24	-0.24	0.48
4,150.00	4.51	185.58	4,145.17	-114.11	-38.58	-113.42	0.12	0.08	1.08
4,175.00	4.54	185.31	4,170.09	-116.07	-38.77	-115.38	0.15	0.12	-1.08
4,200.00	4.51	185.09	4,195.01	-118.04	-38.94	-117.34	0.14	-0.12	-0.88
4,225.00	4.49	185.04	4,219.93	-119.99	-39.12	-119.29	0.08	-0.08	-0.20
4,250.00	4.48	184.24	4,244.86	-121.94	-39.28	-121.24	0.25	-0.04	-3.20
4,275.00	4.44	183.80	4,269.78	-123.88	-39.41	-123.17	0.21	-0.16	-1.76
4,300.00	4.46	183.63	4,294.70	-125.81	-39.54	-125.11	0.10	0.08	-0.68
4,325.00	4.41	183.10	4,319.63	-127.74	-39.65	-127.03	0.26	-0.20	-2.12
4,350.00	4.47	183.76	4,344.56	-129.68	-39.77	-128.96	0.32	0.24	2.64
4,375.00	4.48	182.91	4,369.48	-131.62	-39.88	-130.91	0.27	0.04	-3.40
4,400.00	4.47	182.98	4,394.40	-133.57	-39.98	-132.85	0.05	-0.04	0.28
4,425.00	4.47	183.67	4,419.33	-135.52	-40.09	-134.80	0.22	0.00	2.76
4,450.00	4.53	184.51	4,444.25	-137.47	-40.23	-136.75	0.36	0.24	3.36
4,475.00	4.53	184.13	4,469.17	-139.44	-40.38	-138.72	0.12	0.00	-1.52
4,500.00	4.49	188.77	4,494.09	-141.39	-40.60	-140.66	1.47	-0.16	18.56
4,525.00	4.44	193.42	4,519.02	-143.30	-40.98	-142.57	1.46	-0.20	18.60
4,550.00	4.49	194.72	4,543.94	-145.19	-41.45	-144.44	0.45	0.20	5.20
4,575.00	4.48	194.95	4,568.87	-147.08	-41.95	-146.33	0.08	-0.04	0.92
4,600.00	4.47	194.38	4,593.79	-148.97	-42.44	-148.20	0.18	-0.04	-2.28
4,625.00	4.49	194.72	4,618.71	-150.86	-42.93	-150.08	0.13	0.08	1.36



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 702H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 2939.00usft (Pioneer 84)
Site:	Hambone Federal Com	MD Reference:	RKB @ 2939.00usft (Pioneer 84)
Well:	702H	North Reference:	Grid
Wellbore:	OH / 66456	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
4,650.00	4.43	195.67	4,643.64	-152.73	-43.44	-151.95	0.38	-0.24	3.80
4,675.00	3.72	199.81	4,668.57	-154.43	-43.98	-153.63	3.07	-2.84	16.56
4,700.00	2.92	201.89	4,693.53	-155.78	-44.49	-154.98	3.24	-3.20	8.32
4,725.00	2.71	202.93	4,718.50	-156.91	-44.96	-156.11	0.86	-0.84	4.16
4,750.00	2.65	201.29	4,743.47	-158.00	-45.40	-157.18	0.39	-0.24	-6.56
4,775.00	2.60	202.43	4,768.45	-159.06	-45.83	-158.24	0.29	-0.20	4.56
4,800.00	2.59	201.90	4,793.42	-160.11	-46.25	-159.28	0.10	-0.04	-2.12
4,825.00	2.60	201.28	4,818.40	-161.16	-46.67	-160.32	0.12	0.04	-2.48
4,850.00	2.60	202.40	4,843.37	-162.21	-47.09	-161.37	0.20	0.00	4.48
4,875.00	2.45	201.40	4,868.35	-163.24	-47.50	-162.38	0.63	-0.60	-4.00
4,900.00	1.21	202.98	4,893.33	-163.98	-47.80	-163.12	4.96	-4.96	6.32
4,925.00	0.81	207.01	4,918.33	-164.38	-47.98	-163.51	1.62	-1.60	16.12
4,950.00	0.78	208.25	4,943.33	-164.68	-48.14	-163.82	0.14	-0.12	4.96
4,975.00	0.76	201.39	4,968.33	-164.99	-48.29	-164.12	0.38	-0.08	-27.44
5,000.00	0.80	216.72	4,993.32	-165.28	-48.45	-164.41	0.85	0.16	61.32
5,025.00	0.99	208.05	5,018.32	-165.61	-48.66	-164.74	0.93	0.76	-34.68
5,050.00	1.00	216.49	5,043.32	-165.98	-48.89	-165.10	0.59	0.04	33.76
5,075.00	1.08	223.28	5,068.31	-166.33	-49.18	-165.44	0.59	0.32	27.16
5,100.00	1.12	222.65	5,093.31	-166.68	-49.51	-165.79	0.17	0.16	-2.52
5,125.00	1.07	220.19	5,118.30	-167.03	-49.82	-166.14	0.27	-0.20	-9.84
5,150.00	1.11	221.03	5,143.30	-167.40	-50.13	-166.50	0.17	0.16	3.36
5,175.00	1.15	226.70	5,168.29	-167.75	-50.47	-166.84	0.47	0.16	22.68
5,200.00	1.18	224.99	5,193.29	-168.10	-50.84	-167.19	0.18	0.12	-6.84
5,225.00	1.31	224.92	5,218.28	-168.49	-51.22	-167.57	0.52	0.52	-0.28
5,250.00	1.44	224.58	5,243.28	-168.92	-51.64	-167.99	0.52	0.52	-1.36
5,275.00	1.56	221.66	5,268.27	-169.39	-52.09	-168.46	0.57	0.48	-11.68
5,300.00	1.62	225.83	5,293.26	-169.89	-52.57	-168.95	0.52	0.24	16.68
5,325.00	1.60	222.49	5,318.25	-170.40	-53.06	-169.45	0.38	-0.08	-13.36
5,350.00	1.62	223.57	5,343.24	-170.91	-53.54	-169.95	0.15	0.08	4.32
5,375.00	1.60	224.07	5,368.23	-171.42	-54.02	-170.45	0.10	-0.08	2.00
5,400.00	1.62	224.69	5,393.22	-171.92	-54.52	-170.94	0.11	0.08	2.48
5,425.00	1.66	224.64	5,418.21	-172.43	-55.02	-171.44	0.16	0.16	-0.20
5,450.00	1.62	226.06	5,443.20	-172.93	-55.53	-171.94	0.23	-0.16	5.68
5,475.00	1.75	223.10	5,468.19	-173.46	-56.04	-172.45	0.63	0.52	-11.84
5,500.00	1.81	223.13	5,493.17	-174.02	-56.57	-173.01	0.24	0.24	0.12
5,525.00	1.81	226.42	5,518.16	-174.58	-57.13	-173.56	0.42	0.00	13.16
5,550.00	1.84	224.27	5,543.15	-175.14	-57.70	-174.11	0.30	0.12	-8.60
5,575.00	1.90	226.00	5,568.14	-175.72	-58.27	-174.67	0.33	0.24	6.92
5,600.00	1.91	226.22	5,593.12	-176.29	-58.87	-175.24	0.05	0.04	0.88
5,625.00	1.97	224.84	5,618.11	-176.89	-59.48	-175.82	0.30	0.24	-5.52
5,650.00	1.99	227.06	5,643.09	-177.49	-60.10	-176.41	0.32	0.08	8.88
5,675.00	1.98	225.52	5,668.08	-178.09	-60.72	-177.00	0.22	-0.04	-6.16
5,700.00	2.07	226.33	5,693.06	-178.70	-61.36	-177.60	0.38	0.36	3.24



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 702H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 2939.00usft (Pioneer 84)
Site:	Hambone Federal Com	MD Reference:	RKB @ 2939.00usft (Pioneer 84)
Well:	702H	North Reference:	Grid
Wellbore:	OH / 66456	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)	
5,725.00	2.04	225.09	5,718.05	-179.33	-62.00	-178.22	0.21	-0.12	-4.96	
5,750.00	2.01	224.51	5,743.03	-179.95	-62.62	-178.83	0.15	-0.12	-2.32	
5,775.00	2.06	225.75	5,768.01	-180.58	-63.25	-179.45	0.27	0.20	4.96	
5,800.00	2.04	226.85	5,793.00	-181.20	-63.90	-180.05	0.18	-0.08	4.40	
5,825.00	2.04	224.22	5,817.98	-181.82	-64.53	-180.67	0.37	0.00	-10.52	
5,850.00	2.10	223.25	5,842.97	-182.47	-65.16	-181.31	0.28	0.24	-3.88	
5,875.00	2.10	225.72	5,867.95	-183.13	-65.80	-181.95	0.36	0.00	9.88	
5,900.00	2.07	224.14	5,892.93	-183.77	-66.44	-182.58	0.26	-0.12	-6.32	
5,925.00	2.01	223.34	5,917.92	-184.41	-67.06	-183.21	0.27	-0.24	-3.20	
5,950.00	1.95	222.09	5,942.90	-185.05	-67.64	-183.84	0.30	-0.24	-5.00	
5,975.00	1.95	221.32	5,967.89	-185.68	-68.21	-184.46	0.10	0.00	-3.08	
6,000.00	1.94	221.09	5,992.87	-186.32	-68.77	-185.09	0.05	-0.04	-0.92	
6,025.00	1.82	219.96	6,017.86	-186.94	-69.30	-185.71	0.50	-0.48	-4.52	
6,050.00	1.81	218.21	6,042.85	-187.56	-69.80	-186.31	0.23	-0.04	-7.00	
6,075.00	1.79	218.94	6,067.84	-188.17	-70.29	-186.92	0.12	-0.08	2.92	
6,100.00	1.75	219.10	6,092.82	-188.77	-70.78	-187.51	0.16	-0.16	0.64	
6,125.00	1.73	218.01	6,117.81	-189.37	-71.25	-188.09	0.15	-0.08	-4.36	
6,150.00	1.78	219.24	6,142.80	-189.96	-71.73	-188.68	0.25	0.20	4.92	
6,175.00	1.75	217.10	6,167.79	-190.57	-72.20	-189.28	0.29	-0.12	-8.56	
6,200.00	1.38	217.82	6,192.78	-191.11	-72.62	-189.81	1.48	-1.48	2.88	
6,225.00	0.10	28.09	6,217.78	-191.33	-72.79	-190.03	5.91	-5.12	681.08	
6,250.00	0.47	38.49	6,242.78	-191.23	-72.72	-189.93	1.49	1.48	41.60	
6,275.00	0.58	45.00	6,267.78	-191.06	-72.56	-189.76	0.50	0.44	26.04	
6,300.00	0.57	38.20	6,292.77	-190.87	-72.40	-189.58	0.28	-0.04	-27.20	
6,325.00	0.52	50.00	6,317.77	-190.70	-72.23	-189.41	0.49	-0.20	47.20	
6,350.00	0.53	66.50	6,342.77	-190.58	-72.04	-189.30	0.60	0.04	66.00	
6,375.00	0.43	75.21	6,367.77	-190.51	-71.85	-189.23	0.49	-0.40	34.84	
6,400.00	0.45	93.99	6,392.77	-190.50	-71.66	-189.22	0.58	0.08	75.12	
6,425.00	0.47	98.14	6,417.77	-190.52	-71.46	-189.24	0.16	0.08	16.60	
6,450.00	0.48	109.81	6,442.77	-190.57	-71.26	-189.29	0.39	0.04	46.68	
6,475.00	0.34	116.82	6,467.77	-190.64	-71.09	-189.37	0.59	-0.56	28.04	
6,500.00	0.39	109.35	6,492.77	-190.70	-70.95	-189.43	0.28	0.20	-29.88	
6,525.00	0.51	114.17	6,517.77	-190.77	-70.76	-189.51	0.50	0.48	19.28	
6,550.00	0.46	113.29	6,542.77	-190.86	-70.57	-189.60	0.20	-0.20	-3.52	
6,575.00	0.51	82.19	6,567.76	-190.88	-70.37	-189.62	1.06	0.20	-124.40	
6,600.00	0.58	39.19	6,592.76	-190.77	-70.18	-189.51	1.62	0.28	-172.00	
6,625.00	0.71	49.83	6,617.76	-190.57	-69.98	-189.32	0.70	0.52	42.56	
6,650.00	0.68	48.85	6,642.76	-190.37	-69.75	-189.13	0.13	-0.12	-3.92	
6,675.00	0.60	50.77	6,667.76	-190.19	-69.54	-188.95	0.33	-0.32	7.68	
6,700.00	0.49	43.34	6,692.76	-190.03	-69.36	-188.79	0.52	-0.44	-29.72	
6,725.00	0.20	18.31	6,717.76	-189.91	-69.27	-188.67	1.28	-1.16	-100.12	
6,750.00	0.10	260.35	6,742.76	-189.87	-69.28	-188.64	1.05	-0.40	-471.84	
6,775.00	0.33	264.70	6,767.76	-189.89	-69.38	-188.65	0.92	0.92	17.40	
6,800.00	0.47	257.97	6,792.76	-189.91	-69.55	-188.67	0.59	0.56	-26.92	



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 702H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 2939.00usft (Pioneer 84)
Site:	Hambone Federal Com	MD Reference:	RKB @ 2939.00usft (Pioneer 84)
Well:	702H	North Reference:	Grid
Wellbore:	OH / 66456	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
6,825.00	0.49	240.89	6,817.76	-189.99	-69.74	-188.74	0.58	0.08	-68.32
6,850.00	0.68	228.43	6,842.75	-190.14	-69.95	-188.89	0.91	0.76	-49.84
6,875.00	0.77	220.23	6,867.75	-190.36	-70.16	-189.11	0.55	0.36	-32.80
6,900.00	0.98	205.02	6,892.75	-190.69	-70.36	-189.43	1.25	0.84	-60.84
6,925.00	1.09	206.20	6,917.75	-191.09	-70.56	-189.83	0.45	0.44	4.72
6,950.00	1.12	206.26	6,942.74	-191.53	-70.77	-190.26	0.12	0.12	0.24
6,975.00	1.19	203.22	6,967.74	-191.98	-70.98	-190.71	0.37	0.28	-12.16
7,000.00	1.23	201.66	6,992.73	-192.47	-71.18	-191.20	0.21	0.16	-6.24
7,025.00	1.43	194.44	7,017.72	-193.02	-71.36	-191.75	1.04	0.80	-28.88
7,050.00	1.63	188.65	7,042.71	-193.68	-71.49	-192.40	1.01	0.80	-23.16
7,075.00	1.71	186.10	7,067.70	-194.40	-71.59	-193.12	0.44	0.32	-10.20
7,100.00	1.94	181.05	7,092.69	-195.19	-71.63	-193.91	1.12	0.92	-20.20
7,125.00	1.94	176.65	7,117.68	-196.04	-71.62	-194.76	0.60	0.00	-17.60
7,150.00	1.79	160.43	7,142.66	-196.83	-71.46	-195.55	2.19	-0.60	-64.88
7,175.00	1.81	129.06	7,167.65	-197.44	-71.02	-196.18	3.89	0.08	-125.48
7,200.00	1.64	139.79	7,192.64	-197.97	-70.49	-196.71	1.46	-0.68	42.92
7,225.00	1.51	141.38	7,217.63	-198.50	-70.05	-197.24	0.55	-0.52	6.36
7,250.00	1.25	147.96	7,242.62	-198.99	-69.70	-197.74	1.22	-1.04	26.32
7,275.00	1.19	157.49	7,267.62	-199.46	-69.45	-198.21	0.85	-0.24	38.12
7,300.00	1.04	164.62	7,292.61	-199.92	-69.29	-198.68	0.82	-0.60	28.52
7,325.00	0.96	174.60	7,317.61	-200.34	-69.22	-199.10	0.77	-0.32	39.92
7,350.00	0.59	196.30	7,342.61	-200.67	-69.23	-199.44	1.86	-1.48	86.80
7,375.00	0.45	259.32	7,367.61	-200.82	-69.36	-199.58	2.23	-0.56	252.08
7,400.00	0.41	267.67	7,392.61	-200.84	-69.55	-199.59	0.30	-0.16	33.40
7,425.00	0.50	270.13	7,417.61	-200.84	-69.75	-199.59	0.37	0.36	9.84
7,450.00	0.59	229.93	7,442.60	-200.92	-69.96	-199.67	1.54	0.36	-160.80
7,475.00	0.65	216.57	7,467.60	-201.12	-70.14	-199.87	0.62	0.24	-53.44
7,500.00	0.61	216.79	7,492.60	-201.34	-70.30	-200.08	0.16	-0.16	0.88
7,525.00	0.23	299.70	7,517.60	-201.42	-70.43	-200.16	2.50	-1.52	331.64
7,550.00	1.54	4.02	7,542.60	-201.06	-70.45	-199.80	5.82	5.24	257.28
7,575.00	2.38	7.21	7,567.58	-200.21	-70.36	-198.95	3.39	3.36	12.76
7,600.00	2.60	7.29	7,592.56	-199.14	-70.22	-197.88	0.88	0.88	0.32
7,625.00	2.55	6.42	7,617.53	-198.02	-70.09	-196.77	0.25	-0.20	-3.48
7,650.00	2.57	8.31	7,642.51	-196.91	-69.94	-195.66	0.35	0.08	7.56
7,675.00	2.46	358.83	7,667.48	-195.82	-69.87	-194.57	1.72	-0.44	-37.92
7,700.00	2.43	359.41	7,692.46	-194.76	-69.89	-193.51	0.16	-0.12	2.32
7,725.00	2.43	355.25	7,717.44	-193.70	-69.94	-192.45	0.71	0.00	-16.64
7,750.00	2.38	353.14	7,742.42	-192.65	-70.04	-191.40	0.41	-0.20	-8.44
7,775.00	2.30	350.87	7,767.40	-191.64	-70.19	-190.39	0.49	-0.32	-9.08
7,800.00	2.33	347.68	7,792.38	-190.65	-70.37	-189.39	0.53	0.12	-12.76
7,825.00	2.34	347.04	7,817.36	-189.66	-70.60	-188.40	0.11	0.04	-2.56
7,850.00	2.29	346.28	7,842.34	-188.68	-70.83	-187.41	0.23	-0.20	-3.04
7,875.00	2.23	345.42	7,867.32	-187.72	-71.07	-186.45	0.28	-0.24	-3.44



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 702H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 2939.00usft (Pioneer 84)
Site:	Hambone Federal Com	MD Reference:	RKB @ 2939.00usft (Pioneer 84)
Well:	702H	North Reference:	Grid
Wellbore:	OH / 66456	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
7,900.00	2.27	339.65	7,892.30	-186.78	-71.37	-185.51	0.92	0.16	-23.08
7,925.00	2.08	336.95	7,917.28	-185.90	-71.72	-184.62	0.86	-0.76	-10.80
7,950.00	1.98	332.12	7,942.26	-185.10	-72.10	-183.82	0.79	-0.40	-19.32
7,975.00	1.79	324.00	7,967.25	-184.41	-72.53	-183.11	1.31	-0.76	-32.48
8,000.00	1.60	312.26	7,992.24	-183.86	-73.01	-182.55	1.58	-0.76	-46.96
8,025.00	1.51	307.70	8,017.23	-183.42	-73.53	-182.11	0.61	-0.36	-18.24
8,050.00	1.43	301.54	8,042.22	-183.05	-74.06	-181.73	0.71	-0.32	-24.64
8,075.00	1.49	293.15	8,067.21	-182.76	-74.62	-181.43	0.89	0.24	-33.56
8,100.00	1.56	290.26	8,092.20	-182.52	-75.24	-181.18	0.42	0.28	-11.56
8,125.00	1.57	294.58	8,117.19	-182.26	-75.87	-180.91	0.47	0.04	17.28
8,150.00	1.56	290.65	8,142.19	-182.00	-76.50	-180.63	0.43	-0.04	-15.72
8,175.00	1.62	291.58	8,167.18	-181.75	-77.15	-180.37	0.26	0.24	3.72
8,200.00	1.69	295.80	8,192.17	-181.45	-77.81	-180.07	0.56	0.28	16.88
8,225.00	1.69	297.14	8,217.15	-181.13	-78.47	-179.73	0.16	0.00	5.36
8,250.00	1.74	299.29	8,242.14	-180.77	-79.13	-179.36	0.33	0.20	8.60
8,275.00	1.84	297.83	8,267.13	-180.40	-79.82	-178.98	0.44	0.40	-5.84
8,300.00	1.83	297.30	8,292.12	-180.03	-80.53	-178.60	0.08	-0.04	-2.12
8,325.00	1.72	297.67	8,317.11	-179.67	-81.21	-178.23	0.44	-0.44	1.48
8,350.00	1.68	299.50	8,342.10	-179.32	-81.86	-177.86	0.27	-0.16	7.32
8,375.00	1.66	298.54	8,367.08	-178.96	-82.50	-177.50	0.14	-0.08	-3.84
8,400.00	1.52	308.22	8,392.07	-178.59	-83.08	-177.11	1.21	-0.56	38.72
8,425.00	1.60	335.80	8,417.07	-178.06	-83.48	-176.58	2.99	0.32	110.32
8,450.00	1.81	341.44	8,442.05	-177.37	-83.75	-175.88	1.07	0.84	22.56
8,475.00	1.75	342.55	8,467.04	-176.63	-83.99	-175.14	0.28	-0.24	4.44
8,500.00	1.68	338.02	8,492.03	-175.93	-84.24	-174.43	0.61	-0.28	-18.12
8,525.00	1.72	338.60	8,517.02	-175.24	-84.52	-173.74	0.17	0.16	2.32
8,550.00	1.73	337.27	8,542.01	-174.54	-84.80	-173.03	0.17	0.04	-5.32
8,575.00	1.76	337.11	8,567.00	-173.84	-85.10	-172.33	0.12	0.12	-0.64
8,600.00	1.79	350.26	8,591.99	-173.10	-85.31	-171.58	1.63	0.12	52.60
8,625.00	1.84	358.03	8,616.97	-172.31	-85.39	-170.80	1.00	0.20	31.08
8,650.00	2.00	0.37	8,641.96	-171.48	-85.40	-169.96	0.71	0.64	9.36
8,675.00	1.88	3.51	8,666.95	-170.63	-85.37	-169.12	0.64	-0.48	12.56
8,700.00	1.94	2.25	8,691.93	-169.80	-85.33	-168.28	0.29	0.24	-5.04
8,725.00	1.90	10.86	8,716.92	-168.97	-85.24	-167.46	1.16	-0.16	34.44
8,750.00	1.74	17.48	8,741.90	-168.20	-85.05	-166.69	1.06	-0.64	26.48
8,775.00	1.83	22.10	8,766.89	-167.47	-84.78	-165.96	0.68	0.36	18.48
8,800.00	1.74	29.42	8,791.88	-166.77	-84.44	-165.27	0.98	-0.36	29.28
8,825.00	1.75	25.56	8,816.87	-166.09	-84.09	-164.60	0.47	0.04	-15.44
8,850.00	2.05	28.86	8,841.85	-165.36	-83.71	-163.87	1.28	1.20	13.20
8,875.00	2.14	24.16	8,866.84	-164.54	-83.31	-163.06	0.78	0.36	-18.80
8,900.00	2.18	27.18	8,891.82	-163.69	-82.90	-162.22	0.48	0.16	12.08
8,925.00	2.21	20.38	8,916.80	-162.82	-82.51	-161.35	1.05	0.12	-27.20
8,950.00	2.32	24.82	8,941.78	-161.90	-82.13	-160.45	0.83	0.44	17.76



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 702H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 2939.00usft (Pioneer 84)
Site:	Hambone Federal Com	MD Reference:	RKB @ 2939.00usft (Pioneer 84)
Well:	702H	North Reference:	Grid
Wellbore:	OH / 66456	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
8,975.00	2.12	22.82	8,966.76	-161.02	-81.74	-159.57	0.86	-0.80	-8.00
9,000.00	1.96	28.01	8,991.75	-160.22	-81.36	-158.77	0.98	-0.64	20.76
9,025.00	1.91	22.52	9,016.73	-159.45	-81.00	-158.02	0.77	-0.20	-21.96
9,041.30	1.80	23.50	9,033.03	-158.97	-80.79	-157.53	0.70	-0.67	6.01
Tie In									
9,110.00	1.25	23.27	9,101.70	-157.29	-80.07	-155.87	0.80	-0.80	-0.33
First Phoenix MWD Survey - OH									
9,210.00	0.91	25.19	9,201.68	-155.57	-79.30	-154.16	0.34	-0.34	1.92
9,242.00	0.82	18.28	9,233.68	-155.12	-79.12	-153.72	0.43	-0.28	-21.59
9,289.00	4.55	358.11	9,280.62	-152.94	-79.07	-151.53	8.07	7.94	-42.91
9,337.00	11.38	356.60	9,328.13	-146.30	-79.42	-144.89	14.23	14.23	-3.15
9,384.00	18.19	355.80	9,373.55	-134.34	-80.23	-132.92	14.50	14.49	-1.70
9,432.00	24.06	354.08	9,418.30	-117.12	-81.79	-115.68	12.30	12.23	-3.58
9,479.00	26.49	354.21	9,460.80	-97.16	-83.84	-95.68	5.17	5.17	0.28
9,527.00	28.64	354.58	9,503.35	-75.06	-86.00	-73.54	4.49	4.48	0.77
9,574.00	32.40	355.72	9,543.83	-51.28	-88.01	-49.73	8.09	8.00	2.43
9,622.00	36.56	357.50	9,583.39	-24.16	-89.59	-22.59	8.92	8.67	3.71
9,669.00	40.24	358.10	9,620.22	5.01	-90.71	6.59	7.87	7.83	1.28
9,716.00	44.08	358.01	9,655.05	36.53	-91.78	38.13	8.17	8.17	-0.19
9,763.00	46.46	358.21	9,688.12	69.90	-92.88	71.51	5.07	5.06	0.43
9,811.00	48.25	0.35	9,720.64	105.20	-93.31	106.81	4.97	3.73	4.46
9,858.00	50.39	1.40	9,751.28	140.84	-92.76	142.43	4.86	4.55	2.23
9,906.00	54.01	2.41	9,780.69	178.74	-91.49	180.31	7.72	7.54	2.10
9,953.00	59.79	2.35	9,806.35	218.06	-89.86	219.59	12.30	12.30	-0.13
10,001.00	64.60	2.10	9,828.73	260.47	-88.21	261.97	10.03	10.02	-0.52
10,048.00	67.18	2.16	9,847.93	303.34	-86.62	304.80	5.49	5.49	0.13
10,096.00	68.30	2.39	9,866.11	347.72	-84.86	349.15	2.38	2.33	0.48
10,143.00	69.09	2.78	9,883.19	391.47	-82.88	392.85	1.85	1.68	0.83
10,191.00	76.72	3.30	9,897.29	437.25	-80.45	438.59	15.93	15.90	1.08
10,286.00	88.39	4.17	9,909.58	531.08	-74.31	532.30	12.32	12.28	0.92
10,381.00	89.13	2.67	9,911.63	625.89	-68.64	626.99	1.76	0.78	-1.58
10,476.00	88.60	1.10	9,913.51	720.82	-65.52	721.85	1.74	-0.56	-1.65
10,571.00	86.80	359.74	9,917.33	815.73	-64.82	816.74	2.37	-1.89	-1.43
10,666.00	91.12	0.58	9,919.05	910.69	-64.56	911.68	4.63	4.55	0.88
10,761.00	90.09	3.54	9,918.05	1,005.61	-61.14	1,006.53	3.30	-1.08	3.12
10,855.00	95.56	3.29	9,913.42	1,099.30	-55.55	1,100.10	5.83	5.82	-0.27
10,950.00	93.35	1.64	9,906.04	1,193.91	-51.48	1,194.63	2.90	-2.33	-1.74
11,079.00	90.15	359.93	9,902.10	1,322.82	-49.72	1,323.48	2.81	-2.48	-1.33
11,173.00	89.91	0.39	9,902.05	1,416.82	-49.45	1,417.46	0.55	-0.26	0.49
11,268.00	90.56	1.02	9,901.66	1,511.81	-48.29	1,512.42	0.95	0.68	0.66
11,363.00	90.90	358.49	9,900.45	1,606.79	-48.69	1,607.40	2.69	0.36	-2.66
11,458.00	91.13	358.46	9,898.77	1,701.74	-51.22	1,702.38	0.24	0.24	-0.03
11,552.00	87.56	358.36	9,899.84	1,795.69	-53.83	1,796.35	3.80	-3.80	-0.11
11,647.00	87.91	357.88	9,903.59	1,890.56	-56.94	1,891.27	0.63	0.37	-0.51



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 702H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 2939.00usft (Pioneer 84)
Site:	Hambone Federal Com	MD Reference:	RKB @ 2939.00usft (Pioneer 84)
Well:	702H	North Reference:	Grid
Wellbore:	OH / 66456	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
11,742.00	87.54	357.37	9,907.37	1,985.40	-60.88	1,986.16	0.66	-0.39	-0.54
11,837.00	86.43	356.69	9,912.36	2,080.14	-65.79	2,080.97	1.37	-1.17	-0.72
11,931.00	87.62	355.78	9,917.24	2,173.81	-71.95	2,174.73	1.59	1.27	-0.97
12,026.00	91.68	357.17	9,917.82	2,268.61	-77.79	2,269.62	4.52	4.27	1.46
12,121.00	93.09	358.35	9,913.87	2,363.45	-81.50	2,364.51	1.93	1.48	1.24
12,216.00	93.30	359.26	9,908.57	2,458.28	-83.48	2,459.36	0.98	0.22	0.96
12,311.00	94.64	1.25	9,902.00	2,553.04	-83.06	2,554.10	2.52	1.41	2.09
12,405.00	92.75	2.62	9,895.94	2,646.79	-79.89	2,647.78	2.48	-2.01	1.46
12,499.00	91.87	4.03	9,892.15	2,740.55	-74.45	2,741.43	1.77	-0.94	1.50
12,595.00	88.69	1.81	9,891.68	2,836.41	-69.56	2,837.19	4.04	-3.31	-2.31
12,690.00	87.06	0.20	9,895.20	2,931.32	-67.89	2,932.06	2.41	-1.72	-1.69
12,785.00	88.86	359.54	9,898.58	3,026.25	-68.11	3,026.98	2.02	1.89	-0.69
12,879.00	88.60	358.40	9,900.67	3,120.21	-69.80	3,120.96	1.24	-0.28	-1.21
12,974.00	88.15	358.09	9,903.36	3,215.13	-72.70	3,215.91	0.58	-0.47	-0.33
13,069.00	90.56	356.56	9,904.43	3,310.01	-77.14	3,310.85	3.00	2.54	-1.61
13,164.00	91.68	356.36	9,902.57	3,404.81	-83.00	3,405.74	1.20	1.18	-0.21
13,259.00	91.93	356.77	9,899.58	3,499.59	-88.69	3,500.61	0.51	0.26	0.43
13,354.00	92.61	357.65	9,895.82	3,594.40	-93.31	3,595.49	1.17	0.72	0.93
13,450.00	92.56	358.51	9,891.49	3,690.25	-96.52	3,691.37	0.90	-0.05	0.90
13,545.00	92.44	358.01	9,887.34	3,785.12	-99.41	3,786.28	0.54	-0.13	-0.53
13,640.00	92.86	358.57	9,882.95	3,879.97	-102.24	3,881.17	0.74	0.44	0.59
13,735.00	93.25	358.81	9,877.89	3,974.81	-104.41	3,976.03	0.48	0.41	0.25
13,829.00	93.34	359.23	9,872.49	4,068.64	-106.01	4,069.87	0.46	0.10	0.45
13,924.00	91.46	356.33	9,868.51	4,163.47	-109.69	4,164.75	3.64	-1.98	-3.05
14,019.00	91.48	356.42	9,866.07	4,258.25	-115.69	4,259.62	0.10	0.02	0.09
14,114.00	91.51	356.38	9,863.59	4,353.03	-121.66	4,354.49	0.05	0.03	-0.04
14,209.00	91.49	356.40	9,861.11	4,447.81	-127.64	4,449.36	0.03	-0.02	0.02
14,304.00	91.24	356.59	9,858.84	4,542.61	-133.44	4,544.24	0.33	-0.26	0.20
14,399.00	91.20	356.57	9,856.82	4,637.42	-139.11	4,639.14	0.05	-0.04	-0.02
14,494.00	93.01	359.30	9,853.33	4,732.28	-142.53	4,734.04	3.45	1.91	2.87
14,589.00	92.80	359.51	9,848.52	4,827.15	-143.52	4,828.92	0.31	-0.22	0.22
14,684.00	90.38	1.44	9,845.88	4,922.10	-142.73	4,923.84	3.26	-2.55	2.03
14,779.00	91.53	2.11	9,844.30	5,017.04	-139.79	5,018.71	1.40	1.21	0.71
14,874.00	88.33	2.67	9,844.41	5,111.94	-135.83	5,113.54	3.42	-3.37	0.59
14,970.00	87.06	3.24	9,848.27	5,207.74	-130.88	5,209.23	1.45	-1.32	0.59
15,065.00	86.42	3.93	9,853.68	5,302.40	-124.95	5,303.77	0.99	-0.67	0.73
15,160.00	86.06	4.49	9,859.91	5,396.93	-117.99	5,398.17	0.70	-0.38	0.59
15,255.00	86.02	4.35	9,866.47	5,491.43	-110.69	5,492.52	0.15	-0.04	-0.15
15,350.00	85.47	4.25	9,873.51	5,585.90	-103.58	5,586.85	0.59	-0.58	-0.11
15,445.00	84.64	0.28	9,881.71	5,680.45	-99.84	5,681.33	4.25	-0.87	-4.18
15,540.00	88.53	357.31	9,887.37	5,775.23	-101.84	5,776.13	5.15	4.09	-3.13
15,635.00	88.38	356.40	9,889.93	5,870.05	-107.05	5,871.03	0.97	-0.16	-0.96
15,730.00	88.21	356.37	9,892.75	5,964.82	-113.04	5,965.89	0.18	-0.18	-0.03



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 702H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 2939.00usft (Pioneer 84)
Site:	Hambone Federal Com	MD Reference:	RKB @ 2939.00usft (Pioneer 84)
Well:	702H	North Reference:	Grid
Wellbore:	OH / 66456	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
15,825.00	88.22	355.63	9,895.71	6,059.54	-119.66	6,060.71	0.78	0.01	-0.78
15,920.00	88.10	355.75	9,898.76	6,154.23	-126.80	6,155.50	0.18	-0.13	0.13
16,015.00	87.89	355.69	9,902.09	6,248.90	-133.88	6,250.29	0.23	-0.22	-0.06
16,110.00	86.91	356.01	9,906.40	6,343.55	-140.75	6,345.04	1.09	-1.03	0.34
16,201.00	86.47	356.73	9,911.65	6,434.22	-146.50	6,435.80	0.93	-0.48	0.79
16,297.00	89.89	358.56	9,914.70	6,530.07	-150.44	6,531.70	4.04	3.56	1.91
16,393.00	88.57	356.45	9,915.99	6,625.96	-154.62	6,627.65	2.59	-1.38	-2.20
16,488.00	89.41	356.47	9,917.66	6,720.77	-160.49	6,722.54	0.88	0.88	0.02
16,583.00	88.62	356.33	9,919.30	6,815.57	-166.45	6,817.43	0.84	-0.83	-0.15
16,679.00	88.68	358.70	9,921.56	6,911.44	-170.61	6,913.37	2.47	0.06	2.47
16,774.00	86.84	358.13	9,925.27	7,006.33	-173.24	7,008.28	2.03	-1.94	-0.60
16,869.00	88.15	0.06	9,929.42	7,101.22	-174.74	7,103.19	2.45	1.38	2.03
16,964.00	89.09	0.56	9,931.71	7,196.19	-174.22	7,198.13	1.12	0.99	0.53
17,059.00	90.51	359.54	9,932.04	7,291.18	-174.14	7,293.11	1.84	1.49	-1.07
17,153.00	91.19	359.46	9,930.65	7,385.17	-174.96	7,387.10	0.73	0.72	-0.09
17,247.00	92.22	359.68	9,927.85	7,479.12	-175.66	7,481.05	1.12	1.10	0.23
17,342.00	92.19	358.93	9,924.20	7,574.05	-176.82	7,575.98	0.79	-0.03	-0.79
17,437.00	92.13	359.34	9,920.62	7,668.97	-178.25	7,670.91	0.44	-0.06	0.43
17,532.00	91.74	359.12	9,917.41	7,763.90	-179.52	7,765.86	0.47	-0.41	-0.23
17,627.00	92.05	359.28	9,914.27	7,858.84	-180.85	7,860.80	0.37	0.33	0.17
17,722.00	88.56	0.46	9,913.76	7,953.83	-181.07	7,955.77	3.88	-3.67	1.24
17,817.00	87.13	0.13	9,917.33	8,048.75	-180.58	8,050.68	1.54	-1.51	-0.35
17,911.00	87.52	0.55	9,921.72	8,142.65	-180.02	8,144.55	0.61	0.41	0.45
18,007.00	87.37	0.13	9,926.00	8,238.55	-179.45	8,240.43	0.46	-0.16	-0.44
18,102.00	88.45	0.58	9,929.47	8,333.49	-178.86	8,335.34	1.23	1.14	0.47
18,197.00	88.37	1.15	9,932.10	8,428.44	-177.43	8,430.25	0.61	-0.08	0.60
18,291.00	89.11	1.23	9,934.17	8,522.39	-175.48	8,524.16	0.79	0.79	0.09
18,386.00	89.77	0.77	9,935.10	8,617.37	-173.82	8,619.10	0.85	0.69	-0.48
18,480.00	89.53	1.17	9,935.67	8,711.36	-172.23	8,713.04	0.50	-0.26	0.43
18,575.00	89.43	0.90	9,936.53	8,806.34	-170.51	8,807.97	0.30	-0.11	-0.28
18,668.00	89.12	0.42	9,937.71	8,899.33	-169.44	8,900.93	0.61	-0.33	-0.52
18,762.00	90.73	1.09	9,937.83	8,993.31	-168.20	8,994.88	1.86	1.71	0.71
18,857.00	84.28	358.80	9,941.97	9,088.17	-168.29	9,089.72	7.20	-6.79	-2.41
18,952.00	87.81	356.42	9,948.52	9,182.84	-172.24	9,184.44	4.48	3.72	-2.51
19,047.00	89.97	358.26	9,950.36	9,277.71	-176.65	9,279.38	2.99	2.27	1.94
19,142.00	93.49	0.57	9,947.49	9,372.64	-177.62	9,374.31	4.43	3.71	2.43
19,236.00	94.07	1.16	9,941.30	9,466.42	-176.21	9,468.05	0.88	0.62	0.63
19,331.00	92.09	1.35	9,936.19	9,561.26	-174.13	9,562.84	2.09	-2.08	0.20
19,426.00	90.08	1.01	9,934.39	9,656.21	-172.17	9,657.75	2.15	-2.12	-0.36
19,521.00	89.16	0.79	9,935.02	9,751.20	-170.68	9,752.69	1.00	-0.97	-0.23
19,616.00	90.51	0.59	9,935.30	9,846.19	-169.54	9,847.65	1.44	1.42	-0.21
19,711.00	89.70	0.82	9,935.12	9,941.18	-168.37	9,942.61	0.89	-0.85	0.24
19,806.00	89.02	0.94	9,936.18	10,036.16	-166.91	10,037.55	0.73	-0.72	0.13
19,900.00	87.86	0.67	9,938.74	10,130.12	-165.59	10,131.47	1.27	-1.23	-0.29



Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 702H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 2939.00usft (Pioneer 84)
Site:	Hambone Federal Com	MD Reference:	RKB @ 2939.00usft (Pioneer 84)
Well:	702H	North Reference:	Grid
Wellbore:	OH / 66456	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
19,931.00	87.98	0.86	9,939.87	10,161.10	-165.17	10,162.43	0.72	0.39	0.61
Final Phoenix MWD Survey - OH									
19,989.00	87.98	0.86	9,941.91	10,219.05	-164.30	10,220.36	0.00	0.00	0.00
Projection @ TD - OH									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,041.30	9,033.03	-158.97	-80.79	Tie In
9,110.00	9,101.70	-157.29	-80.07	First Phoenix MWD Survey - OH
19,931.00	9,939.87	10,161.10	-165.17	Final Phoenix MWD Survey - OH
19,989.00	9,941.91	10,219.05	-164.30	Projection @ TD - OH

Checked By: _____ Approved By: _____ Date: _____

Well Name: HAMBONE FEDERAL COM	Well Location: T26S / R29E / SEC 8 / SESE / 32.050252 / -104.001478	County or Parish/State: EDDY / NM
Well Number: 702H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM57261	Unit or CA Name:	Unit or CA Number:
US Well Number: 300154681300X1	Well Status: Drilling Well	Operator: COG OPERATING LLC

Subsequent Report

Sundry ID: 2715487

Type of Submission: Subsequent Report	Type of Action: Hydraulic Fracturing
Date Sundry Submitted: 02/13/2023	Time Sundry Submitted: 03:36
Date Operation Actually Began: 06/23/2020	

Actual Procedure: Correction**** 6/23/20 Test 9 5/8" x 5 1/2" annulus to 1500# 6/25/20 Set CBD @ 19,895 and test csg to 9,529psi. Good Test. 11/10/20 – 12/2/20 Perf 10,040' – 19,807'(864 Shots) Frac w/ 24,673,581.9# proppant & 580,912.23 BBL Clean fluid. 1/7/21 – 1/10/21 Drilled out CFPs. Clean down to PBTD @ 20,004'. 1/14/21 Set 2 7/8 6.5# L-80tbg @ 9,233. Packer @9,216. 1/29/21 - Began flowback, testing, and date of first production.

Received by OCD: 4/4/2024 7:39:34 AM

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Well Name: HAMBONE FEDERAL COM	Well Location: T26S / R29E / SEC 8 / SESE / 32.050252 / -104.001478	County or Parish/State: EDDY / NM
Well Number: 702H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM57261	Unit or CA Name:	Unit or CA Number:
US Well Number: 300154681300X1	Well Status: Drilling Well	Operator: COG OPERATING LLC

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: KAYLA ESTRADA	Signed on: FEB 13, 2023 03:36 PM
Name: COG OPERATING LLC	
Title: Regulatory Coordinator	
Street Address: 600 W ILLINOISE AVE	
City: MIDLAND	State: TX
Phone: (432) 688-6837	
Email address: KAYLA.L.ESTRADA@CONOCOPHILLIPS.COM	

Field

Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

BLM Point of Contact

BLM POC Name: JONATHON W SHEPARD	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5752345972	BLM POC Email Address: jshepard@blm.gov
Disposition: Accepted	Disposition Date: 02/23/2023
Signature: Jonathon Shepard	

Submit To Appropriate District Office Two Copies 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 and Natural Resources Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505				Form C-105 Revised April 3, 2017			
1. WELL API NO. 30-015-46813										
2. Type of Lease ☐ STATE ☐ FEE ☒ FED/INDIAN										
3. State Oil & Gas Lease No.										
WELL COMPLETION OR RECOMPLETION REPORT AND LOG										
4. Reason for filing: ☒ COMPLETION REPORT (Fill in boxes #1 through #31 for State and Fee wells only) ☐ C-144 CLOSURE ATTACHMENT (Fill in boxes #1 through #9, #15 Date Rig Released and #32 and/or #33; attach this and the plat to the C-144 closure report in accordance with 19.15.17.13.K NMAC)							5. Lease Name or Unit Agreement Name Hambone Federal Com			
							6. Well Number: 702H			
7. Type of Completion: ☒ NEW WELL ☐ WORKOVER ☐ DEEPENING ☐ PLUGBACK ☐ DIFFERENT RESERVOIR ☐ OTHER										
8. Name of Operator COG Operating LLC							9. OGRID 229137			
10. Address of Operator 600 W Illinois Ave Midland, Tx, 79701							11. Pool name or Wildcat Purple Sage; Wolfcamp (gas)			
12. Location	Unit Ltr	Section	Township	Range	Lot	Feet from the	N/S Line	Feet from the	E/W Line	County
Surface:	P	8	26-S	29-E		222	South	1198	East	Eddy
BH:	1	5	26-S	29-E		205	North	1287	East	Eddy
13. Date Spudded 3/18/20	14. Date T.D. Reached 5/17/20	15. Date Rig Released 5/19/20			16. Date Completed (Ready to Produce) 1/29/21			17. Elevations (DF and RKB, RT, GR, etc.) 2914'		
18. Total Measured Depth of Well 20046'			19. Plug Back Measured Depth 20004'			20. Was Directional Survey Made? Y		21. Type Electric and Other Logs Run CNL		
22. Producing Interval(s), of this completion - Top, Bottom, Name Wolfcamp										
23. CASING RECORD (Report all strings set in well)										
CASING SIZE		WEIGHT LB./FT.		DEPTH SET		HOLE SIZE		CEMENTING RECORD		AMOUNT PULLED
13.375"		54.5#		357'		17.5"		425 sx		
10.75"		45.5#		2898'		12.25"		625 sx		
7.625"		29.7#		9171'		9.875"		890 sx		
5.5"		20#		14947'		6.75"		0 sx		
5.5"		20#		20031'		6.75"		1330 sx		
24. LINER RECORD							25. TUBING RECORD			
SIZE	TOP		BOTTOM		SACKS CEMENT	SCREEN		SIZE	DEPTH SET	PACKER SET
								2.875	9233	9216
26. Perforation record (interval, size, and number) Perf 10,040' – 19,807'(864 Shots)							27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC. I			
							DEPTH INTERVAL		AMOUNT AND KIND MATERIAL USED	
							10,040' – 19,807'		Acidize w/ 0 gal 7 1/2% ; Frac w/ 24,673,581.9# proppant & 580,912.23 gal fluid	
28. PRODUCTION										
Date First Production 1/29/21		Production Method (Flowing, gas lift, pumping - Size and type pump) Gas Lift					Well Status (Prod. or Shut-in) Producing			
Date of Test 1/29/21	Hours Tested 24hrs	Choke Size 6/64	Prod'n For Test Period		Oil - Bbl 620	Gas - MCF 1964	Water - Bbl. 4640		Gas - Oil Ratio 3168	
Flow Tubing Press. 2000#	Casing Pressure 1825#	Calculated 24-Hour Rate	Oil - Bbl. 620		Gas – MCF 1964	Water - Bbl. 4640		Oil Gravity - API - (Corr.) 44.2		
29. Disposition of Gas (Sold, used for fuel, vented, etc.) Sold							30. Test Witnessed By			
31. List Attachments Completion Package with C102										
32. If a temporary pit was used at the well, attach a plat with the location of the temporary pit.							33. Rig Release Date:			
34. If an on-site burial was used at the well, report the exact location of the on-site burial:										
Latitude					Longitude			NAD83		

I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature *Kayla Estrada*Printed
Name Kayla Estrada

Title Regulatory Coordinator

Date 2/14/23

E-mail Address kayla.l.estrada@conocophillips.com

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well and not later than 60 days after completion of closure. When submitted as a completion report, this shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, items 11, 12 and 26-31 shall be reported for each zone.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico		Northwestern New Mexico	
T. RSLR		T. Canyon	T. Ojo Alamo
T. Salt	411	T. Strawn	T. Kirtland
B. Salt	2596	T. Atoka	T. Fruitland
T. LMAR	2829	T. Miss	T. Pictured Cliffs
T. BLCN	2863	T. Devonian	T. Cliff House
T. CYCN	3643	T. Silurian	T. Menefee
T. BYCN	6361	T. Montoya	T. Point Lookout
T. BSPG	6580	T. Simpson	T. Mancos
T. BS1S	7491	T. McKee	T. Gallup
T. BS2S	8209	T. Ellenburger	Base Greenhorn
T. BS3C	9377	T. Gr. Wash	T. Dakota
T. WFMP	9786	T. Delaware Sand	T. Morrison

OIL OR GAS SANDS OR ZONES

No. 1, from.....to.....

No. 3, from.....to.....

No. 2, from.....to.....

No. 4, from.....to.....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

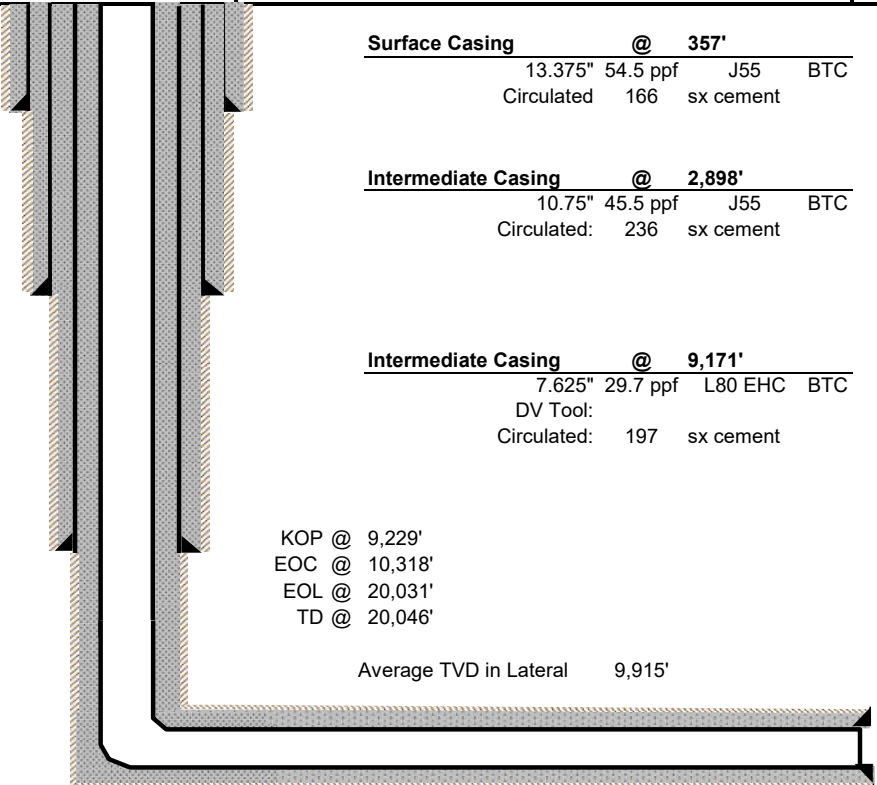
No. 1, from.....to.....feet.....

No. 2, from.....to.....feet.....

No. 3, from.....to.....feet.....

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness In Feet	Lithology	From	To	Thickness In Feet	Lithology

		CURRENT WELL SKETCH							
API: 30-015-46813 SPUD: 3/18/2020 FRR: 5/19/2020 RIG: Pioneer 84		Hambone Federal Com 702H Purple Sage; Wolfcamp Eddy County		Sec 8 T/B 26S R/Svy 29E SHL: 222' FSL & 1,198' FEL BHL: 205' FNL & 1,287' FEL (est.) Sec 5 T/B 26S R/Svy 29E GL: 2,914' KB: 2,939' ZERO: 25'		HOLE SIZE	MW	BHST	Evaluation
		Surface Casing @ 357' 13.375" 54.5 ppf J55 BTC Circulated 166 sx cement		17.5"	8.4 (ppg)		No Logs		
		Intermediate Casing @ 2,898' 10.75" 45.5 ppf J55 BTC Circulated: 236 sx cement		12.25"	10 (ppg)		No Logs		
		Intermediate Casing @ 9,171' 7.625" 29.7 ppf L80 EHC BTC DV Tool: Circulated: 197 sx cement		9.875"	9.3 (ppg)		No Logs		
		KOP @ 9,229' EOC @ 10,318' EOL @ 20,031' TD @ 20,046' Average TVD in Lateral 9,915'		6.75"	11.5 (ppg)	163°F (est.)	Mud and Cased-Hole logs		
Old Hole 5.5" 20#, P110 CY TLW Left in Hole TOF: 9,238' Btm of Fish: 14,929' Whipstock: 9,237' Old Hole TD: 19,989'		Production Casing @ 20,031' 5.5" 20 ppf P110 RY CDCHTQ 5.5" 20 ppf P110 CY TLW PBTD (LC) 19,981' 5.5" Casing X/O 9,109' X/O, MJ Not Installed Floatation Collar: 9,107' Circulated: 305 sx cement		Notes: Wet Shoe 0' - 9,131' 9,131' - 20,031'					
Updated by T. Hall Date: 1/19/2023									

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

ACKNOWLEDGMENTS

Action 329886

ACKNOWLEDGMENTS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 329886
	Action Type: [C-104] Completion Packet (C-104C)

ACKNOWLEDGMENTS

☒	I hereby certify that the required Water Use Report has been, or will be, submitted for this wells completion.
☒	I hereby certify that the required FracFocus disclosure has been, or will be, submitted for this wells completion.

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1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 329886

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 329886
	Action Type: [C-104] Completion Packet (C-104C)

CONDITIONS

Created By	Condition	Condition Date
plmartinez	None	1/21/2025