



COG Operating LLC

**Lea County, NM (NAD27 NME)
Pitchblende Federal Com 19-30
208H**

OH / 66080

Design: Surveys (McVay 8)

Standard Survey Report

27 February, 2020



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 208H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3357.00usft (McVay 8)
Site:	Pitchblende Federal Com 19-30	MD Reference:	RKB @ 3357.00usft (McVay 8)
Well:	208H	North Reference:	Grid
Wellbore:	OH / 66080	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	Database:	USA Compass

Project	Lea 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	Pitchblende Federal Com 19-30		
Site Position:		Northing:	409,281.10 usft
From:	Map	Easting:	789,024.90 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 7' 18.437355 N
		Longitude:	103° 23' 59.139439 W
		Grid Convergence:	0.50 °

Well	208H		
Well Position	+N/-S	0.00 usft	Northing: 409,281.10 usft
	+E/-W	0.00 usft	Easting: 789,024.90 usft
Position Uncertainty	1.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 7' 18.437355 N
		Longitude:	103° 23' 59.139439 W
		Ground Level:	3,331.00 usft

Wellbore	OH / 66080		
Magnetics	Model Name	Sample Date	Declination (°)
	MVHD	2/5/2020	6.52
			Dip Angle (°) 59.73
			Field Strength (nT) 47,678.77587638

Design	Surveys (McVay 8)		
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 (°) 180.15

Survey Program	Date 2/27/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
100.00	11,883.81	SDI - Gyros (OH / 66080)	Scientific Keeper
11,883.81	20,214.00	Gordon MWD Surveys (OH / 66080)	MWD+IFR1+FDIR
			Description
			Scientific Drilling Intl. Standard Wireline Keeper
			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	0.63	132.24	100.00	-0.37	0.41	0.37	0.63	0.63	0.00	
125.00	0.57	128.66	125.00	-0.54	0.61	0.54	0.28	-0.24	-14.32	
150.00	0.61	135.89	150.00	-0.71	0.80	0.71	0.34	0.16	28.92	
175.00	0.55	131.42	174.99	-0.89	0.98	0.89	0.30	-0.24	-17.88	
200.00	0.64	150.50	199.99	-1.09	1.14	1.09	0.87	0.36	76.32	
225.00	0.48	135.52	224.99	-1.28	1.28	1.28	0.86	-0.64	-59.92	
250.00	0.61	161.01	249.99	-1.49	1.40	1.48	1.09	0.52	101.96	
275.00	0.45	150.57	274.99	-1.70	1.49	1.69	0.74	-0.64	-41.76	
300.00	0.34	131.56	299.99	-1.83	1.59	1.83	0.68	-0.44	-76.04	

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 208H
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Site:	Pitchblende Federal Com 19-30	MD Reference:	RKB @ 3357.00usft (McVay 8)
Well:	208H	North Reference:	Grid
Wellbore:	OH / 66080	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	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	0.27	110.01	324.99	-1.90	1.70	1.90	0.53	-0.28	-86.20
350.00	0.33	96.57	349.99	-1.93	1.83	1.92	0.37	0.24	-53.76
375.00	0.35	88.01	374.99	-1.93	1.98	1.93	0.22	0.08	-34.24
400.00	0.43	95.18	399.99	-1.94	2.15	1.94	0.37	0.32	28.68
425.00	0.37	98.00	424.99	-1.96	2.32	1.95	0.25	-0.24	11.28
450.00	0.29	103.12	449.99	-1.99	2.46	1.98	0.34	-0.32	20.48
475.00	0.22	68.46	474.99	-1.98	2.57	1.98	0.66	-0.28	-138.64
500.00	0.20	99.96	499.99	-1.97	2.66	1.97	0.46	-0.08	126.00
525.00	0.21	71.97	524.99	-1.97	2.74	1.96	0.40	0.04	-111.96
550.00	0.13	66.94	549.99	-1.94	2.81	1.93	0.33	-0.32	-20.12
575.00	0.25	21.80	574.99	-1.88	2.86	1.87	0.73	0.48	-180.56
600.00	0.31	21.20	599.98	-1.77	2.90	1.76	0.24	0.24	-2.40
625.00	0.42	18.02	624.98	-1.62	2.96	1.61	0.45	0.44	-12.72
650.00	0.42	23.47	649.98	-1.44	3.02	1.44	0.16	0.00	21.80
675.00	0.42	37.07	674.98	-1.29	3.11	1.28	0.40	0.00	54.40
700.00	0.34	50.56	699.98	-1.17	3.22	1.16	0.48	-0.32	53.96
725.00	0.28	57.54	724.98	-1.09	3.33	1.08	0.28	-0.24	27.92
750.00	0.22	49.52	749.98	-1.02	3.42	1.01	0.28	-0.24	-32.08
775.00	0.25	29.75	774.98	-0.94	3.48	0.94	0.34	0.12	-79.08
800.00	0.33	21.76	799.98	-0.83	3.54	0.82	0.36	0.32	-31.96
825.00	0.41	44.89	824.98	-0.70	3.63	0.69	0.67	0.32	92.52
850.00	0.45	62.86	849.98	-0.59	3.78	0.58	0.56	0.16	71.88
875.00	0.54	63.47	874.98	-0.49	3.97	0.48	0.36	0.36	2.44
900.00	0.54	82.85	899.98	-0.43	4.19	0.42	0.73	0.00	77.52
925.00	0.55	87.65	924.98	-0.41	4.43	0.40	0.19	0.04	19.20
950.00	0.56	89.71	949.98	-0.40	4.67	0.39	0.09	0.04	8.24
975.00	0.56	101.25	974.97	-0.43	4.91	0.41	0.45	0.00	46.16
1,000.00	0.47	111.76	999.97	-0.49	5.13	0.47	0.52	-0.36	42.04
1,025.00	0.39	101.98	1,024.97	-0.54	5.31	0.53	0.43	-0.32	-39.12
1,050.00	0.41	95.59	1,049.97	-0.57	5.48	0.55	0.20	0.08	-25.56
1,075.00	0.42	81.56	1,074.97	-0.56	5.66	0.55	0.41	0.04	-56.12
1,100.00	0.54	94.26	1,099.97	-0.56	5.87	0.54	0.64	0.48	50.80
1,125.00	0.56	94.41	1,124.97	-0.58	6.11	0.56	0.08	0.08	0.60
1,150.00	0.68	112.21	1,149.97	-0.64	6.37	0.63	0.90	0.48	71.20
1,175.00	0.66	99.61	1,174.97	-0.72	6.65	0.71	0.59	-0.08	-50.40
1,200.00	0.71	125.18	1,199.96	-0.84	6.91	0.82	1.23	0.20	102.28
1,225.00	0.59	109.99	1,224.96	-0.97	7.16	0.95	0.84	-0.48	-60.76
1,250.00	0.53	99.16	1,249.96	-1.03	7.40	1.01	0.49	-0.24	-43.32
1,275.00	0.63	101.10	1,274.96	-1.08	7.65	1.06	0.41	0.40	7.76
1,300.00	0.72	106.60	1,299.96	-1.15	7.93	1.13	0.44	0.36	22.00
1,325.00	0.68	114.26	1,324.96	-1.25	8.22	1.23	0.41	-0.16	30.64
1,350.00	0.57	107.17	1,349.96	-1.35	8.47	1.33	0.54	-0.44	-28.36
1,375.00	0.52	99.55	1,374.95	-1.41	8.70	1.38	0.35	-0.20	-30.48

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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	0.63	98.12	1,399.95	-1.45	8.95	1.42	0.44	0.44	-5.72
1,425.00	0.74	100.93	1,424.95	-1.50	9.24	1.47	0.46	0.44	11.24
1,450.00	0.68	118.99	1,449.95	-1.60	9.53	1.57	0.92	-0.24	72.24
1,475.00	0.56	100.01	1,474.95	-1.69	9.78	1.67	0.94	-0.48	-75.92
1,500.00	0.58	87.31	1,499.95	-1.71	10.03	1.68	0.51	0.08	-50.80
1,525.00	0.71	111.84	1,524.95	-1.76	10.30	1.73	1.21	0.52	98.12
1,550.00	0.76	100.75	1,549.94	-1.85	10.61	1.82	0.60	0.20	-44.36
1,575.00	0.66	114.81	1,574.94	-1.94	10.90	1.91	0.80	-0.40	56.24
1,600.00	0.51	114.74	1,599.94	-2.05	11.13	2.02	0.60	-0.60	-0.28
1,625.00	0.58	87.52	1,624.94	-2.09	11.36	2.06	1.06	0.28	-108.88
1,650.00	0.46	96.19	1,649.94	-2.09	11.59	2.06	0.57	-0.48	34.68
1,675.00	0.49	126.67	1,674.94	-2.17	11.77	2.14	1.01	0.12	121.92
1,700.00	0.64	100.35	1,699.94	-2.26	11.99	2.22	1.18	0.60	-105.28
1,725.00	0.61	106.66	1,724.93	-2.32	12.26	2.29	0.30	-0.12	25.24
1,750.00	0.63	123.39	1,749.93	-2.43	12.50	2.40	0.73	0.08	66.92
1,775.00	0.49	117.31	1,774.93	-2.56	12.71	2.52	0.61	-0.56	-24.32
1,800.00	0.54	91.18	1,799.93	-2.61	12.92	2.57	0.95	0.20	-104.52
1,825.00	0.71	103.68	1,824.93	-2.65	13.19	2.61	0.87	0.68	50.00
1,850.00	0.64	121.56	1,849.93	-2.76	13.46	2.72	0.88	-0.28	71.52
1,875.00	0.56	124.51	1,874.93	-2.90	13.68	2.86	0.34	-0.32	11.80
1,900.00	0.46	95.41	1,899.93	-2.98	13.88	2.94	1.10	-0.40	-116.40
1,925.00	0.61	92.65	1,924.92	-2.99	14.11	2.96	0.61	0.60	-11.04
1,950.00	0.62	110.05	1,949.92	-3.05	14.37	3.01	0.75	0.04	69.60
1,975.00	0.47	113.53	1,974.92	-3.13	14.60	3.10	0.61	-0.60	13.92
2,000.00	0.53	89.85	1,999.92	-3.17	14.81	3.14	0.85	0.24	-94.72
2,025.00	0.66	100.47	2,024.92	-3.20	15.06	3.16	0.68	0.52	42.48
2,050.00	0.65	118.54	2,049.92	-3.29	15.33	3.25	0.82	-0.04	72.28
2,075.00	0.57	120.80	2,074.92	-3.43	15.56	3.38	0.33	-0.32	9.04
2,100.00	0.50	115.27	2,099.92	-3.54	15.77	3.49	0.35	-0.28	-22.12
2,125.00	0.52	112.74	2,124.91	-3.63	15.97	3.58	0.12	0.08	-10.12
2,150.00	0.54	88.21	2,149.91	-3.67	16.19	3.62	0.90	0.08	-98.12
2,175.00	0.64	100.63	2,174.91	-3.69	16.45	3.65	0.65	0.40	49.68
2,200.00	0.67	104.60	2,199.91	-3.75	16.72	3.71	0.22	0.12	15.88
2,225.00	0.68	110.33	2,224.91	-3.84	17.01	3.79	0.27	0.04	22.92
2,250.00	0.66	113.15	2,249.91	-3.95	17.28	3.90	0.15	-0.08	11.28
2,275.00	0.62	120.48	2,274.91	-4.07	17.53	4.03	0.36	-0.16	29.32
2,300.00	0.64	107.28	2,299.90	-4.18	17.78	4.14	0.58	0.08	-52.80
2,325.00	0.61	101.98	2,324.90	-4.25	18.04	4.20	0.26	-0.12	-21.20
2,350.00	0.52	98.52	2,349.90	-4.30	18.28	4.25	0.38	-0.36	-13.84
2,375.00	0.57	88.88	2,374.90	-4.31	18.52	4.26	0.42	0.20	-38.56
2,400.00	0.78	79.28	2,399.90	-4.28	18.81	4.23	0.95	0.84	-38.40
2,425.00	0.78	90.09	2,424.90	-4.25	19.15	4.19	0.59	0.00	43.24
2,450.00	0.73	64.71	2,449.89	-4.18	19.46	4.13	1.34	-0.20	-101.52

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Wellbore:	OH / 66080	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	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	1.76	21.74	2,474.89	-3.75	19.75	3.70	5.29	4.12	-171.88
2,500.00	2.27	15.37	2,499.87	-2.92	20.02	2.87	2.22	2.04	-25.48
2,525.00	2.26	13.92	2,524.85	-1.96	20.27	1.91	0.23	-0.04	-5.80
2,550.00	2.43	15.10	2,549.83	-0.97	20.53	0.92	0.71	0.68	4.72
2,575.00	2.46	17.89	2,574.81	0.05	20.83	-0.10	0.49	0.12	11.16
2,600.00	2.42	17.76	2,599.79	1.06	21.16	-1.12	0.16	-0.16	-0.52
2,625.00	2.54	18.01	2,624.76	2.09	21.49	-2.15	0.48	0.48	1.00
2,650.00	2.61	21.59	2,649.74	3.15	21.87	-3.21	0.70	0.28	14.32
2,675.00	2.59	24.64	2,674.71	4.19	22.31	-4.25	0.56	-0.08	12.20
2,700.00	2.63	25.15	2,699.69	5.22	22.79	-5.28	0.19	0.16	2.04
2,725.00	2.75	24.50	2,724.66	6.29	23.29	-6.35	0.50	0.48	-2.60
2,750.00	2.84	28.70	2,749.63	7.38	23.83	-7.44	0.89	0.36	16.80
2,775.00	2.66	25.71	2,774.60	8.44	24.38	-8.51	0.92	-0.72	-11.96
2,800.00	2.77	23.94	2,799.57	9.52	24.88	-9.58	0.55	0.44	-7.08
2,825.00	2.86	24.55	2,824.54	10.64	25.38	-10.70	0.38	0.36	2.44
2,850.00	2.90	26.13	2,849.51	11.77	25.92	-11.84	0.36	0.16	6.32
2,875.00	2.75	28.74	2,874.48	12.87	26.49	-12.94	0.79	-0.60	10.44
2,900.00	2.82	24.49	2,899.45	13.95	27.03	-14.02	0.87	0.28	-17.00
2,925.00	2.92	21.45	2,924.42	15.10	27.52	-15.18	0.73	0.40	-12.16
2,950.00	3.06	14.14	2,949.39	16.34	27.91	-16.42	1.62	0.56	-29.24
2,975.00	3.38	3.53	2,974.35	17.73	28.12	-17.80	2.70	1.28	-42.44
3,000.00	3.40	359.20	2,999.30	19.20	28.16	-19.28	1.03	0.08	-17.32
3,025.00	3.39	2.04	3,024.26	20.68	28.17	-20.76	0.67	-0.04	11.36
3,050.00	3.36	359.48	3,049.22	22.15	28.19	-22.23	0.61	-0.12	-10.24
3,075.00	3.41	358.55	3,074.17	23.63	28.17	-23.70	0.30	0.20	-3.72
3,100.00	3.40	358.66	3,099.13	25.11	28.13	-25.19	0.05	-0.04	0.44
3,125.00	3.61	3.80	3,124.08	26.64	28.17	-26.72	1.51	0.84	20.56
3,150.00	3.45	7.11	3,149.03	28.17	28.31	-28.25	1.04	-0.64	13.24
3,175.00	3.66	7.98	3,173.99	29.71	28.51	-29.78	0.87	0.84	3.48
3,200.00	3.65	9.53	3,198.93	31.28	28.76	-31.36	0.40	-0.04	6.20
3,225.00	3.81	12.22	3,223.88	32.88	29.06	-32.96	0.95	0.64	10.76
3,250.00	3.84	12.21	3,248.83	34.51	29.42	-34.59	0.12	0.12	-0.04
3,275.00	3.90	11.55	3,273.77	36.16	29.77	-36.24	0.30	0.24	-2.64
3,300.00	3.73	12.83	3,298.71	37.79	30.12	-37.87	0.76	-0.68	5.12
3,325.00	3.96	10.97	3,323.66	39.43	30.46	-39.51	1.05	0.92	-7.44
3,350.00	4.07	11.47	3,348.60	41.15	30.80	-41.23	0.46	0.44	2.00
3,375.00	4.13	13.37	3,373.53	42.89	31.19	-42.97	0.59	0.24	7.60
3,400.00	4.36	16.84	3,398.46	44.68	31.67	-44.76	1.38	0.92	13.88
3,425.00	4.34	18.73	3,423.39	46.48	32.25	-46.57	0.58	-0.08	7.56
3,450.00	4.57	18.35	3,448.32	48.32	32.87	-48.41	0.93	0.92	-1.52
3,475.00	4.68	18.92	3,473.23	50.23	33.51	-50.32	0.48	0.44	2.28
3,500.00	4.78	19.70	3,498.15	52.18	34.19	-52.27	0.48	0.40	3.12
3,525.00	4.90	20.33	3,523.06	54.16	34.91	-54.25	0.52	0.48	2.52
3,550.00	4.97	20.42	3,547.97	56.18	35.66	-56.27	0.28	0.28	0.36

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 208H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3357.00usft (McVay 8)
Site:	Pitchblende Federal Com 19-30	MD Reference:	RKB @ 3357.00usft (McVay 8)
Well:	208H	North Reference:	Grid
Wellbore:	OH / 66080	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	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	4.96	19.72	3,572.87	58.21	36.41	-58.30	0.25	-0.04	-2.80
3,600.00	5.08	20.11	3,597.78	60.27	37.15	-60.36	0.50	0.48	1.56
3,625.00	4.84	12.86	3,622.68	62.33	37.77	-62.43	2.68	-0.96	-29.00
3,650.00	4.81	5.60	3,647.60	64.40	38.10	-64.50	2.44	-0.12	-29.04
3,675.00	4.92	4.78	3,672.51	66.52	38.29	-66.62	0.52	0.44	-3.28
3,700.00	4.99	6.27	3,697.41	68.67	38.50	-68.77	0.59	0.28	5.96
3,725.00	4.80	6.72	3,722.32	70.78	38.74	-70.89	0.78	-0.76	1.80
3,750.00	4.71	5.53	3,747.24	72.84	38.96	-72.95	0.53	-0.36	-4.76
3,775.00	4.84	6.30	3,772.15	74.91	39.18	-75.02	0.58	0.52	3.08
3,800.00	4.77	7.95	3,797.06	76.99	39.44	-77.10	0.62	-0.28	6.60
3,825.00	4.40	8.61	3,821.98	78.97	39.73	-79.07	1.49	-1.48	2.64
3,850.00	4.48	7.55	3,846.91	80.89	40.00	-80.99	0.46	0.32	-4.24
3,875.00	4.47	8.50	3,871.83	82.82	40.27	-82.92	0.30	-0.04	3.80
3,900.00	4.19	8.97	3,896.76	84.68	40.56	-84.79	1.13	-1.12	1.88
3,925.00	4.05	8.58	3,921.69	86.46	40.83	-86.57	0.57	-0.56	-1.56
3,950.00	4.09	6.95	3,946.63	88.22	41.07	-88.32	0.49	0.16	-6.52
3,975.00	4.15	7.68	3,971.57	90.00	41.30	-90.11	0.32	0.24	2.92
4,000.00	3.89	8.18	3,996.50	91.73	41.54	-91.84	1.05	-1.04	2.00
4,025.00	3.98	5.64	4,021.45	93.44	41.75	-93.55	0.78	0.36	-10.16
4,050.00	3.98	3.86	4,046.38	95.17	41.89	-95.28	0.49	0.00	-7.12
4,075.00	3.83	351.61	4,071.33	96.86	41.83	-96.97	3.38	-0.60	-49.00
4,100.00	4.42	337.37	4,096.26	98.57	41.33	-98.68	4.71	2.36	-56.96
4,125.00	4.59	335.03	4,121.19	100.37	40.54	-100.47	1.00	0.68	-9.36
4,150.00	4.32	332.07	4,146.11	102.11	39.68	-102.21	1.42	-1.08	-11.84
4,175.00	4.47	332.80	4,171.04	103.81	38.79	-103.91	0.64	0.60	2.92
4,200.00	4.60	333.83	4,195.96	105.57	37.90	-105.67	0.61	0.52	4.12
4,225.00	4.41	336.24	4,220.88	107.35	37.08	-107.45	1.07	-0.76	9.64
4,250.00	4.22	334.31	4,245.81	109.06	36.29	-109.15	0.96	-0.76	-7.72
4,275.00	4.21	333.18	4,270.74	110.71	35.48	-110.80	0.33	-0.04	-4.52
4,300.00	4.31	334.08	4,295.67	112.37	34.65	-112.46	0.48	0.40	3.60
4,325.00	4.27	333.20	4,320.60	114.05	33.82	-114.14	0.31	-0.16	-3.52
4,350.00	4.27	334.93	4,345.53	115.72	33.01	-115.81	0.52	0.00	6.92
4,375.00	4.18	335.03	4,370.47	117.39	32.23	-117.47	0.36	-0.36	0.40
4,400.00	4.17	333.50	4,395.40	119.03	31.44	-119.11	0.45	-0.04	-6.12
4,425.00	4.03	330.19	4,420.34	120.61	30.60	-120.68	1.10	-0.56	-13.24
4,450.00	4.00	327.64	4,445.27	122.10	29.69	-122.18	0.72	-0.12	-10.20
4,475.00	3.92	325.85	4,470.22	123.55	28.75	-123.62	0.59	-0.32	-7.16
4,500.00	3.84	327.40	4,495.16	124.96	27.82	-125.03	0.53	-0.32	6.20
4,525.00	3.68	329.99	4,520.10	126.36	26.96	-126.43	0.93	-0.64	10.36
4,550.00	3.26	330.94	4,545.06	127.68	26.22	-127.74	1.70	-1.68	3.80
4,575.00	3.05	335.42	4,570.02	128.90	25.59	-128.97	1.29	-0.84	17.92
4,600.00	2.92	338.28	4,594.99	130.10	25.08	-130.16	0.79	-0.52	11.44
4,625.00	2.73	347.28	4,619.96	131.27	24.72	-131.34	1.93	-0.76	36.00

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 208H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3357.00usft (McVay 8)
Site:	Pitchblende Federal Com 19-30	MD Reference:	RKB @ 3357.00usft (McVay 8)
Well:	208H	North Reference:	Grid
Wellbore:	OH / 66080	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	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	2.54	354.27	4,644.93	132.40	24.53	-132.47	1.49	-0.76	27.96
4,675.00	2.41	357.78	4,669.91	133.48	24.45	-133.54	0.80	-0.52	14.04
4,700.00	2.46	3.61	4,694.88	134.54	24.47	-134.60	1.01	0.20	23.32
4,725.00	2.39	11.72	4,719.86	135.59	24.61	-135.65	1.40	-0.28	32.44
4,750.00	2.08	19.76	4,744.84	136.52	24.87	-136.59	1.76	-1.24	32.16
4,775.00	2.19	15.93	4,769.83	137.41	25.15	-137.48	0.72	0.44	-15.32
4,800.00	2.31	20.18	4,794.81	138.34	25.46	-138.41	0.82	0.48	17.00
4,825.00	2.19	13.78	4,819.79	139.28	25.74	-139.35	1.11	-0.48	-25.60
4,850.00	2.47	353.27	4,844.77	140.28	25.79	-140.34	3.50	1.12	-82.04
4,875.00	2.66	345.31	4,869.74	141.37	25.58	-141.44	1.61	0.76	-31.84
4,900.00	2.51	343.50	4,894.72	142.46	25.28	-142.53	0.68	-0.60	-7.24
4,925.00	2.59	347.02	4,919.69	143.54	25.00	-143.60	0.70	0.32	14.08
4,950.00	2.41	351.95	4,944.67	144.61	24.80	-144.67	1.12	-0.72	19.72
4,975.00	2.20	2.31	4,969.65	145.61	24.74	-145.67	1.86	-0.84	41.44
5,000.00	2.24	17.39	4,994.63	146.55	24.91	-146.62	2.34	0.16	60.32
5,025.00	2.10	22.91	5,019.61	147.44	25.23	-147.51	1.01	-0.56	22.08
5,050.00	2.13	27.37	5,044.59	148.27	25.63	-148.34	0.67	0.12	17.84
5,075.00	2.10	35.88	5,069.58	149.06	26.11	-149.13	1.26	-0.12	34.04
5,100.00	2.27	44.11	5,094.56	149.78	26.72	-149.85	1.43	0.68	32.92
5,125.00	2.17	49.42	5,119.54	150.45	27.42	-150.52	0.91	-0.40	21.24
5,150.00	2.06	51.09	5,144.52	151.04	28.13	-151.11	0.50	-0.44	6.68
5,175.00	2.09	48.52	5,169.51	151.62	28.82	-151.70	0.39	0.12	-10.28
5,200.00	1.81	40.15	5,194.49	152.23	29.42	-152.30	1.59	-1.12	-33.48
5,225.00	1.64	354.72	5,219.48	152.88	29.64	-152.96	5.36	-0.68	-181.72
5,250.00	2.35	330.35	5,244.47	153.69	29.36	-153.76	4.36	2.84	-97.48
5,275.00	2.06	329.98	5,269.45	154.52	28.88	-154.60	1.16	-1.16	-1.48
5,300.00	2.08	326.27	5,294.43	155.29	28.40	-155.36	0.54	0.08	-14.84
5,325.00	2.10	324.70	5,319.42	156.04	27.88	-156.11	0.24	0.08	-6.28
5,350.00	1.85	324.14	5,344.40	156.74	27.38	-156.81	1.00	-1.00	-2.24
5,375.00	1.89	320.57	5,369.39	157.38	26.88	-157.45	0.49	0.16	-14.28
5,400.00	1.80	319.22	5,394.37	158.00	26.37	-158.07	0.40	-0.36	-5.40
5,425.00	1.86	320.00	5,419.36	158.61	25.85	-158.68	0.26	0.24	3.12
5,450.00	1.96	322.45	5,444.35	159.26	25.33	-159.32	0.52	0.40	9.80
5,475.00	1.70	321.21	5,469.34	159.89	24.84	-159.95	1.05	-1.04	-4.96
5,500.00	1.72	325.53	5,494.32	160.48	24.39	-160.55	0.52	0.08	17.28
5,525.00	1.74	320.90	5,519.31	161.09	23.94	-161.15	0.56	0.08	-18.52
5,550.00	1.87	324.03	5,544.30	161.71	23.46	-161.77	0.65	0.52	12.52
5,575.00	1.73	328.20	5,569.29	162.36	23.02	-162.42	0.77	-0.56	16.68
5,600.00	1.64	327.09	5,594.28	162.98	22.63	-163.04	0.38	-0.36	-4.44
5,625.00	1.70	330.20	5,619.27	163.61	22.25	-163.66	0.43	0.24	12.44
5,650.00	1.60	327.66	5,644.26	164.22	21.88	-164.28	0.50	-0.40	-10.16
5,675.00	1.54	322.12	5,669.25	164.78	21.49	-164.84	0.65	-0.24	-22.16
5,700.00	1.61	323.49	5,694.24	165.33	21.07	-165.39	0.32	0.28	5.48

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 208H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3357.00usft (McVay 8)
Site:	Pitchblende Federal Com 19-30	MD Reference:	RKB @ 3357.00usft (McVay 8)
Well:	208H	North Reference:	Grid
Wellbore:	OH / 66080	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	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	1.58	317.86	5,719.23	165.87	20.63	-165.92	0.64	-0.12	-22.52
5,750.00	1.65	322.62	5,744.22	166.41	20.18	-166.46	0.61	0.28	19.04
5,775.00	1.71	323.52	5,769.21	167.00	19.74	-167.05	0.26	0.24	3.60
5,800.00	1.60	315.65	5,794.20	167.55	19.27	-167.60	1.01	-0.44	-31.48
5,825.00	1.82	322.58	5,819.19	168.11	18.79	-168.16	1.21	0.88	27.72
5,850.00	1.85	327.94	5,844.17	168.77	18.33	-168.82	0.70	0.12	21.44
5,875.00	1.73	327.21	5,869.16	169.43	17.92	-169.47	0.49	-0.48	-2.92
5,900.00	1.63	320.53	5,894.15	170.02	17.48	-170.06	0.88	-0.40	-26.72
5,925.00	1.51	324.30	5,919.14	170.56	17.07	-170.60	0.63	-0.48	15.08
5,950.00	1.43	321.76	5,944.13	171.07	16.68	-171.12	0.41	-0.32	-10.16
5,975.00	1.62	323.07	5,969.12	171.60	16.28	-171.64	0.77	0.76	5.24
6,000.00	1.54	326.34	5,994.11	172.16	15.88	-172.20	0.48	-0.32	13.08
6,025.00	1.38	323.06	6,019.11	172.68	15.51	-172.72	0.72	-0.64	-13.12
6,050.00	1.44	320.13	6,044.10	173.16	15.13	-173.20	0.38	0.24	-11.72
6,075.00	1.41	313.68	6,069.09	173.62	14.70	-173.66	0.65	-0.12	-25.80
6,100.00	1.64	326.07	6,094.08	174.13	14.28	-174.16	1.60	0.92	49.56
6,125.00	1.36	322.85	6,119.07	174.66	13.90	-174.70	1.17	-1.12	-12.88
6,150.00	1.42	316.99	6,144.07	175.12	13.51	-175.16	0.62	0.24	-23.44
6,175.00	1.53	319.51	6,169.06	175.60	13.08	-175.64	0.51	0.44	10.08
6,200.00	1.52	325.47	6,194.05	176.13	12.68	-176.16	0.64	-0.04	23.84
6,225.00	1.35	320.64	6,219.04	176.63	12.31	-176.66	0.83	-0.68	-19.32
6,250.00	1.31	323.51	6,244.03	177.09	11.95	-177.12	0.31	-0.16	11.48
6,275.00	1.30	316.35	6,269.03	177.52	11.58	-177.55	0.65	-0.04	-28.64
6,300.00	1.22	327.79	6,294.02	177.95	11.25	-177.98	1.05	-0.32	45.76
6,325.00	1.08	314.77	6,319.02	178.35	10.94	-178.37	1.18	-0.56	-52.08
6,350.00	1.40	321.04	6,344.01	178.75	10.58	-178.78	1.39	1.28	25.08
6,375.00	1.09	326.38	6,369.00	179.18	10.25	-179.21	1.32	-1.24	21.36
6,400.00	1.13	319.15	6,394.00	179.57	9.96	-179.59	0.58	0.16	-28.92
6,425.00	1.00	326.77	6,419.00	179.94	9.68	-179.96	0.77	-0.52	30.48
6,450.00	1.07	316.38	6,443.99	180.29	9.40	-180.31	0.80	0.28	-41.56
6,475.00	1.12	329.32	6,468.99	180.67	9.11	-180.69	1.01	0.20	51.76
6,500.00	0.96	320.75	6,493.98	181.04	8.86	-181.06	0.89	-0.64	-34.28
6,525.00	1.10	318.03	6,518.98	181.38	8.56	-181.40	0.59	0.56	-10.88
6,550.00	1.13	327.88	6,543.97	181.77	8.27	-181.79	0.78	0.12	39.40
6,575.00	1.08	324.14	6,568.97	182.17	8.00	-182.19	0.35	-0.20	-14.96
6,600.00	1.10	322.58	6,593.96	182.55	7.72	-182.57	0.14	0.08	-6.24
6,625.00	1.01	333.02	6,618.96	182.94	7.47	-182.96	0.85	-0.36	41.76
6,650.00	0.93	329.70	6,643.96	183.31	7.27	-183.33	0.39	-0.32	-13.28
6,675.00	0.90	321.35	6,668.95	183.64	7.05	-183.65	0.55	-0.12	-33.40
6,700.00	0.99	320.56	6,693.95	183.96	6.79	-183.97	0.36	0.36	-3.16
6,725.00	1.03	325.74	6,718.95	184.31	6.52	-184.33	0.40	0.16	20.72
6,750.00	0.91	329.09	6,743.94	184.67	6.29	-184.68	0.53	-0.48	13.40
6,775.00	0.85	323.76	6,768.94	184.99	6.08	-185.00	0.41	-0.24	-21.32
6,800.00	0.90	325.38	6,793.94	185.30	5.86	-185.31	0.22	0.20	6.48

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 208H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3357.00usft (McVay 8)
Site:	Pitchblende Federal Com 19-30	MD Reference:	RKB @ 3357.00usft (McVay 8)
Well:	208H	North Reference:	Grid
Wellbore:	OH / 66080	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	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	1.00	326.73	6,818.93	185.64	5.63	-185.65	0.41	0.40	5.40
6,850.00	1.36	330.23	6,843.93	186.08	5.36	-186.09	1.47	1.44	14.00
6,875.00	1.66	334.68	6,868.92	186.67	5.06	-186.68	1.29	1.20	17.80
6,900.00	1.70	333.74	6,893.91	187.33	4.74	-187.34	0.19	0.16	-3.76
6,925.00	1.80	334.29	6,918.90	188.01	4.41	-188.02	0.41	0.40	2.20
6,950.00	1.74	338.83	6,943.89	188.72	4.10	-188.73	0.61	-0.24	18.16
6,975.00	1.82	339.86	6,968.87	189.45	3.83	-189.46	0.34	0.32	4.12
7,000.00	1.53	338.39	6,993.86	190.13	3.57	-190.14	1.17	-1.16	-5.88
7,025.00	1.63	336.91	7,018.85	190.77	3.30	-190.77	0.43	0.40	-5.92
7,050.00	1.60	336.11	7,043.84	191.41	3.02	-191.42	0.15	-0.12	-3.20
7,075.00	1.59	335.84	7,068.83	192.05	2.74	-192.05	0.05	-0.04	-1.08
7,100.00	1.61	331.59	7,093.82	192.67	2.43	-192.68	0.48	0.08	-17.00
7,125.00	1.60	326.86	7,118.81	193.27	2.07	-193.28	0.53	-0.04	-18.92
7,150.00	1.49	324.99	7,143.80	193.83	1.70	-193.84	0.48	-0.44	-7.48
7,175.00	1.53	326.33	7,168.80	194.38	1.32	-194.38	0.21	0.16	5.36
7,200.00	1.57	325.70	7,193.79	194.94	0.95	-194.94	0.17	0.16	-2.52
7,225.00	1.52	325.58	7,218.78	195.49	0.57	-195.50	0.20	-0.20	-0.48
7,250.00	1.59	324.12	7,243.77	196.05	0.17	-196.05	0.32	0.28	-5.84
7,275.00	1.78	324.30	7,268.76	196.65	-0.26	-196.64	0.76	0.76	0.72
7,300.00	2.23	332.78	7,293.74	197.39	-0.70	-197.39	2.15	1.80	33.92
7,325.00	2.82	338.53	7,318.72	198.40	-1.15	-198.39	2.57	2.36	23.00
7,350.00	2.96	336.97	7,343.69	199.56	-1.63	-199.56	0.64	0.56	-6.24
7,375.00	3.14	338.95	7,368.65	200.80	-2.13	-200.79	0.83	0.72	7.92
7,400.00	2.89	339.35	7,393.62	202.03	-2.60	-202.02	1.00	-1.00	1.60
7,425.00	2.99	336.05	7,418.58	203.21	-3.08	-203.20	0.79	0.40	-13.20
7,450.00	3.11	337.21	7,443.55	204.43	-3.61	-204.42	0.54	0.48	4.64
7,475.00	2.92	339.57	7,468.51	205.65	-4.10	-205.64	0.91	-0.76	9.44
7,500.00	2.86	337.59	7,493.48	206.83	-4.56	-206.82	0.47	-0.24	-7.92
7,525.00	2.98	337.48	7,518.45	208.00	-5.04	-207.99	0.48	0.48	-0.44
7,550.00	2.83	339.52	7,543.42	209.18	-5.51	-209.17	0.73	-0.60	8.16
7,575.00	2.73	337.25	7,568.39	210.31	-5.95	-210.29	0.59	-0.40	-9.08
7,600.00	2.73	336.30	7,593.36	211.40	-6.42	-211.39	0.18	0.00	-3.80
7,625.00	2.51	339.32	7,618.33	212.46	-6.86	-212.44	1.04	-0.88	12.08
7,650.00	2.33	335.25	7,643.31	213.44	-7.26	-213.42	1.00	-0.72	-16.28
7,675.00	2.43	333.26	7,668.29	214.37	-7.71	-214.35	0.52	0.40	-7.96
7,700.00	2.49	337.85	7,693.27	215.35	-8.16	-215.32	0.82	0.24	18.36
7,725.00	2.23	335.95	7,718.25	216.29	-8.56	-216.27	1.09	-1.04	-7.60
7,750.00	2.27	332.14	7,743.23	217.18	-8.99	-217.15	0.62	0.16	-15.24
7,775.00	2.41	332.62	7,768.21	218.08	-9.46	-218.05	0.57	0.56	1.92
7,800.00	2.30	336.44	7,793.18	219.01	-9.90	-218.98	0.77	-0.44	15.28
7,825.00	2.15	335.74	7,818.17	219.89	-10.30	-219.87	0.61	-0.60	-2.80
7,850.00	2.15	333.55	7,843.15	220.74	-10.70	-220.71	0.33	0.00	-8.76
7,875.00	2.07	331.78	7,868.13	221.56	-11.12	-221.53	0.41	-0.32	-7.08

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 208H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3357.00usft (McVay 8)
Site:	Pitchblende Federal Com 19-30	MD Reference:	RKB @ 3357.00usft (McVay 8)
Well:	208H	North Reference:	Grid
Wellbore:	OH / 66080	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	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	2.07	329.75	7,893.11	222.35	-11.56	-222.32	0.29	0.00	-8.12
7,925.00	2.17	329.42	7,918.10	223.14	-12.03	-223.11	0.40	0.40	-1.32
7,950.00	2.22	331.63	7,943.08	223.98	-12.50	-223.94	0.39	0.20	8.84
7,975.00	2.04	334.03	7,968.06	224.80	-12.93	-224.77	0.80	-0.72	9.60
8,000.00	1.90	328.48	7,993.05	225.56	-13.34	-225.52	0.95	-0.56	-22.20
8,025.00	1.93	327.94	8,018.03	226.27	-13.78	-226.23	0.14	0.12	-2.16
8,050.00	1.96	329.90	8,043.02	226.99	-14.22	-226.96	0.29	0.12	7.84
8,075.00	1.66	333.75	8,068.01	227.69	-14.59	-227.65	1.29	-1.20	15.40
8,100.00	1.63	331.82	8,093.00	228.33	-14.92	-228.29	0.25	-0.12	-7.72
8,125.00	1.91	330.36	8,117.98	229.00	-15.29	-228.96	1.13	1.12	-5.84
8,150.00	2.29	330.20	8,142.97	229.80	-15.75	-229.76	1.52	1.52	-0.64
8,175.00	2.51	330.71	8,167.94	230.71	-16.26	-230.67	0.88	0.88	2.04
8,200.00	2.45	329.81	8,192.92	231.65	-16.80	-231.60	0.29	-0.24	-3.60
8,225.00	2.46	328.11	8,217.90	232.57	-17.35	-232.52	0.29	0.04	-6.80
8,250.00	2.54	328.57	8,242.87	233.49	-17.92	-233.45	0.33	0.32	1.84
8,275.00	2.25	327.98	8,267.85	234.38	-18.47	-234.33	1.16	-1.16	-2.36
8,300.00	2.20	325.63	8,292.83	235.20	-19.00	-235.14	0.42	-0.20	-9.40
8,325.00	2.25	327.00	8,317.82	236.00	-19.54	-235.95	0.29	0.20	5.48
8,350.00	2.16	328.19	8,342.80	236.81	-20.06	-236.76	0.40	-0.36	4.76
8,375.00	2.15	327.32	8,367.78	237.61	-20.56	-237.56	0.14	-0.04	-3.48
8,400.00	2.20	324.58	8,392.76	238.40	-21.09	-238.34	0.46	0.20	-10.96
8,425.00	2.56	328.83	8,417.74	239.26	-21.66	-239.21	1.60	1.44	17.00
8,450.00	3.57	323.97	8,442.70	240.37	-22.40	-240.31	4.17	4.04	-19.44
8,475.00	3.80	324.65	8,467.65	241.68	-23.34	-241.61	0.94	0.92	2.72
8,500.00	3.95	325.47	8,492.59	243.06	-24.31	-243.00	0.64	0.60	3.28
8,525.00	3.61	326.26	8,517.54	244.43	-25.23	-244.36	1.38	-1.36	3.16
8,550.00	3.47	325.05	8,542.49	245.70	-26.10	-245.63	0.63	-0.56	-4.84
8,575.00	3.27	324.12	8,567.45	246.90	-26.96	-246.83	0.83	-0.80	-3.72
8,600.00	3.14	326.54	8,592.41	248.05	-27.75	-247.97	0.75	-0.52	9.68
8,625.00	2.92	324.81	8,617.38	249.14	-28.50	-249.06	0.95	-0.88	-6.92
8,650.00	2.96	323.42	8,642.34	250.18	-29.25	-250.10	0.33	0.16	-5.56
8,675.00	2.80	325.64	8,667.31	251.20	-29.98	-251.12	0.78	-0.64	8.88
8,700.00	2.50	326.60	8,692.28	252.16	-30.62	-252.08	1.21	-1.20	3.84
8,725.00	2.20	326.42	8,717.26	253.01	-31.19	-252.93	1.20	-1.20	-0.72
8,750.00	2.02	320.81	8,742.25	253.76	-31.73	-253.67	1.10	-0.72	-22.44
8,775.00	2.02	320.56	8,767.23	254.44	-32.29	-254.35	0.04	0.00	-1.00
8,800.00	2.08	322.37	8,792.21	255.14	-32.85	-255.05	0.35	0.24	7.24
8,825.00	2.01	321.55	8,817.20	255.84	-33.40	-255.75	0.30	-0.28	-3.28
8,850.00	2.07	321.51	8,842.18	256.54	-33.95	-256.45	0.24	0.24	-0.16
8,875.00	2.05	325.28	8,867.17	257.26	-34.48	-257.17	0.55	-0.08	15.08
8,900.00	2.46	321.95	8,892.15	258.05	-35.07	-257.95	1.72	1.64	-13.32
8,925.00	2.73	320.26	8,917.12	258.93	-35.78	-258.83	1.12	1.08	-6.76
8,950.00	2.71	319.19	8,942.09	259.83	-36.55	-259.74	0.22	-0.08	-4.28

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 208H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3357.00usft (McVay 8)
Site:	Pitchblende Federal Com 19-30	MD Reference:	RKB @ 3357.00usft (McVay 8)
Well:	208H	North Reference:	Grid
Wellbore:	OH / 66080	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	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	2.80	319.65	8,967.06	260.75	-37.33	-260.65	0.37	0.36	1.84
9,000.00	2.79	319.63	8,992.03	261.67	-38.12	-261.57	0.04	-0.04	-0.08
9,025.00	2.80	320.48	9,017.00	262.61	-38.90	-262.51	0.17	0.04	3.40
9,050.00	2.55	322.31	9,041.98	263.52	-39.63	-263.42	1.06	-1.00	7.32
9,075.00	2.49	323.67	9,066.95	264.40	-40.29	-264.29	0.34	-0.24	5.44
9,100.00	2.44	325.54	9,091.93	265.27	-40.91	-265.17	0.38	-0.20	7.48
9,125.00	2.27	326.97	9,116.91	266.13	-41.49	-266.02	0.72	-0.68	5.72
9,150.00	2.08	328.63	9,141.89	266.93	-41.99	-266.82	0.80	-0.76	6.64
9,175.00	2.04	326.48	9,166.87	267.69	-42.47	-267.58	0.35	-0.16	-8.60
9,200.00	1.98	325.88	9,191.86	268.42	-42.96	-268.30	0.25	-0.24	-2.40
9,225.00	1.91	331.38	9,216.85	269.14	-43.40	-269.03	0.80	-0.28	22.00
9,250.00	1.77	331.96	9,241.83	269.85	-43.78	-269.73	0.56	-0.56	2.32
9,275.00	1.66	331.09	9,266.82	270.50	-44.14	-270.39	0.45	-0.44	-3.48
9,300.00	1.57	334.54	9,291.81	271.13	-44.46	-271.01	0.53	-0.36	13.80
9,325.00	1.47	339.22	9,316.80	271.74	-44.72	-271.62	0.64	-0.40	18.72
9,350.00	1.28	342.65	9,341.80	272.31	-44.92	-272.19	0.83	-0.76	13.72
9,375.00	1.17	349.57	9,366.79	272.82	-45.05	-272.70	0.74	-0.44	27.68
9,400.00	0.95	359.51	9,391.79	273.28	-45.10	-273.16	1.14	-0.88	39.76
9,425.00	0.91	1.66	9,416.78	273.69	-45.10	-273.57	0.21	-0.16	8.60
9,450.00	0.86	10.22	9,441.78	274.07	-45.06	-273.95	0.56	-0.20	34.24
9,475.00	0.78	9.80	9,466.78	274.42	-44.99	-274.30	0.32	-0.32	-1.68
9,500.00	0.78	6.63	9,491.77	274.76	-44.95	-274.64	0.17	0.00	-12.68
9,525.00	0.77	8.05	9,516.77	275.09	-44.90	-274.98	0.09	-0.04	5.68
9,550.00	0.73	6.93	9,541.77	275.42	-44.86	-275.30	0.17	-0.16	-4.48
9,575.00	0.74	7.73	9,566.77	275.74	-44.82	-275.62	0.06	0.04	3.20
9,600.00	0.69	15.65	9,591.77	276.04	-44.76	-275.92	0.44	-0.20	31.68
9,625.00	0.67	14.70	9,616.76	276.33	-44.68	-276.21	0.09	-0.08	-3.80
9,650.00	0.64	19.25	9,641.76	276.60	-44.60	-276.48	0.24	-0.12	18.20
9,675.00	0.69	17.74	9,666.76	276.88	-44.50	-276.76	0.21	0.20	-6.04
9,700.00	0.72	16.23	9,691.76	277.17	-44.41	-277.05	0.14	0.12	-6.04
9,725.00	0.66	19.47	9,716.76	277.46	-44.32	-277.34	0.29	-0.24	12.96
9,750.00	0.77	10.28	9,741.75	277.76	-44.24	-277.64	0.63	0.44	-36.76
9,775.00	0.72	5.43	9,766.75	278.08	-44.20	-277.96	0.32	-0.20	-19.40
9,800.00	0.90	354.44	9,791.75	278.43	-44.20	-278.32	0.95	0.72	-43.96
9,825.00	0.86	351.05	9,816.75	278.81	-44.25	-278.70	0.26	-0.16	-13.56
9,850.00	0.91	343.12	9,841.74	279.19	-44.34	-279.07	0.53	0.20	-31.72
9,875.00	0.92	340.32	9,866.74	279.57	-44.46	-279.45	0.18	0.04	-11.20
9,900.00	0.94	338.87	9,891.74	279.95	-44.60	-279.83	0.12	0.08	-5.80
9,925.00	0.90	336.71	9,916.73	280.32	-44.76	-280.20	0.21	-0.16	-8.64
9,950.00	0.96	338.64	9,941.73	280.69	-44.91	-280.58	0.27	0.24	7.72
9,975.00	0.89	342.38	9,966.73	281.07	-45.05	-280.96	0.37	-0.28	14.96
10,000.00	0.85	350.60	9,991.73	281.44	-45.13	-281.32	0.52	-0.16	32.88
10,025.00	0.74	345.20	10,016.72	281.78	-45.21	-281.66	0.53	-0.44	-21.60
10,050.00	0.91	350.87	10,041.72	282.13	-45.28	-282.01	0.75	0.68	22.68

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 208H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3357.00usft (McVay 8)
Site:	Pitchblende Federal Com 19-30	MD Reference:	RKB @ 3357.00usft (McVay 8)
Well:	208H	North Reference:	Grid
Wellbore:	OH / 66080	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	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)
10,075.00	0.84	354.00	10,066.72	282.51	-45.33	-282.39	0.34	-0.28	12.52
10,100.00	0.78	350.52	10,091.71	282.86	-45.38	-282.74	0.31	-0.24	-13.92
10,125.00	0.79	346.92	10,116.71	283.20	-45.44	-283.08	0.20	0.04	-14.40
10,150.00	0.92	349.14	10,141.71	283.56	-45.52	-283.44	0.54	0.52	8.88
10,175.00	1.02	347.18	10,166.71	283.98	-45.61	-283.86	0.42	0.40	-7.84
10,200.00	1.20	345.94	10,191.70	284.45	-45.72	-284.33	0.73	0.72	-4.96
10,225.00	1.37	345.15	10,216.70	284.99	-45.86	-284.87	0.68	0.68	-3.16
10,250.00	1.46	342.68	10,241.69	285.58	-46.03	-285.46	0.43	0.36	-9.88
10,275.00	1.57	341.87	10,266.68	286.21	-46.23	-286.09	0.45	0.44	-3.24
10,300.00	1.71	342.20	10,291.67	286.89	-46.45	-286.77	0.56	0.56	1.32
10,325.00	1.81	336.02	10,316.66	287.61	-46.73	-287.49	0.86	0.40	-24.72
10,350.00	1.97	332.32	10,341.64	288.35	-47.09	-288.23	0.80	0.64	-14.80
10,375.00	2.12	328.83	10,366.63	289.13	-47.53	-289.00	0.78	0.60	-13.96
10,400.00	2.14	327.42	10,391.61	289.92	-48.02	-289.79	0.22	0.08	-5.64
10,425.00	2.18	325.77	10,416.59	290.70	-48.54	-290.57	0.30	0.16	-6.60
10,450.00	2.37	325.23	10,441.57	291.52	-49.10	-291.39	0.76	0.76	-2.16
10,475.00	2.13	326.36	10,466.55	292.33	-49.65	-292.20	0.98	-0.96	4.52
10,500.00	2.10	330.40	10,491.54	293.12	-50.14	-292.98	0.61	-0.12	16.16
10,525.00	1.95	331.41	10,516.52	293.89	-50.56	-293.75	0.62	-0.60	4.04
10,550.00	1.78	333.58	10,541.51	294.61	-50.94	-294.48	0.74	-0.68	8.68
10,575.00	1.76	339.97	10,566.50	295.32	-51.25	-295.18	0.79	-0.08	25.56
10,600.00	1.85	348.51	10,591.48	296.07	-51.46	-295.94	1.13	0.36	34.16
10,625.00	1.96	354.17	10,616.47	296.89	-51.58	-296.76	0.87	0.44	22.64
10,650.00	2.14	353.95	10,641.45	297.78	-51.67	-297.65	0.72	0.72	-0.88
10,675.00	1.89	353.11	10,666.44	298.66	-51.77	-298.52	1.01	-1.00	-3.36
10,700.00	2.09	356.45	10,691.42	299.52	-51.85	-299.39	0.92	0.80	13.36
10,725.00	2.09	358.09	10,716.41	300.43	-51.89	-300.30	0.24	0.00	6.56
10,750.00	2.09	354.80	10,741.39	301.34	-51.95	-301.21	0.48	0.00	-13.16
10,775.00	2.19	353.58	10,766.37	302.27	-52.04	-302.13	0.44	0.40	-4.88
10,800.00	2.24	354.30	10,791.35	303.23	-52.15	-303.09	0.23	0.20	2.88
10,825.00	2.17	357.30	10,816.33	304.19	-52.22	-304.05	0.54	-0.28	12.00
10,850.00	2.13	353.15	10,841.32	305.12	-52.30	-304.99	0.64	-0.16	-16.60
10,875.00	2.32	354.91	10,866.30	306.09	-52.40	-305.95	0.81	0.76	7.04
10,900.00	2.27	351.41	10,891.28	307.08	-52.51	-306.94	0.60	-0.20	-14.00
10,925.00	2.20	351.76	10,916.26	308.05	-52.66	-307.91	0.29	-0.28	1.40
10,950.00	2.32	351.80	10,941.24	309.02	-52.80	-308.88	0.48	0.48	0.16
10,975.00	2.40	350.82	10,966.22	310.04	-52.95	-309.90	0.36	0.32	-3.92
11,000.00	2.39	350.65	10,991.20	311.07	-53.12	-310.93	0.05	-0.04	-0.68
11,025.00	2.40	346.43	11,016.17	312.10	-53.33	-311.95	0.71	0.04	-16.88
11,050.00	2.45	345.86	11,041.15	313.12	-53.58	-312.98	0.22	0.20	-2.28
11,075.00	2.51	345.33	11,066.13	314.17	-53.85	-314.03	0.26	0.24	-2.12
11,100.00	2.45	345.40	11,091.11	315.22	-54.13	-315.07	0.24	-0.24	0.28
11,125.00	2.55	344.64	11,116.08	316.27	-54.41	-316.13	0.42	0.40	-3.04

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 208H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3357.00usft (McVay 8)
Site:	Pitchblende Federal Com 19-30	MD Reference:	RKB @ 3357.00usft (McVay 8)
Well:	208H	North Reference:	Grid
Wellbore:	OH / 66080	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	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)
11,150.00	2.50	346.49	11,141.06	317.34	-54.68	-317.19	0.38	-0.20	7.40
11,175.00	2.58	342.99	11,166.03	318.40	-54.97	-318.26	0.70	0.32	-14.00
11,200.00	2.50	345.02	11,191.01	319.47	-55.28	-319.32	0.48	-0.32	8.12
11,225.00	2.59	348.55	11,215.98	320.55	-55.53	-320.40	0.72	0.36	14.12
11,250.00	2.51	349.69	11,240.96	321.64	-55.74	-321.50	0.38	-0.32	4.56
11,275.00	2.40	355.25	11,265.94	322.70	-55.88	-322.55	1.05	-0.44	22.24
11,300.00	2.50	357.65	11,290.91	323.77	-55.95	-323.62	0.57	0.40	9.60
11,325.00	2.54	354.83	11,315.89	324.87	-56.02	-324.72	0.52	0.16	-11.28
11,350.00	2.71	356.70	11,340.86	326.01	-56.11	-325.86	0.76	0.68	7.48
11,375.00	2.56	359.82	11,365.84	327.16	-56.14	-327.01	0.83	-0.60	12.48
11,400.00	2.28	3.13	11,390.81	328.21	-56.12	-328.06	1.25	-1.12	13.24
11,425.00	3.11	358.90	11,415.79	329.38	-56.10	-329.24	3.41	3.32	-16.92
11,450.00	2.94	359.80	11,440.75	330.70	-56.12	-330.56	0.71	-0.68	3.60
11,475.00	2.83	0.28	11,465.72	331.96	-56.12	-331.81	0.45	-0.44	1.92
11,500.00	2.84	2.07	11,490.69	333.20	-56.09	-333.05	0.36	0.04	7.16
11,525.00	2.62	5.62	11,515.66	334.39	-56.01	-334.24	1.11	-0.88	14.20
11,550.00	2.55	5.64	11,540.64	335.51	-55.90	-335.36	0.28	-0.28	0.08
11,575.00	2.50	8.29	11,565.61	336.60	-55.77	-336.45	0.51	-0.20	10.60
11,600.00	2.46	11.47	11,590.59	337.67	-55.58	-337.52	0.57	-0.16	12.72
11,625.00	2.50	12.36	11,615.56	338.72	-55.36	-338.58	0.22	0.16	3.56
11,650.00	2.51	15.43	11,640.54	339.79	-55.10	-339.64	0.54	0.04	12.28
11,675.00	2.43	15.04	11,665.52	340.82	-54.81	-340.68	0.33	-0.32	-1.56
11,700.00	2.30	17.50	11,690.50	341.81	-54.53	-341.67	0.66	-0.52	9.84
11,725.00	2.17	20.08	11,715.48	342.74	-54.21	-342.59	0.66	-0.52	10.32
11,750.00	2.01	21.77	11,740.46	343.59	-53.89	-343.45	0.69	-0.64	6.76
11,775.00	2.13	24.91	11,765.44	344.42	-53.53	-344.28	0.66	0.48	12.56
11,800.00	2.04	31.89	11,790.43	345.22	-53.10	-345.08	1.08	-0.36	27.92
11,825.00	1.99	39.34	11,815.41	345.93	-52.59	-345.79	1.07	-0.20	29.80
11,850.00	1.97	46.60	11,840.40	346.56	-52.00	-346.42	1.01	-0.08	29.04
11,875.00	1.89	47.23	11,865.38	347.14	-51.39	-347.00	0.33	-0.32	2.52
11,883.81	1.86	47.47	11,874.19	347.33	-51.17	-347.20	0.35	-0.34	2.72
Tie In									
11,969.00	1.72	70.40	11,959.34	348.70	-48.95	-348.57	0.85	-0.16	26.92
First Gordon MWD Survey									
12,106.00	1.15	89.54	12,096.30	349.40	-45.64	-349.28	0.54	-0.42	13.97
12,169.00	2.37	166.77	12,159.27	348.13	-44.71	-348.02	3.80	1.94	122.59
12,201.00	5.11	177.59	12,191.20	346.06	-44.50	-345.95	8.80	8.56	33.81
12,232.00	9.36	184.11	12,221.95	342.17	-44.62	-342.05	13.94	13.71	21.03
12,264.00	13.82	185.93	12,253.29	335.77	-45.20	-335.65	13.98	13.94	5.69
12,295.00	17.45	188.94	12,283.13	327.49	-46.31	-327.37	11.99	11.71	9.71
12,327.00	21.23	191.51	12,313.32	317.07	-48.21	-316.94	12.11	11.81	8.03
12,359.00	25.35	192.96	12,342.71	304.71	-50.90	-304.58	13.00	12.88	4.53
12,390.00	29.67	192.35	12,370.20	290.74	-54.03	-290.60	13.96	13.94	-1.97
12,438.00	35.40	192.73	12,410.65	265.56	-59.64	-265.40	11.95	11.94	0.79

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 208H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3357.00usft (McVay 8)
Site:	Pitchblende Federal Com 19-30	MD Reference:	RKB @ 3357.00usft (McVay 8)
Well:	208H	North Reference:	Grid
Wellbore:	OH / 66080	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	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)
12,485.00	39.59	193.76	12,447.93	237.72	-66.21	-237.54	9.01	8.91	2.19
12,533.00	43.12	188.89	12,483.97	206.64	-72.38	-206.45	9.95	7.35	-10.15
12,580.00	48.73	184.99	12,516.65	173.14	-76.41	-172.94	13.34	11.94	-8.30
12,628.00	51.42	185.41	12,547.45	136.48	-79.75	-136.27	5.64	5.60	0.88
12,675.00	50.92	184.13	12,576.93	100.00	-82.79	-99.78	2.37	-1.06	-2.72
12,723.00	56.80	183.88	12,605.22	61.35	-85.50	-61.12	12.26	12.25	-0.52
12,769.00	63.73	182.98	12,628.02	21.50	-87.87	-21.27	15.16	15.07	-1.96
12,817.00	68.64	181.75	12,647.40	-22.36	-89.68	22.60	10.49	10.23	-2.56
12,864.00	72.89	180.72	12,662.88	-66.72	-90.63	66.96	9.28	9.04	-2.19
12,912.00	75.87	180.94	12,675.80	-112.94	-91.30	113.17	6.22	6.21	0.46
12,959.00	79.70	183.10	12,685.75	-158.83	-92.92	159.07	9.30	8.15	4.60
13,007.00	85.96	186.64	12,691.74	-206.25	-96.97	206.51	14.95	13.04	7.38
13,054.00	91.15	188.79	12,692.92	-252.79	-103.28	253.06	11.95	11.04	4.57
13,148.00	90.14	183.98	12,691.86	-346.18	-113.73	346.47	5.23	-1.07	-5.12
13,243.00	89.51	178.84	12,692.15	-441.11	-116.06	441.42	5.45	-0.66	-5.41
13,337.00	89.82	178.01	12,692.70	-535.08	-113.48	535.37	0.94	0.33	-0.88
13,431.00	88.20	176.93	12,694.33	-628.97	-109.33	629.25	2.07	-1.72	-1.15
13,526.00	87.09	175.99	12,698.23	-723.70	-103.47	723.97	1.53	-1.17	-0.99
13,621.00	89.24	176.94	12,701.27	-818.47	-97.62	818.72	2.47	2.26	1.00
13,716.00	89.04	177.85	12,702.70	-913.36	-93.30	913.60	0.98	-0.21	0.96
13,810.00	88.66	176.69	12,704.58	-1,007.23	-88.82	1,007.46	1.30	-0.40	-1.23
13,905.00	90.14	177.15	12,705.58	-1,102.08	-83.72	1,102.30	1.63	1.56	0.48
14,000.00	92.89	177.57	12,703.07	-1,196.94	-79.35	1,197.14	2.93	2.89	0.44
14,094.00	91.74	178.21	12,699.27	-1,290.80	-75.89	1,290.99	1.40	-1.22	0.68
14,189.00	87.46	175.64	12,699.93	-1,385.63	-70.80	1,385.81	5.25	-4.51	-2.71
14,284.00	91.92	180.75	12,700.45	-1,480.52	-67.81	1,480.70	7.14	4.69	5.38
14,379.00	88.98	180.17	12,699.70	-1,575.51	-68.57	1,575.68	3.15	-3.09	-0.61
14,474.00	88.88	182.18	12,701.48	-1,670.47	-70.52	1,670.65	2.12	-0.11	2.12
14,568.00	87.72	181.71	12,704.27	-1,764.37	-73.70	1,764.56	1.33	-1.23	-0.50
14,663.00	91.07	181.62	12,705.27	-1,859.31	-76.46	1,859.50	3.53	3.53	-0.09
14,758.00	91.82	181.47	12,702.87	-1,954.24	-79.03	1,954.44	0.81	0.79	-0.16
14,852.00	89.80	180.64	12,701.54	-2,048.21	-80.76	2,048.42	2.32	-2.15	-0.88
14,948.00	92.43	180.85	12,699.68	-2,144.18	-82.00	2,144.39	2.75	2.74	0.22
15,042.00	89.17	179.67	12,698.36	-2,238.15	-82.43	2,238.36	3.69	-3.47	-1.26
15,137.00	90.93	178.79	12,698.28	-2,333.14	-81.15	2,333.35	2.07	1.85	-0.93
15,233.00	90.25	176.58	12,697.29	-2,429.05	-77.28	2,429.24	2.41	-0.71	-2.30
15,327.00	88.49	171.81	12,698.33	-2,522.53	-67.77	2,522.70	5.41	-1.87	-5.07
15,422.00	90.70	174.94	12,699.00	-2,616.88	-56.81	2,617.02	4.03	2.33	3.29
15,516.00	89.61	181.70	12,698.74	-2,710.78	-54.06	2,710.91	7.28	-1.16	7.19
15,610.00	88.09	180.50	12,700.63	-2,804.74	-55.87	2,804.88	2.06	-1.62	-1.28
15,704.00	88.36	179.29	12,703.54	-2,898.69	-55.69	2,898.83	1.32	0.29	-1.29
15,798.00	86.34	177.90	12,707.89	-2,992.56	-53.39	2,992.69	2.61	-2.15	-1.48
15,893.00	87.15	181.43	12,713.28	-3,087.39	-52.84	3,087.52	3.81	0.85	3.72

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 208H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3357.00usft (McVay 8)
Site:	Pitchblende Federal Com 19-30	MD Reference:	RKB @ 3357.00usft (McVay 8)
Well:	208H	North Reference:	Grid
Wellbore:	OH / 66080	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	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)
15,988.00	87.81	187.78	12,717.46	-3,181.94	-60.46	3,182.09	6.71	0.69	6.68
16,082.00	87.40	184.27	12,721.39	-3,275.32	-70.31	3,275.50	3.76	-0.44	-3.73
16,176.00	88.36	181.98	12,724.87	-3,369.11	-75.43	3,369.30	2.64	1.02	-2.44
16,271.00	90.11	180.54	12,726.14	-3,464.08	-77.52	3,464.27	2.39	1.84	-1.52
16,367.00	93.05	177.73	12,723.49	-3,560.01	-76.07	3,560.19	4.24	3.06	-2.93
16,461.00	94.59	177.26	12,717.23	-3,653.71	-71.97	3,653.88	1.71	1.64	-0.50
16,556.00	95.20	177.12	12,709.12	-3,748.25	-67.33	3,748.41	0.66	0.64	-0.15
16,651.00	92.34	177.02	12,702.88	-3,842.91	-62.49	3,843.06	3.01	-3.01	-0.11
16,745.00	91.67	178.10	12,699.59	-3,936.76	-58.49	3,936.90	1.35	-0.71	1.15
16,840.00	91.91	180.93	12,696.62	-4,031.70	-57.69	4,031.84	2.99	0.25	2.98
16,935.00	92.71	180.25	12,692.79	-4,126.62	-58.66	4,126.76	1.10	0.84	-0.72
17,029.00	93.66	181.28	12,687.57	-4,220.46	-59.92	4,220.60	1.49	1.01	1.10
17,123.00	94.17	179.41	12,681.15	-4,314.24	-60.48	4,314.38	2.06	0.54	-1.99
17,217.00	89.54	173.29	12,678.11	-4,407.93	-54.50	4,408.05	8.16	-4.93	-6.51
17,312.00	90.05	174.62	12,678.45	-4,502.39	-44.49	4,502.50	1.50	0.54	1.40
17,407.00	90.99	175.18	12,677.58	-4,597.01	-36.05	4,597.09	1.15	0.99	0.59
17,501.00	88.44	171.68	12,678.05	-4,690.37	-25.30	4,690.42	4.61	-2.71	-3.72
17,596.00	89.09	175.26	12,680.10	-4,784.72	-14.50	4,784.74	3.83	0.68	3.77
17,691.00	91.04	177.74	12,679.99	-4,879.53	-8.70	4,879.54	3.32	2.05	2.61
17,786.00	90.55	179.68	12,678.67	-4,974.49	-6.56	4,974.49	2.11	-0.52	2.04
17,880.00	90.10	182.56	12,678.14	-5,068.46	-8.40	5,068.47	3.10	-0.48	3.06
17,976.00	89.99	181.89	12,678.07	-5,164.39	-12.13	5,164.40	0.71	-0.11	-0.70
18,070.00	89.34	180.90	12,678.61	-5,258.36	-14.41	5,258.38	1.26	-0.69	-1.05
18,166.00	91.37	183.69	12,678.02	-5,354.26	-18.26	5,354.29	3.59	2.11	2.91
18,261.00	90.92	181.03	12,676.12	-5,449.16	-22.17	5,449.20	2.84	-0.47	-2.80
18,355.00	93.43	179.56	12,672.55	-5,543.08	-22.65	5,543.12	3.09	2.67	-1.56
18,450.00	94.66	179.29	12,665.85	-5,637.83	-21.70	5,637.87	1.33	1.29	-0.28
18,544.00	94.74	179.38	12,658.15	-5,731.51	-20.61	5,731.55	0.13	0.09	0.10
18,639.00	92.56	179.17	12,652.10	-5,826.31	-19.42	5,826.34	2.31	-2.29	-0.22
18,733.00	89.40	179.11	12,650.50	-5,920.27	-18.00	5,920.30	3.36	-3.36	-0.06
18,827.00	89.15	178.90	12,651.69	-6,014.25	-16.37	6,014.27	0.35	-0.27	-0.22
18,922.00	87.81	178.81	12,654.20	-6,109.19	-14.47	6,109.21	1.41	-1.41	-0.09
19,017.00	87.52	178.45	12,658.08	-6,204.09	-12.21	6,204.10	0.49	-0.31	-0.38
19,111.00	87.78	178.60	12,661.93	-6,297.98	-9.79	6,297.98	0.32	0.28	0.16
19,206.00	90.73	180.91	12,663.17	-6,392.95	-9.38	6,392.95	3.94	3.11	2.43
19,301.00	92.40	180.70	12,660.57	-6,487.90	-10.72	6,487.91	1.77	1.76	-0.22
19,395.00	90.65	179.06	12,658.07	-6,581.86	-10.52	6,581.87	2.55	-1.86	-1.74
19,490.00	89.67	177.96	12,657.80	-6,676.83	-8.05	6,676.82	1.55	-1.03	-1.16
19,585.00	89.01	179.28	12,658.90	-6,771.79	-5.76	6,771.78	1.55	-0.69	1.39
19,680.00	89.19	179.74	12,660.39	-6,866.77	-4.95	6,866.76	0.52	0.19	0.48
19,774.00	88.95	179.29	12,661.92	-6,960.76	-4.15	6,960.75	0.54	-0.26	-0.48
19,869.00	89.98	179.14	12,662.80	-7,055.74	-2.85	7,055.73	1.10	1.08	-0.16
19,963.00	92.84	180.46	12,660.49	-7,149.70	-2.52	7,149.69	3.35	3.04	1.40

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 208H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	RKB @ 3357.00usft (McVay 8)
Site:	Pitchblende Federal Com 19-30	MD Reference:	RKB @ 3357.00usft (McVay 8)
Well:	208H	North Reference:	Grid
Wellbore:	OH / 66080	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (McVay 8)	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)
20,058.00	91.94	178.14	12,656.53	-7,244.61	-1.36	7,244.58	2.62	-0.95	-2.44
20,152.00	92.06	177.70	12,653.25	-7,338.49	2.05	7,338.46	0.48	0.13	-0.47
Final Gordon MWD Survey									
20,185.06	92.06	177.70	12,652.06	-7,371.50	3.37	7,371.46	0.00	0.00	0.00
LTP:20185' MD									
20,214.00	92.06	177.70	12,651.02	-7,400.40	4.53	7,400.36	0.00	0.00	0.00
Projection to TD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
11,883.81	11,874.19	347.33	-51.17	Tie In
11,969.00	11,959.34	348.70	-48.95	First Gordon MWD Survey
20,152.00	12,653.25	-7,338.49	2.05	Final Gordon MWD Survey
20,185.06	12,652.06	-7,371.50	3.37	LTP:20185' MD
20,214.00	12,651.02	-7,400.40	4.53	Projection to TD