

District I
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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
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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

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EMERALD-OCD ARTESIA

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

☒ AMENDED REPORT

As-Drilled.

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-43620	² Pool Code 96718	³ Pool Name Loco Hills, Aloneta-Yeso
⁴ Property Code 313900	⁵ Property Name CHIMAY 6 FEDERAL COM	⁶ Well Number 15H
⁷ OGRID NO. 328947	⁸ Operator Name SPUR ENERGY PARTNERS LLC	⁹ Elevation 3685'

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
I	1	17S	29E		2310	SOUTH	10	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
I	6	17S	30E		2274	SOUTH	120	EAST	EDDY

¹² Dedicated Acres 157.17	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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 GEODETIC DATA NAD 83 GRID - NM EAST SURFACE LOCATION (SL) N: 677697.2 - E: 637643.4 LAT: 32.8626189° N LONG: 104.0196858° W LAT: 32°51'45.4276" N LONG: 104°01'10.8691" W KICK OFF POINT (KOP) 2293'-FSL/268'-FEL (SEC.1) N: 677680.9 - E: 637385.1 LAT: 32.8625762° N LONG: 104.0205271° W LAT: 32°51'45.2742" N LONG: 104°01'13.8977" W MD=3,438.00/TVD=3418.54 FIRST TAKE POINT (FTP) 2295'-FSL/283'-FWL (SEC.6) N: 677683.7 - E: 637935.9 LAT: 32.8625793° N LONG: 104.0187335° W LAT: 32°51'45.2855" N LONG: 104°01'07.4406" W MD=4,660.00/TVD=4413.46				CORNER DATA NAD 83 GRID - NM EAST A: FOUND BRASS CAP "1914" N 675386.0 - E 632379.4 B: FOUND BRASS CAP "1914" N 678025.2 - E 632377.9 C: FOUND BRASS CAP "1916" N 680663.6 - E 632375.5 D: FOUND BRASS CAP "1914" N 680666.0 - E 635014.9 E: FOUND BRASS CAP "1914" N 680665.9 - E 637654.6 F: FOUND BRASS CAP "1916" N 680673.4 - E 640190.1 G: FOUND BRASS CAP "1916" N 680680.6 - E 642829.7 H: CALCULATED CORNER N 678059.3 - E 642838.9 I: FOUND BRASS CAP "1916" N 675419.9 - E 642848.2 J: FOUND BRASS CAP "1916" N 675403.7 - E 640208.3 K: FOUND BRASS CAP "1914" N 675387.8 - E 637653.6 L: FOUND BRASS CAP "1914" N 675390.1 - E 635023.9 M: FOUND BRASS CAP "1914" N 678025.5 - E 637653.4 CALCULATED POINTS 1: N 678025.4 - E 636336.4 2: N 676707.9 - E 636337.6 3: N 676706.7 - E 637653.5 4: N 676739.6 - E 642843.6			
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. Signature: Sarah Chapman Date: 2/18/20 Printed Name: Sarah Chapman E-mail Address: schapman@spurexllc.com				¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. 8-30-2017 Date of Survey Signature and Seal of Professional Surveyor 19680 Certificate Number 2/12/2020 AS-DRILL			

Job No.: LS1708551AD

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FEB 19 2020
EMNRD-OCDAARTESIA

Intent ☐ As Drilled ☒

API # 30-015-43620			
Operator Name: SPUR ENERGY PARTNERS, LLC		Property Name: CHIMAY 6 FEDERAL COM	Well Number 15H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
I	1	17S	29E		2293	SOUTH	268	EAST	EDDY
Latitude					Longitude				NAD
32.8625762					-104.0205271				NAD83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
	6	17S	29E	6	2295	SOUTH	283	WEST	EDDY
Latitude					Longitude				NAD
32.8625793					-104.0187335				NAD83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
J	6	17S	29E		2297	SOUTH	1696	EAST	EDDY
Latitude					Longitude				NAD
32.8626149					-104.0082837				NAD83

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

Is this well an infill well? ☐

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



PHOENIX
TECHNOLOGY SERVICES

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FEB 19 2020

EMNRD-OCD ARTESIA

COG Operating LLC

**Eddy County, NM (NAD83 NME)
Chimay 6 Federal Com
15H**

OH / 62

**A Certified Directional Survey
requested as required by NMOCD
Rule 19.15.16.14 NMAC**

Survey: Phoenix MWD Surveys

Standard Survey Report

10 June, 2018



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 15H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	RKB @ 3702.00usft (Double K 7)
Site:	Chimay 6 Federal Com	MD Reference:	RKB @ 3702.00usft (Double K 7)
Well:	15H	North Reference:	Grid
Wellbore:	OH / 62	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Double K7)	Database:	USA Compass

Project	Eddy County, NM (NAD83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Chimay 6 Federal Com

Site Position:		Northing:	677,697.20 usft	Latitude:	32° 51' 45.42763 N
From:	Map	Easting:	637,643.40 usft	Longitude:	104° 1' 10.86914 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.17 °

Well	15H					
Well Position	+N/-S	0.00 usft	Northing:	677,697.20 usft	Latitude:	32° 51' 45.42763 N
	+E/-W	0.00 usft	Easting:	637,643.40 usft	Longitude:	104° 1' 10.86914 W
Position Uncertainty	0.00 usft		Wellhead Elevation:	usft	Ground Level:	3,685.00 usft

Wellbore OH / 62

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	5/31/2018	7.52	60.65	48,209.75031062

Design Surveys (Double K7)

Audit Notes:

Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
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Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	89.87

Survey Program Date 6/10/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
50.00	1,165.00	VES Gyro Surveys (OH / 62)	VES-ISCWSA-GYRO-3	Biaxial Semi-Cont. Gyro
1,301.00	9,450.00	Phoenix MWD Surveys (OH / 62)	MWD+HDGM	OWSG Rev.2 MWD + HDGM

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)
1,165.00	1.05	88.11	1,164.94	2.06	9.14	9.14	0.00	0.00	0.00
Tie In									
1,301.00	1.82	224.41	1,300.92	0.56	8.87	8.88	1.97	0.57	100.22
First Phoenix MWD Survey									
1,490.00	4.63	228.34	1,489.60	-6.66	1.07	1.06	1.49	1.49	2.08
1,616.00	5.07	223.30	1,615.15	-14.09	-6.54	-6.58	0.49	0.35	-4.00
1,742.00	7.84	251.86	1,740.37	-20.82	-18.53	-18.58	3.30	2.20	22.67
1,931.00	11.61	289.80	1,926.80	-18.39	-48.72	-48.76	3.83	1.99	20.07
2,057.00	8.98	279.93	2,050.77	-12.40	-70.34	-70.37	2.51	-2.09	-7.83

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Well:	15H	North Reference:	Grid
Wellbore:	OH / 62	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Double K7)	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)
2,182.00	8.11	270.84	2,174.39	-10.58	-88.77	-88.79	1.28	-0.70	-7.27
2,309.00	7.08	269.07	2,300.27	-10.58	-105.55	-105.57	0.83	-0.81	-1.39
2,435.00	6.56	268.60	2,425.38	-10.88	-120.51	-120.53	0.42	-0.41	-0.37
2,558.00	6.37	269.19	2,547.60	-11.15	-134.36	-134.38	0.16	-0.15	0.48
2,684.00	8.06	261.98	2,672.60	-12.48	-150.09	-150.12	1.52	1.34	-5.72
2,810.00	7.84	260.32	2,797.39	-15.16	-167.31	-167.34	0.25	-0.17	-1.32
2,935.00	7.92	259.58	2,921.21	-18.15	-184.18	-184.23	0.10	0.06	-0.59
3,061.00	9.57	268.21	3,045.74	-20.05	-203.19	-203.24	1.67	1.31	6.85
3,187.00	9.48	271.47	3,170.01	-20.11	-224.04	-224.08	0.43	-0.07	2.59
3,313.00	8.70	277.31	3,294.42	-18.63	-243.86	-243.90	0.96	-0.62	4.63
3,438.00	4.73	282.92	3,418.54	-16.27	-258.27	-258.30	3.22	-3.18	4.49
3,565.00	0.33	263.83	3,545.39	-15.14	-263.74	-263.77	3.48	-3.46	-15.03
3,628.00	1.63	85.74	3,608.38	-15.09	-263.02	-263.06	3.11	2.06	-282.68
3,659.00	2.44	82.42	3,639.36	-14.97	-261.93	-261.96	2.64	2.61	-10.71
3,691.00	4.41	81.14	3,671.30	-14.70	-260.04	-260.07	6.16	6.16	-4.00
3,723.00	7.30	79.31	3,703.13	-14.13	-256.82	-256.86	9.05	9.03	-5.72
3,754.00	10.81	79.36	3,733.74	-13.23	-252.03	-252.06	11.32	11.32	0.16
3,785.00	14.24	80.49	3,764.00	-12.06	-245.41	-245.44	11.09	11.06	3.65
3,817.00	17.80	83.00	3,794.75	-10.81	-236.67	-236.70	11.33	11.13	7.84
3,849.00	21.32	85.50	3,824.90	-9.76	-226.01	-226.04	11.30	11.00	7.81
3,880.00	24.53	89.11	3,853.45	-9.22	-213.96	-213.98	11.30	10.35	11.65
3,911.00	25.96	90.85	3,881.49	-9.22	-200.74	-200.76	5.20	4.61	5.61
3,943.00	26.66	91.75	3,910.17	-9.54	-186.56	-186.58	2.52	2.19	2.81
3,974.00	27.59	92.32	3,937.77	-10.04	-172.44	-172.46	3.11	3.00	1.84
4,006.00	28.66	92.94	3,965.99	-10.74	-157.37	-157.39	3.47	3.34	1.94
4,038.00	29.65	92.93	3,993.93	-11.54	-141.80	-141.82	3.09	3.09	-0.03
4,069.00	30.59	93.09	4,020.75	-12.35	-126.26	-126.29	3.04	3.03	0.52
4,101.00	30.71	92.94	4,048.28	-13.21	-109.97	-110.00	0.44	0.38	-0.47
4,132.00	31.04	92.39	4,074.88	-13.95	-94.08	-94.11	1.40	1.06	-1.77
4,163.00	32.52	91.66	4,101.23	-14.53	-77.77	-77.80	4.93	4.77	-2.35
4,195.00	34.11	91.52	4,127.97	-15.01	-60.20	-60.23	4.97	4.97	-0.44
4,227.00	35.68	91.31	4,154.22	-15.46	-41.90	-41.93	4.92	4.91	-0.66
4,258.00	36.76	91.06	4,179.23	-15.84	-23.58	-23.62	3.52	3.48	-0.81
4,289.00	37.23	90.34	4,203.99	-16.07	-4.93	-4.97	2.06	1.52	-2.32
4,320.00	38.90	89.02	4,228.39	-15.96	14.18	14.14	5.99	5.39	-4.26
4,352.00	41.89	88.36	4,252.76	-15.48	34.91	34.87	9.44	9.34	-2.06
4,384.00	45.01	87.48	4,275.99	-14.68	56.90	56.86	9.93	9.75	-2.75
4,416.00	48.59	87.72	4,297.89	-13.70	80.20	80.17	11.20	11.19	0.75
4,447.00	52.44	88.74	4,317.60	-12.97	104.11	104.08	12.68	12.42	3.29
4,479.00	56.14	90.04	4,336.28	-12.70	130.09	130.06	12.02	11.56	4.06
4,511.00	59.47	90.63	4,353.32	-12.86	157.16	157.13	10.52	10.41	1.84
4,542.00	61.75	90.35	4,368.54	-13.09	184.17	184.14	7.40	7.35	-0.90
4,574.00	63.87	89.89	4,383.16	-13.15	212.63	212.60	6.75	6.63	-1.44

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 15H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	RKB @ 3702.00usft (Double K 7)
Site:	Chimay 6 Federal Com	MD Reference:	RKB @ 3702.00usft (Double K 7)
Well:	15H	North Reference:	Grid
Wellbore:	OH / 62	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Double K7)	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)
4,606.00	67.76	89.99	4,396.27	-13.12	241.82	241.79	12.16	12.16	0.31
4,637.00	71.57	90.57	4,407.04	-13.26	270.88	270.85	12.41	12.29	1.87
4,668.00	75.99	90.64	4,415.69	-13.58	300.64	300.60	14.26	14.26	0.23
4,700.00	79.59	91.02	4,422.46	-14.03	331.90	331.87	11.31	11.25	1.19
4,732.00	81.81	91.62	4,427.63	-14.76	363.47	363.44	7.18	6.94	1.88
4,763.00	82.88	91.42	4,431.76	-15.57	394.19	394.15	3.51	3.45	-0.65
4,794.00	83.44	90.91	4,435.45	-16.20	424.96	424.92	2.44	1.81	-1.65
4,825.00	84.60	90.76	4,438.68	-16.65	455.79	455.75	3.77	3.74	-0.48
4,857.00	85.76	90.23	4,441.37	-16.92	487.67	487.63	3.98	3.63	-1.66
4,888.00	86.31	90.03	4,443.51	-16.99	518.60	518.56	1.89	1.77	-0.65
4,951.00	88.73	88.75	4,446.24	-16.32	581.53	581.49	4.34	3.84	-2.03
5,014.00	89.39	88.61	4,447.27	-14.87	644.50	644.47	1.07	1.05	-0.22
5,077.00	90.12	88.54	4,447.54	-13.31	707.48	707.45	1.16	1.16	-0.11
5,140.00	90.84	88.52	4,447.02	-11.69	770.46	770.43	1.14	1.14	-0.03
5,203.00	91.21	87.89	4,445.89	-9.72	833.42	833.39	1.16	0.59	-1.00
5,266.00	91.98	89.01	4,444.14	-8.01	896.37	896.35	2.16	1.22	1.78
5,329.00	91.28	91.31	4,442.34	-8.19	959.34	959.32	3.81	-1.11	3.65
5,392.00	89.01	93.09	4,442.18	-10.61	1,022.28	1,022.26	4.58	-3.60	2.83
5,456.00	88.58	93.53	4,443.53	-14.30	1,086.16	1,086.13	0.96	-0.67	0.69
5,519.00	88.61	94.41	4,445.07	-18.66	1,148.99	1,148.95	1.40	0.05	1.40
5,582.00	88.92	94.03	4,446.43	-23.30	1,211.81	1,211.75	0.78	0.49	-0.60
5,645.00	87.27	92.63	4,448.53	-26.95	1,274.66	1,274.60	3.43	-2.62	-2.22
5,708.00	87.22	90.23	4,451.55	-28.52	1,337.56	1,337.50	3.81	-0.08	-3.81
5,770.00	88.28	89.40	4,453.99	-28.32	1,399.52	1,399.45	2.17	1.71	-1.34
5,833.00	89.44	88.18	4,455.24	-26.99	1,462.49	1,462.42	2.67	1.84	-1.94
5,897.00	89.85	88.08	4,455.64	-24.91	1,526.45	1,526.39	0.66	0.64	-0.16
5,960.00	90.58	87.51	4,455.40	-22.48	1,589.40	1,589.35	1.47	1.16	-0.90
6,022.00	89.84	86.82	4,455.18	-19.42	1,651.33	1,651.28	1.63	-1.19	-1.11
6,086.00	89.39	87.48	4,455.61	-16.23	1,715.24	1,715.20	1.25	-0.70	1.03
6,149.00	90.02	87.68	4,455.93	-13.57	1,778.19	1,778.15	1.05	1.00	0.32
6,212.00	90.36	87.36	4,455.72	-10.85	1,841.13	1,841.10	0.74	0.54	-0.51
6,275.00	90.62	88.32	4,455.18	-8.47	1,904.08	1,904.06	1.58	0.41	1.52
6,338.00	89.53	90.28	4,455.10	-7.70	1,967.07	1,967.05	3.56	-1.73	3.11
6,402.00	89.02	90.07	4,455.91	-7.90	2,031.07	2,031.04	0.86	-0.80	-0.33
6,476.00	89.06	90.81	4,457.15	-8.47	2,105.05	2,105.03	1.00	0.05	1.00
6,539.00	89.51	90.86	4,457.94	-9.39	2,168.04	2,168.01	0.72	0.71	0.08
6,601.00	89.30	90.19	4,458.58	-9.95	2,230.03	2,230.01	1.13	-0.34	-1.08
6,664.00	88.90	90.13	4,459.57	-10.13	2,293.03	2,293.00	0.64	-0.63	-0.10
6,727.00	88.47	89.29	4,461.01	-9.81	2,356.01	2,355.98	1.50	-0.68	-1.33
6,789.00	85.23	88.93	4,464.42	-8.85	2,417.90	2,417.87	5.26	-5.23	-0.58
6,853.00	85.10	88.39	4,469.82	-7.36	2,481.65	2,481.63	0.86	-0.20	-0.84
6,916.00	88.21	88.22	4,473.49	-5.50	2,544.51	2,544.49	4.94	4.94	-0.27
6,979.00	89.88	88.19	4,474.54	-3.52	2,607.47	2,607.45	2.65	2.65	-0.05
7,042.00	89.61	89.22	4,474.82	-2.10	2,670.45	2,670.44	1.69	-0.43	1.63

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 15H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	RKB @ 3702.00usft (Double K 7)
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Well:	15H	North Reference:	Grid
Wellbore:	OH / 62	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Double K7)	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)
7,105.00	88.55	89.52	4,475.83	-1.41	2,733.44	2,733.43	1.75	-1.68	0.48
7,168.00	87.90	89.68	4,477.78	-0.97	2,796.41	2,796.40	1.06	-1.03	0.25
7,231.00	87.47	89.87	4,480.33	-0.72	2,859.35	2,859.35	0.75	-0.68	0.30
7,294.00	89.01	90.29	4,482.26	-0.81	2,922.32	2,922.31	2.53	2.44	0.67
7,357.00	88.89	90.27	4,483.42	-1.12	2,985.31	2,985.30	0.19	-0.19	-0.03
7,420.00	88.47	90.14	4,484.87	-1.34	3,048.29	3,048.28	0.70	-0.67	-0.21
7,484.00	89.87	89.29	4,485.80	-1.02	3,112.28	3,112.27	2.56	2.19	-1.33
7,547.00	89.59	89.61	4,486.09	-0.42	3,175.28	3,175.27	0.67	-0.44	0.51
7,611.00	88.76	89.10	4,487.02	0.30	3,239.27	3,239.26	1.52	-1.30	-0.80
7,674.00	89.89	88.20	4,487.76	1.78	3,302.25	3,302.24	2.29	1.79	-1.43
7,736.00	88.10	88.74	4,488.84	3.44	3,364.21	3,364.21	3.02	-2.89	0.87
7,799.00	89.79	86.90	4,490.00	5.84	3,427.15	3,427.15	3.97	2.68	-2.92
7,863.00	88.96	87.79	4,490.70	8.80	3,491.08	3,491.09	1.90	-1.30	1.39
7,925.00	87.56	87.87	4,492.59	11.15	3,553.00	3,553.02	2.26	-2.26	0.13
7,988.00	88.50	87.38	4,494.75	13.76	3,615.91	3,615.93	1.68	1.49	-0.78
8,052.00	89.04	86.16	4,496.13	17.36	3,679.79	3,679.82	2.08	0.84	-1.91
8,115.00	87.89	85.24	4,497.81	22.08	3,742.59	3,742.63	2.34	-1.83	-1.46
8,147.00	87.04	85.21	4,499.23	24.74	3,774.45	3,774.49	2.66	-2.66	-0.09
8,179.00	87.68	86.75	4,500.70	26.99	3,806.33	3,806.38	5.21	2.00	4.81
8,210.00	87.68	88.70	4,501.96	28.21	3,837.28	3,837.34	6.29	0.00	6.29
8,242.00	88.36	90.70	4,503.06	28.38	3,869.26	3,869.32	6.60	2.13	6.25
8,273.00	89.55	90.79	4,503.63	27.98	3,900.25	3,900.31	3.85	3.84	0.29
8,305.00	90.18	90.87	4,503.70	27.52	3,932.25	3,932.30	1.98	1.97	0.25
8,367.00	91.09	91.18	4,503.02	26.41	3,994.23	3,994.28	1.55	1.47	0.50
8,431.00	90.85	91.42	4,501.93	24.95	4,058.21	4,058.25	0.53	-0.38	0.38
8,493.00	90.68	92.26	4,501.11	22.96	4,120.17	4,120.21	1.38	-0.27	1.35
8,556.00	89.68	92.20	4,500.91	20.51	4,183.12	4,183.16	1.59	-1.59	-0.10
8,620.00	90.53	91.74	4,500.79	18.31	4,247.08	4,247.11	1.51	1.33	-0.72
8,683.00	88.92	91.75	4,501.09	16.39	4,310.05	4,310.08	2.56	-2.56	0.02
8,747.00	88.19	91.34	4,502.71	14.67	4,374.01	4,374.03	1.31	-1.14	-0.64
8,817.00	87.84	91.07	4,505.13	13.20	4,443.95	4,443.97	0.63	-0.50	-0.39
8,880.00	88.64	90.47	4,507.07	12.35	4,506.91	4,506.93	1.59	1.27	-0.95
8,943.00	87.73	92.06	4,509.06	10.96	4,569.86	4,569.88	2.91	-1.44	2.52
9,006.00	87.13	92.01	4,511.89	8.73	4,632.76	4,632.77	0.96	-0.95	-0.08
9,069.00	88.39	92.29	4,514.35	6.37	4,695.67	4,695.67	2.05	2.00	0.44
9,132.00	88.88	91.67	4,515.85	4.19	4,758.61	4,758.61	1.25	0.78	-0.98
9,195.00	89.33	91.90	4,516.83	2.23	4,821.57	4,821.56	0.80	0.71	0.37
9,258.00	89.99	91.34	4,517.21	0.45	4,884.54	4,884.53	1.37	1.05	-0.89
9,322.00	90.81	91.91	4,516.76	-1.37	4,948.52	4,948.50	1.56	1.28	0.89
9,384.00	90.50	91.71	4,516.05	-3.33	5,010.48	5,010.46	0.60	-0.50	-0.32
9,403.00	89.27	91.15	4,516.09	-3.80	5,029.48	5,029.45	7.11	-6.47	-2.95
Final Phoenix MWD Survey									
9,450.00	89.27	91.15	4,516.69	-4.74	5,076.46	5,076.44	0.00	0.00	0.00

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 15H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	RKB @ 3702.00usft (Double K 7)
Site:	Chimay 6 Federal Com	MD Reference:	RKB @ 3702.00usft (Double K 7)
Well:	15H	North Reference:	Grid
Wellbore:	OH / 62	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Double K7)	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)
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Projection to TD

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,165.00	1,164.94	2.06	9.14	Tie In
1,301.00	1,300.92	0.56	8.87	First Phoenix MWD Survey
9,403.00	4,516.09	-3.80	5,029.48	Final Phoenix MWD Survey
9,450.00	4,516.69	-4.74	5,076.46	Projection to TD

API #	30-015-43620	CHIMAY 6 FEDERAL COM 15H	County, ST	Eddy, NM
Operator	Spur Energy Partners, LLC		Sec-Twn-Rng	1-17S-29E
Field	LOCO HILLS; GLORIETA YESO		Footage	2310' FSL 10' FEL
Spud Date	5/27/2018		Survey	

GL	3685'
Hole Size	17-1/2"
TOC	Surf
Method	Circ Returns

Csg Depth	379'
Size	13-3/8"
Weight	54.5#
Grade	J-55
Connections	BTC
Cement	surface

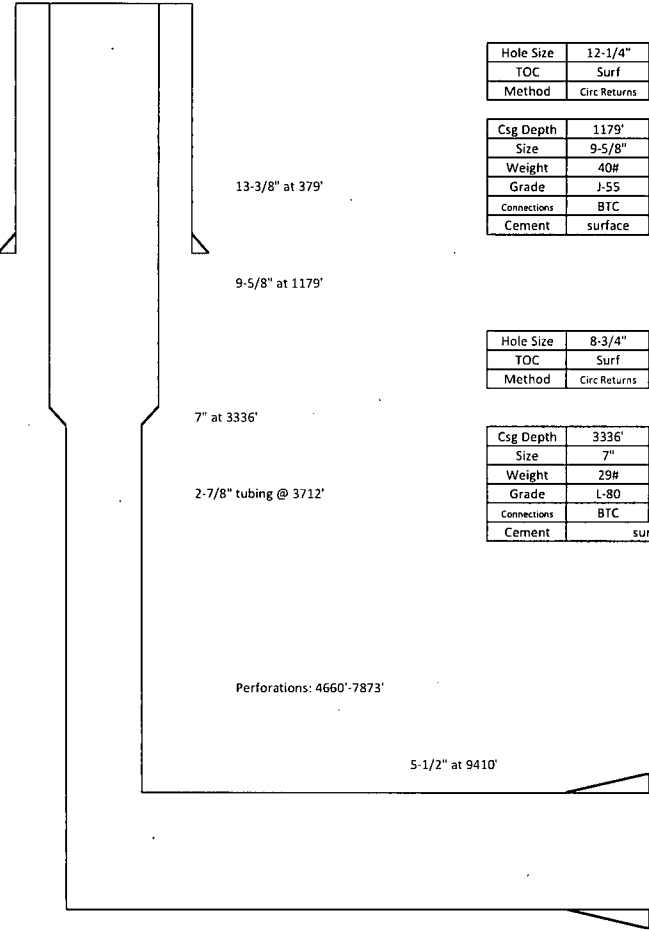
PBD	9433'
TD MD	9450'
TD TVD	4516'

Hole Size	12-1/4"
TOC	Surf
Method	Circ Returns

Csg Depth	1179'
Size	9-5/8"
Weight	40#
Grade	J-55
Connections	BTC
Cement	surface

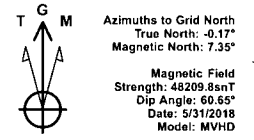
Hole Size	8-3/4"
TOC	Surf
Method	Circ Returns

Csg Depth	3336'	9410'
Size	7"	5-1/2"
Weight	29#	29#
Grade	L-80	L-80
Connections	BTC	BTC
Cement	surface	



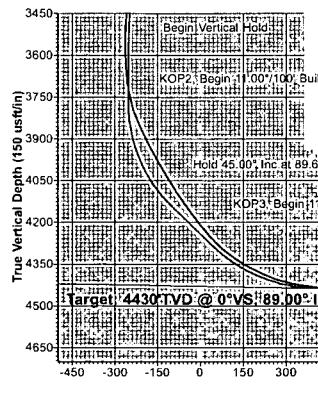
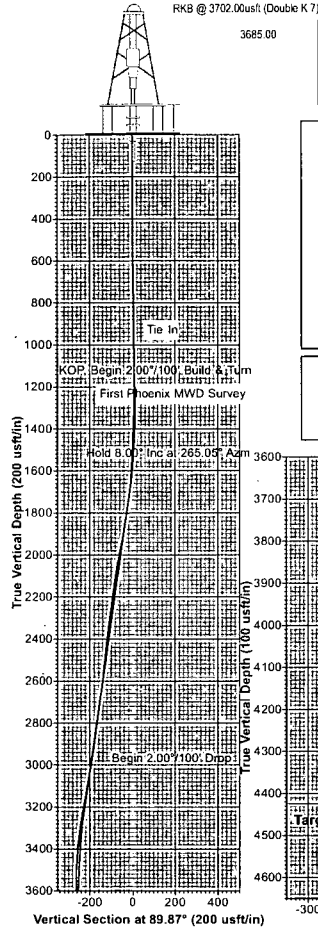


Project: Eddy County, NM (NAD27 NME)
Site: Chimay 6 Federal Corn
Well: 15H
Wellbore: OH / 62808
Design: Plan 2 05-30-18
Rig: Double K 7



Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001
Local Origin: Well 15H, Grid North
Latitude: 32° 51' 45.01269 N
Longitude: 104° 1' 9.03699 W
Grid East: 596464.40
Grid North: 677633.60
Scale Factor: 1.000
Geomagnetic Model: MVHD
Sample Date: 31-May-18
Magnetic Declination: 7.52°
Dip Angle from Horizontal: 60.65°
Magnetic Field Strength: 48209.75034269nT

To convert a Magnetic Direction to a Grid Direction, Add 7.35°
To convert a Magnetic Direction to a True Direction, Add 7.52° East
To convert a True Direction to a Grid Direction, Subtract 0.17°



WELL DETAILS						
				3685.00		
+N-S	+E-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	677633.60	596464.40	32° 51' 45.01269 N	104° 1' 9.03699 W	

SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Qleg	TFace	VSec	Target	Annotation
1	1165.00	1.05	88.11	1164.94	2.06	9.14	0.00	0.00	9.14		Tie In, Hold 1.05° Inc at 88.11° Azm
2	1265.00	1.05	88.11	1264.92	2.12	10.97	0.00	0.00	10.96		KOP2: Begin 2.00°/100° Build & Turn
3	1717.42	8.00	265.05	1716.04	-0.46	-16.31	2.00	177.30	-16.31		Hold 8.00° Inc at 265.05° Azm
4	3228.90	8.00	265.05	3212.81	-18.60	-225.88	0.00	0.00	-225.92		Begin 2.00°/100° Drop
5	3628.89	0.00	0.00	3611.50	-21.00	-253.65	2.00	180.00	-253.70		Begin Vertical Hold
6	3791.89	0.00	0.00	3774.50	-21.00	-253.65	0.00	0.00	-253.70		KOP2: Begin 11.00°/100° Build
7	4200.98	45.00	89.65	4142.81	-20.07	-101.09	11.00	89.65	-101.14		Hold 45.00° Inc at 89.65° Azm
8	4400.98	45.00	89.65	4284.23	-19.20	-40.33	0.00	0.00	-40.28		KOP3: Begin 11.00°/100° Build
9	4800.95	89.00	89.65	4436.71	-17.02	399.51	11.00	0.01	399.47		LP: Hold 89.00° Inc at 89.65° Azm
10	9488.99	89.00	89.65	4518.79	11.32	5086.75	0.00	0.00	5086.76		TD at 9488.99

DESIGN TARGET DETAILS						
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude
BHL - Chimay 6 Federal Corn 15H	4518.79	11.32	5086.75	677644.92	601551.15	32° 51' 44.97100 N

