

**McVAY DRILLING COMPANY**

P.O. Box 2450
Hobbs, New Mexico 88241
(575) 397-3311
FAX: 39-DRILL

RECEIVED

AUG 21 15

COG
ARTESIA WEST

30-025-42293

HOBBS OCD

Well Name and Num: Black Pearl Federal #2 H
Location: Sec 1, T20S, R34E
Operator: COG
Drilling Contractor: McVay Drilling Company

SEP 14 2015

RECEIVED

The undersigned certifies that he is an authorized representative of the drilling contractor who drilled the above described well and that he has conducted deviation tests and obtained the following results:

<u>Degrees @</u>	<u>Depth</u>	<u>Degrees @</u>	<u>Depth</u>	<u>Degrees @</u>	<u>Depth</u>	<u>Degrees @</u>	<u>Depth</u>
0.10	238	5.20	6365	89.60	1190		
0.20	637	5.10	6553	90.20	12183		
0.20	1014	5.20	6931	89.60	12467		
0.60	1203	5.70	7309	89.50	12750		
0.60	1580	5.00	7780	88.40	13233		
0.50	1769	5.50	8440	90.60	13695		
1.50	2197	4.20	8629	89.50	13883		
0.10	2575	5.50	9101	88.90	14261		
0.40	2952	6.00	9474	90.90	15206		
0.40	3405	6.10	9762	89.00	15580		
1.00	3623	4.40	10234				
2.00	4000	3.10	10486				
5.40	4378	24.40	10734				
5.50	4759	55.80	10986				
5.40	5042	74.50	11148				
5.50	5512	87.00	11491				
5.20	5987	89.00	11711				

By: Muhammad Q. BannanSubscribed and sworn to before me this 13 day of August, 2015Tina FLEMENS
Notary Public, Lea County, New Mexico

SEP 16 2015

DM



July 29, 2015

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

Attn: Kanicia Castillo

RE: **Black Pearl 1 Federal No 002H**

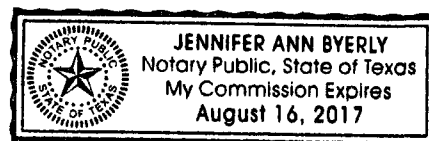
Please find enclosed a copy of the survey from 0' to 10,400' ran on the above referenced well.

Sincerely, 
Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 29 day of July,
A.D., 2015, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas





Company: Concho
Lease/Well: Black Pearl 1 Federal No/002H

Rig Name: McVay 6
State/County: New Mexico/Lea
VS-Azi: 190.03 Degrees
Latitude: 32.60891, Longitude: -103.50820
Grid North = True North -0.44 degs



Depth Reference : RKB= 18

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyrosurvey3-de_01.ut
Minimum Curvature Method
Report Date/Time: 7/29/2015 / 14:32

VES Survey International
Fort Worth, Texas
Office 817-741-3610
Surveyor: Gregg Wilson
Black Pearl 1 Federal No 002H / API 30-025-42293

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.31	24.83	100.00	0.24	0.11	-0.26	0.27	24.83	0.31
200.00	0.34	20.69	200.00	0.76	0.33	-0.81	0.83	23.37	0.04
300.00	0.14	41.44	300.00	1.13	0.52	-1.20	1.24	24.54	0.21
400.00	0.30	49.68	400.00	1.39	0.80	-1.51	1.61	29.86	0.16
500.00	0.33	75.10	499.99	1.64	1.28	-1.84	2.08	38.01	0.14
600.00	0.39	85.73	599.99	1.74	1.90	-2.04	2.58	47.55	0.09
700.00	0.47	78.64	699.99	1.85	2.64	-2.28	3.22	55.06	0.09
800.00	0.50	87.23	799.99	1.95	3.47	-2.52	3.98	60.72	0.08
900.00	0.17	125.73	899.98	1.88	4.02	-2.55	4.44	64.91	0.38
1000.00	0.29	135.46	999.98	1.61	4.32	-2.34	4.61	69.51	0.13
1100.00	0.40	140.19	1099.98	1.16	4.73	-1.97	4.87	76.20	0.11
1200.00	0.43	140.76	1199.98	0.60	5.19	-1.49	5.22	83.43	0.03
1300.00	0.37	143.89	1299.98	0.04	5.62	-1.02	5.62	89.54	0.07
1400.00	0.42	158.27	1399.97	-0.56	5.94	-0.49	5.97	95.36	0.11
1500.00	0.44	163.15	1499.97	-1.26	6.19	0.16	6.32	101.53	0.04
1600.00	0.57	172.08	1599.97	-2.12	6.37	0.98	6.71	108.39	0.15
1700.00	0.75	188.73	1699.96	-3.26	6.34	2.10	7.13	117.19	0.26
1800.00	0.92	199.65	1799.95	-4.66	5.97	3.55	7.57	127.98	0.23

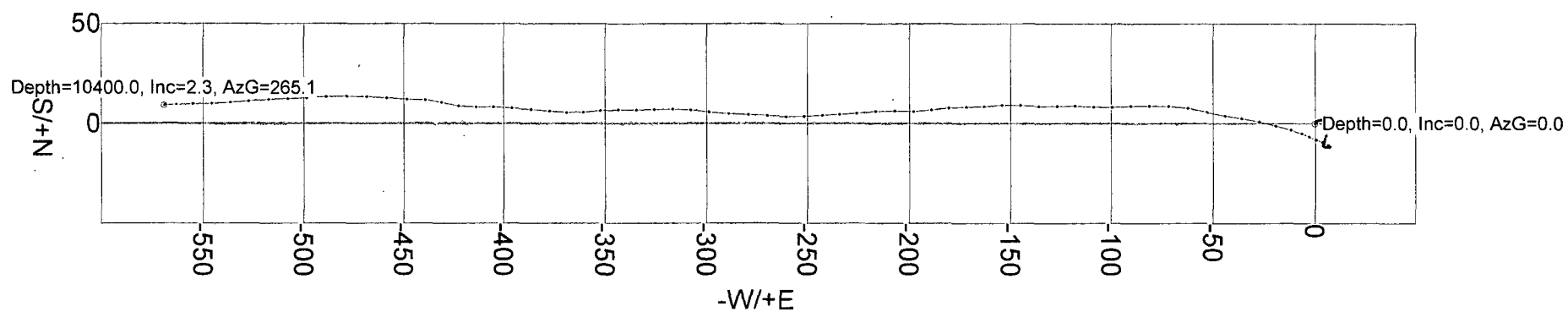
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.91	198.90	1899.94	-6.17	5.44	5.13	8.22	138.59	0.01
2000.00	0.77	199.12	1999.93	-7.56	4.96	6.58	9.04	146.73	0.14
2100.00	0.34	190.82	2099.92	-8.49	4.68	7.55	9.70	151.12	0.44
2200.00	0.50	193.20	2199.92	-9.21	4.53	8.28	10.26	153.82	0.16
2300.00	0.43	197.96	2299.92	-9.99	4.31	9.09	10.88	156.65	0.08
2400.00	0.17	208.66	2399.91	-10.48	4.13	9.60	11.26	158.50	0.26
2500.00	0.16	205.88	2499.91	-10.73	4.00	9.87	11.45	159.58	0.02
2600.00	0.03	193.31	2599.91	-10.88	3.93	10.03	11.57	160.14	0.12
2700.00	0.11	193.30	2699.91	-11.00	3.90	10.15	11.67	160.47	0.08
2800.00	0.03	31.05	2799.91	-11.07	3.89	10.22	11.73	160.61	0.14
2900.00	0.12	168.90	2899.91	-11.15	3.93	10.29	11.82	160.57	0.15
3000.00	0.26	119.44	2999.91	-11.36	4.15	10.47	12.10	159.94	0.20
3100.00	0.36	110.33	3099.91	-11.58	4.64	10.60	12.48	158.16	0.12
3200.00	0.37	99.78	3199.91	-11.75	5.26	10.65	12.87	155.89	0.07
3300.00	0.31	93.85	3299.91	-11.82	5.85	10.62	13.19	153.67	0.07
3400.00	0.34	95.83	3399.91	-11.87	6.42	10.57	13.50	151.58	0.03
3500.00	0.29	65.60	3499.91	-11.80	6.95	10.41	13.69	149.49	0.17
3600.00	0.29	57.53	3599.90	-11.56	7.39	10.10	13.72	147.41	0.04
3700.00	1.51	303.01	3699.89	-10.71	6.50	9.41	12.52	148.76	1.65
3800.00	2.11	289.43	3799.84	-9.38	3.65	8.60	10.06	158.71	0.73
3900.00	2.02	293.80	3899.78	-8.05	0.30	7.88	8.06	177.85	0.18
4000.00	2.06	294.32	3999.71	-6.60	-2.95	7.01	7.23	204.07	0.04
4100.00	2.55	292.00	4099.63	-5.03	-6.65	6.11	8.33	232.90	0.50
4200.00	3.93	285.06	4199.47	-3.30	-12.02	5.35	12.47	254.64	1.43
4300.00	4.65	286.12	4299.19	-1.28	-19.23	4.61	19.28	266.18	0.72
4400.00	5.13	282.91	4398.83	0.84	-27.48	3.96	27.50	271.75	0.55
4500.00	4.89	279.10	4498.44	2.51	-36.05	3.80	36.14	273.99	0.41
4600.00	4.64	279.02	4598.10	3.82	-44.26	3.94	44.42	274.94	0.24
4700.00	5.60	283.70	4697.70	5.61	-53.00	3.70	53.29	276.05	1.04
4800.00	5.48	281.18	4797.23	7.69	-62.42	3.30	62.89	277.03	0.27
4900.00	5.54	269.75	4896.77	8.60	-71.93	4.06	72.44	276.82	1.10
5000.00	5.35	271.95	4996.32	8.74	-81.42	5.58	81.88	276.12	0.28
5100.00	5.17	267.40	5095.90	8.69	-90.57	7.22	90.99	275.48	0.45
5200.00	5.19	264.51	5195.49	8.05	-99.57	9.41	99.90	274.62	0.26
5300.00	5.42	277.41	5295.07	8.23	-108.76	10.84	109.07	274.33	1.21
5400.00	5.11	269.32	5394.65	8.78	-117.90	11.88	118.22	274.26	0.80
5500.00	5.21	269.41	5494.24	8.68	-126.89	13.55	127.18	273.92	0.10
5600.00	5.36	268.72	5593.82	8.53	-136.09	15.30	136.36	273.59	0.17
5700.00	5.22	278.00	5693.39	9.06	-145.27	16.38	145.55	273.57	0.87

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5800.00	5.24	262.81	5792.98	9.12	-154.30	17.89	154.57	273.38	1.38
5900.00	4.91	268.74	5892.59	8.46	-163.11	20.08	163.33	272.97	0.62
6000.00	5.08	268.16	5992.21	8.22	-171.81	21.83	172.01	272.74	0.19
6100.00	4.88	264.37	6091.83	7.66	-180.47	23.89	180.64	272.43	0.39
6200.00	4.95	262.88	6191.47	6.71	-188.98	26.30	189.10	272.03	0.14
6300.00	5.40	267.92	6291.06	6.01	-197.96	28.56	198.05	271.74	0.64
6400.00	5.28	274.41	6390.63	6.19	-207.25	30.00	207.34	271.71	0.62
6500.00	5.57	263.90	6490.18	6.03	-216.65	31.80	216.74	271.59	1.03
6600.00	5.07	263.17	6589.75	4.99	-225.86	34.43	225.92	271.26	0.50
6700.00	4.55	269.72	6689.40	4.44	-234.22	36.42	234.26	271.09	0.75
6800.00	5.16	265.38	6789.04	4.06	-242.67	38.27	242.71	270.96	0.71
6900.00	5.15	267.31	6888.64	3.49	-251.63	40.39	251.66	270.79	0.17
7000.00	5.24	272.04	6988.22	3.44	-260.68	42.01	260.70	270.76	0.44
7100.00	5.45	272.76	7087.79	3.83	-269.99	43.25	270.01	270.81	0.21
7200.00	5.38	273.40	7187.34	4.34	-279.41	44.39	279.44	270.89	0.09
7300.00	5.77	271.86	7286.87	4.78	-289.11	45.65	289.15	270.95	0.41
7400.00	5.44	278.34	7386.39	5.63	-298.83	46.50	298.88	271.08	0.71
7500.00	4.97	276.01	7485.98	6.77	-307.83	46.95	307.90	271.26	0.52
7600.00	5.21	269.06	7585.59	7.15	-316.67	48.11	316.75	271.29	0.66
7700.00	5.26	267.78	7685.17	6.90	-325.79	49.95	325.87	271.21	0.13
7800.00	5.00	270.33	7784.77	6.74	-334.73	51.66	334.79	271.15	0.35
7900.00	5.14	270.08	7884.38	6.78	-343.56	53.16	343.62	271.13	0.14
8000.00	4.97	264.66	7983.99	6.38	-352.35	55.09	352.41	271.04	0.50
8100.00	4.61	264.49	8083.64	5.59	-360.66	57.31	360.71	270.89	0.37
8200.00	4.89	273.70	8183.30	5.48	-368.91	58.86	368.95	270.85	0.81
8300.00	4.80	275.28	8282.94	6.14	-377.33	59.67	377.38	270.93	0.16
8400.00	5.55	274.36	8382.53	6.89	-386.32	60.50	386.38	271.02	0.75
8500.00	5.45	275.25	8482.07	7.69	-395.87	61.37	395.94	271.11	0.13
8600.00	5.11	270.59	8581.65	8.18	-405.05	62.49	405.13	271.16	0.54
8700.00	4.76	269.82	8681.28	8.21	-413.65	63.96	413.73	271.14	0.35
8800.00	5.23	277.36	8780.90	8.78	-422.32	64.91	422.41	271.19	0.81
8900.00	4.65	286.91	8880.53	10.54	-430.72	64.63	430.85	271.40	1.01
9000.00	5.06	270.72	8980.18	11.78	-439.00	64.86	439.16	271.54	1.42
9100.00	5.74	272.01	9079.73	12.01	-448.41	66.27	448.57	271.53	0.69
9200.00	5.92	275.87	9179.22	12.71	-458.54	67.35	458.72	271.59	0.43
9300.00	5.72	271.33	9278.70	13.35	-468.65	68.47	468.84	271.63	0.50
9400.00	5.79	271.29	9378.20	13.58	-478.67	69.99	478.87	271.63	0.07
9500.00	5.90	265.38	9477.68	13.28	-488.84	72.06	489.02	271.56	0.61
9600.00	5.30	267.33	9577.20	12.65	-498.58	74.38	498.74	271.45	0.63

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
9700.00	5.28	268.53	9676.77	12.32	-507.80	76.31	507.95	271.39	0.11
9800.00	5.89	266.92	9776.30	11.92	-517.53	78.39	517.66	271.32	0.63
9900.00	5.51	264.76	9875.80	11.21	-527.43	80.82	527.55	271.22	0.43
10000.00	5.02	265.06	9975.38	10.39	-536.58	83.22	536.68	271.11	0.49
10100.00	5.55	269.15	10074.95	9.95	-545.78	85.26	545.87	271.04	0.65
10200.00	5.10	268.53	10174.52	9.76	-555.06	87.06	555.15	271.01	0.45
10300.00	4.19	266.61	10274.19	9.43	-563.16	88.80	563.24	270.96	0.92
10400.00	2.35	265.15	10374.03	9.04	-568.85	90.17	568.92	270.91	1.85

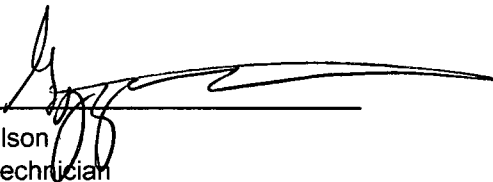


VES Survey International
Fort Worth, Texas
Office 817-741-3610
Surveyor: Gregg Wilson
Black Pearl 1 Federal No 002H / API 30-025-42293





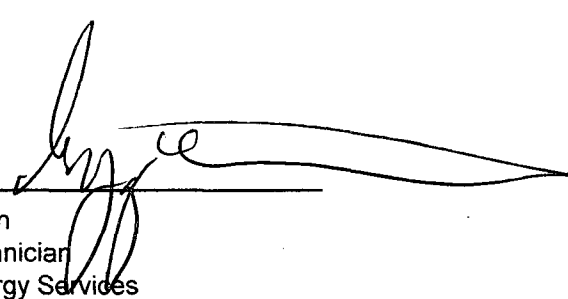
I Gregg Wilson certify that I am employed by Vaughn Energy Services. That I did on the day(s) of 07/23/15 through 07/23/15 conduct or supervise the taking of a HA Gyro survey from a depth of 0 feet to a depth of 10400 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of Concho for the Black Pearl 1 Federal No Well # 002H API # 30-025-42293 in Lea County / Parish New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Vaughn Energy Services



Gregg Wilson
Service Technician
Vaughn Energy Services



I Gregg Wilson certify that I am employed by Vaughn Energy Services. That I did on the day(s) of 07/23/15 through 07/23/15 conduct or supervise the taking of a HA Gyro survey from a depth of 0 feet to a depth of 10400 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of Concho for the Black Pearl 1 Federal No. Well # 062H API # 30-025-42293 in Lea County / Parish New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Vaughn Energy Services



Gregg Wilson
Service Technician
Vaughn Energy Services



COG Operating LLC

Lea County, NM

Black Pearl 1 Federal

#2H

OH

Design: OH

Survey Report - Geographic

29 July, 2015





TDS
Survey Report - Geographic



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM	TVD Reference:	KB @ 3712.3usft
Site:	Black Pearl 1 Federal	MD Reference:	KB @ 3712.3usft
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

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

Site:	Black Pearl 1 Federal		
Site Position:		Northing:	586,220.00 usft
From:	Map	Easting:	754,185.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 36' 32.078 N
		Longitude:	103° 30' 28.361 W
		Grid Convergence:	0.44 °

Well:	#2H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 36' 32.076 N
		Longitude:	103° 30' 29.533 W
		Ground Level:	3,694.3 usft

Wellbore:	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	6/24/2015	(°)
			Dip Angle
			(°)
			Field Strength
			(nT)
			60.45
			48,449

Design:	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			190.03

Survey Program	Date: 7/29/2015		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	10,400.0	Gyro #1 (OH)	NS-GYRO-SS
10,423.0	15,632.0	MWD #3 (OH)	MWD
			Description
			NS Gyro single shots
			MWD - Standard

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map			
Depth	(°)	(°)	Depth	(usft)	(usft)	Northing	Easting	Latitude	Longitude	
(usft)			(usft)			(usft)	(usft)			
0.0	0.00	0.00	0.0	0.0	0.0	586,219.00	754,084.80	32° 36' 32.076 N	103° 30' 29.533 W	
100.0	0.31	24.83	100.0	0.2	0.1	586,219.25	754,084.91	32° 36' 32.079 N	103° 30' 29.531 W	
200.0	0.34	20.69	200.0	0.8	0.3	586,219.77	754,085.13	32° 36' 32.084 N	103° 30' 29.529 W	
300.0	0.14	41.44	300.0	1.1	0.5	586,220.14	754,085.31	32° 36' 32.087 N	103° 30' 29.527 W	
400.0	0.30	49.68	400.0	1.4	0.8	586,220.40	754,085.60	32° 36' 32.090 N	103° 30' 29.523 W	
500.0	0.33	75.10	500.0	1.6	1.3	586,220.65	754,086.07	32° 36' 32.092 N	103° 30' 29.518 W	
600.0	0.39	85.73	600.0	1.7	1.9	586,220.74	754,086.69	32° 36' 32.093 N	103° 30' 29.510 W	
700.0	0.47	78.64	700.0	1.8	2.6	586,220.85	754,087.43	32° 36' 32.094 N	103° 30' 29.502 W	
800.0	0.50	87.23	800.0	1.9	3.5	586,220.95	754,088.27	32° 36' 32.095 N	103° 30' 29.492 W	
900.0	0.17	125.73	900.0	1.9	4.0	586,220.89	754,088.83	32° 36' 32.095 N	103° 30' 29.485 W	
1,000.0	0.29	135.46	1,000.0	1.6	4.3	586,220.62	754,089.12	32° 36' 32.092 N	103° 30' 29.482 W	



TDS
Survey Report - Geographic



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM	TVD Reference:	KB @ 3712.3usft
Site:	Black Pearl 1 Federal	MD Reference:	KB @ 3712.3usft
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,100.0	0.40	140.19	1,100.0	1.2	4.7	586,220.17	754,089.53	32° 36' 32.087 N	103° 30' 29.477 W
1,200.0	0.43	140.76	1,200.0	0.6	5.2	586,219.61	754,089.99	32° 36' 32.082 N	103° 30' 29.472 W
1,300.0	0.37	143.89	1,300.0	0.1	5.6	586,219.06	754,090.41	32° 36' 32.076 N	103° 30' 29.467 W
1,400.0	0.42	158.27	1,400.0	-0.5	5.9	586,218.46	754,090.74	32° 36' 32.070 N	103° 30' 29.463 W
1,500.0	0.44	163.15	1,500.0	-1.3	6.2	586,217.75	754,090.99	32° 36' 32.063 N	103° 30' 29.460 W
1,600.0	0.57	172.08	1,600.0	-2.1	6.4	586,216.89	754,091.17	32° 36' 32.055 N	103° 30' 29.458 W
1,700.0	0.75	188.73	1,700.0	-3.3	6.3	586,215.75	754,091.14	32° 36' 32.044 N	103° 30' 29.459 W
1,800.0	0.92	199.65	1,800.0	-4.7	6.0	586,214.35	754,090.77	32° 36' 32.030 N	103° 30' 29.463 W
1,900.0	0.91	198.90	1,899.9	-6.2	5.4	586,212.84	754,090.24	32° 36' 32.015 N	103° 30' 29.470 W
2,000.0	0.77	199.12	1,999.9	-7.5	5.0	586,211.46	754,089.76	32° 36' 32.001 N	103° 30' 29.475 W
2,100.0	0.34	190.82	2,099.9	-8.5	4.7	586,210.53	754,089.49	32° 36' 31.992 N	103° 30' 29.479 W
2,200.0	0.50	193.20	2,199.9	-9.2	4.5	586,209.81	754,089.33	32° 36' 31.985 N	103° 30' 29.481 W
2,300.0	0.43	197.96	2,299.9	-10.0	4.3	586,209.03	754,089.12	32° 36' 31.977 N	103° 30' 29.483 W
2,400.0	0.17	208.66	2,399.9	-10.5	4.1	586,208.54	754,088.93	32° 36' 31.972 N	103° 30' 29.485 W
2,500.0	0.16	205.88	2,499.9	-10.7	4.0	586,208.29	754,088.80	32° 36' 31.970 N	103° 30' 29.487 W
2,600.0	0.03	193.31	2,599.9	-10.9	3.9	586,208.14	754,088.73	32° 36' 31.968 N	103° 30' 29.488 W
2,700.0	0.11	193.30	2,699.9	-11.0	3.9	586,208.02	754,088.70	32° 36' 31.967 N	103° 30' 29.488 W
2,800.0	0.03	31.05	2,799.9	-11.1	3.9	586,207.95	754,088.69	32° 36' 31.967 N	103° 30' 29.488 W
2,900.0	0.12	168.90	2,899.9	-11.1	3.9	586,207.87	754,088.73	32° 36' 31.966 N	103° 30' 29.488 W
3,000.0	0.26	119.44	2,999.9	-11.4	4.1	586,207.65	754,088.94	32° 36' 31.964 N	103° 30' 29.485 W
3,100.0	0.36	110.33	3,099.9	-11.6	4.6	586,207.43	754,089.44	32° 36' 31.961 N	103° 30' 29.479 W
3,200.0	0.37	99.78	3,199.9	-11.7	5.3	586,207.27	754,090.05	32° 36' 31.960 N	103° 30' 29.472 W
3,300.0	0.31	93.85	3,299.9	-11.8	5.8	586,207.20	754,090.64	32° 36' 31.959 N	103° 30' 29.465 W
3,400.0	0.34	95.83	3,399.9	-11.9	6.4	586,207.15	754,091.20	32° 36' 31.958 N	103° 30' 29.459 W
3,500.0	0.29	65.60	3,499.9	-11.8	6.9	586,207.22	754,091.73	32° 36' 31.959 N	103° 30' 29.453 W
3,600.0	0.29	57.53	3,599.9	-11.5	7.4	586,207.46	754,092.17	32° 36' 31.961 N	103° 30' 29.448 W
3,700.0	1.51	303.01	3,699.9	-10.7	6.5	586,208.32	754,091.28	32° 36' 31.970 N	103° 30' 29.458 W
3,800.0	2.11	289.43	3,799.8	-9.4	3.6	586,209.65	754,088.44	32° 36' 31.983 N	103° 30' 29.491 W
3,900.0	2.02	293.80	3,899.8	-8.0	0.3	586,210.97	754,085.09	32° 36' 31.997 N	103° 30' 29.530 W
4,000.0	2.06	294.32	3,999.7	-6.6	-3.0	586,212.42	754,081.84	32° 36' 32.011 N	103° 30' 29.568 W
4,100.0	2.55	292.00	4,099.6	-5.0	-6.7	586,213.99	754,078.14	32° 36' 32.027 N	103° 30' 29.611 W
4,200.0	3.93	285.06	4,199.5	-3.3	-12.0	586,215.72	754,072.77	32° 36' 32.045 N	103° 30' 29.674 W
4,300.0	4.65	286.12	4,299.2	-1.3	-19.2	586,217.73	754,065.56	32° 36' 32.065 N	103° 30' 29.758 W
4,400.0	5.13	282.91	4,398.8	0.9	-27.5	586,219.86	754,057.31	32° 36' 32.087 N	103° 30' 29.854 W
4,500.0	4.89	279.10	4,498.4	2.5	-36.1	586,221.53	754,048.75	32° 36' 32.104 N	103° 30' 29.954 W
4,600.0	4.64	279.02	4,598.1	3.8	-44.3	586,222.84	754,040.54	32° 36' 32.118 N	103° 30' 30.050 W
4,700.0	5.60	283.70	4,697.7	5.6	-53.0	586,224.63	754,031.81	32° 36' 32.136 N	103° 30' 30.152 W
4,800.0	5.48	281.18	4,797.2	7.7	-62.4	586,226.71	754,022.38	32° 36' 32.157 N	103° 30' 30.262 W
4,900.0	5.54	269.75	4,896.8	8.6	-71.9	586,227.62	754,012.87	32° 36' 32.167 N	103° 30' 30.373 W
5,000.0	5.35	271.95	4,996.3	8.7	-81.4	586,227.75	754,003.39	32° 36' 32.169 N	103° 30' 30.484 W
5,100.0	5.17	267.40	5,095.9	8.7	-90.6	586,227.71	753,994.23	32° 36' 32.169 N	103° 30' 30.591 W
5,200.0	5.19	264.51	5,195.5	8.1	-99.6	586,227.07	753,985.22	32° 36' 32.164 N	103° 30' 30.696 W
5,300.0	5.42	277.41	5,295.1	8.2	-108.8	586,227.25	753,976.04	32° 36' 32.166 N	103° 30' 30.803 W
5,400.0	5.11	269.32	5,394.6	8.8	-117.9	586,227.80	753,966.90	32° 36' 32.172 N	103° 30' 30.910 W
5,500.0	5.21	269.41	5,494.2	8.7	-126.9	586,227.70	753,957.91	32° 36' 32.172 N	103° 30' 31.015 W
5,600.0	5.36	268.72	5,593.8	8.5	-136.1	586,227.55	753,948.70	32° 36' 32.171 N	103° 30' 31.123 W
5,700.0	5.22	278.00	5,693.4	9.1	-145.3	586,228.08	753,939.52	32° 36' 32.177 N	103° 30' 31.230 W
5,800.0	5.24	262.81	5,793.0	9.1	-154.3	586,228.14	753,930.49	32° 36' 32.179 N	103° 30' 31.336 W
5,900.0	4.91	268.74	5,892.6	8.5	-163.1	586,227.48	753,921.68	32° 36' 32.173 N	103° 30' 31.439 W
6,000.0	5.08	268.16	5,992.2	8.2	-171.8	586,227.24	753,912.97	32° 36' 32.171 N	103° 30' 31.541 W
6,100.0	4.88	264.37	6,091.8	7.7	-180.5	586,226.68	753,904.32	32° 36' 32.166 N	103° 30' 31.642 W
6,200.0	4.95	262.88	6,191.5	6.7	-189.0	586,225.73	753,895.80	32° 36' 32.157 N	103° 30' 31.741 W
6,300.0	5.40	267.92	6,291.1	6.0	-198.0	586,225.02	753,886.82	32° 36' 32.151 N	103° 30' 31.846 W
6,400.0	5.28	274.41	6,390.6	6.2	-207.3	586,225.21	753,877.53	32° 36' 32.154 N	103° 30' 31.955 W
6,500.0	5.57	263.90	6,490.2	6.0	-216.7	586,225.04	753,868.12	32° 36' 32.153 N	103° 30' 32.065 W



TDS
Survey Report - Geographic



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM	TVD Reference:	KB @ 3712.3usft
Site:	Black Pearl 1 Federal	MD Reference:	KB @ 3712.3usft
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Map Easting (usft)	Latitude	Longitude	
6,600.0	5.07	263.17	6,589.7	5.0	-225.9	586,224.00	753,858.90	32° 36' 32.143 N	103° 30' 32.173 W	
6,700.0	4.55	269.72	6,689.4	4.5	-234.2	586,223.46	753,850.55	32° 36' 32.138 N	103° 30' 32.271 W	
6,800.0	5.16	265.38	6,789.0	4.1	-242.7	586,223.08	753,842.10	32° 36' 32.135 N	103° 30' 32.369 W	
6,900.0	5.15	267.31	6,888.6	3.5	-251.7	586,222.50	753,833.13	32° 36' 32.130 N	103° 30' 32.474 W	
7,000.0	5.24	272.04	6,988.2	3.5	-260.7	586,222.46	753,824.09	32° 36' 32.130 N	103° 30' 32.580 W	
7,100.0	5.45	272.76	7,087.8	3.8	-270.0	586,222.85	753,814.78	32° 36' 32.135 N	103° 30' 32.689 W	
7,200.0	5.38	273.40	7,187.3	4.4	-279.4	586,223.35	753,805.36	32° 36' 32.141 N	103° 30' 32.799 W	
7,300.0	5.77	271.86	7,286.9	4.8	-289.1	586,223.80	753,795.65	32° 36' 32.146 N	103° 30' 32.912 W	
7,400.0	5.44	278.34	7,386.4	5.6	-298.9	586,224.65	753,785.94	32° 36' 32.155 N	103° 30' 33.026 W	
7,500.0	4.97	276.01	7,486.0	6.8	-307.9	586,225.79	753,776.94	32° 36' 32.167 N	103° 30' 33.131 W	
7,600.0	5.21	269.06	7,585.6	7.2	-316.7	586,226.17	753,768.09	32° 36' 32.171 N	103° 30' 33.234 W	
7,700.0	5.26	267.78	7,685.2	6.9	-325.8	586,225.91	753,758.97	32° 36' 32.170 N	103° 30' 33.341 W	
7,800.0	5.00	270.33	7,784.8	6.8	-334.8	586,225.76	753,750.04	32° 36' 32.169 N	103° 30' 33.445 W	
7,900.0	5.14	270.08	7,884.4	6.8	-343.6	586,225.79	753,741.20	32° 36' 32.170 N	103° 30' 33.549 W	
8,000.0	4.97	264.66	7,984.0	6.4	-352.4	586,225.40	753,732.41	32° 36' 32.167 N	103° 30' 33.651 W	
8,100.0	4.61	264.49	8,083.6	5.6	-360.7	586,224.61	753,724.09	32° 36' 32.159 N	103° 30' 33.749 W	
8,200.0	4.89	273.70	8,183.3	5.5	-369.0	586,224.50	753,715.84	32° 36' 32.159 N	103° 30' 33.845 W	
8,300.0	4.80	275.28	8,282.9	6.2	-377.4	586,225.16	753,707.42	32° 36' 32.166 N	103° 30' 33.944 W	
8,400.0	5.55	274.36	8,382.5	6.9	-386.4	586,225.91	753,698.43	32° 36' 32.174 N	103° 30' 34.049 W	
8,500.0	5.45	275.25	8,482.1	7.7	-395.9	586,226.71	753,688.88	32° 36' 32.183 N	103° 30' 34.160 W	
8,600.0	5.11	270.59	8,581.6	8.2	-405.1	586,227.19	753,679.70	32° 36' 32.188 N	103° 30' 34.267 W	
8,700.0	4.76	269.82	8,681.3	8.2	-413.7	586,227.22	753,671.10	32° 36' 32.189 N	103° 30' 34.368 W	
8,800.0	5.23	277.36	8,780.9	8.8	-422.4	586,227.80	753,662.43	32° 36' 32.196 N	103° 30' 34.469 W	
8,900.0	4.65	286.91	8,880.5	10.6	-430.8	586,229.56	753,654.03	32° 36' 32.214 N	103° 30' 34.567 W	
9,000.0	5.06	270.72	8,980.2	11.8	-439.1	586,230.79	753,645.74	32° 36' 32.227 N	103° 30' 34.664 W	
9,100.0	5.74	272.01	9,079.7	12.0	-448.5	586,231.02	753,636.33	32° 36' 32.230 N	103° 30' 34.774 W	
9,200.0	5.92	275.87	9,179.2	12.7	-458.6	586,231.73	753,626.21	32° 36' 32.237 N	103° 30' 34.892 W	
9,300.0	5.72	271.33	9,278.7	13.4	-468.7	586,232.37	753,616.09	32° 36' 32.244 N	103° 30' 35.011 W	
9,400.0	5.79	271.29	9,378.2	13.6	-478.7	586,232.60	753,606.07	32° 36' 32.248 N	103° 30' 35.128 W	
9,500.0	5.90	265.38	9,477.7	13.3	-488.9	586,232.30	753,595.90	32° 36' 32.245 N	103° 30' 35.247 W	
9,600.0	5.30	267.33	9,577.2	12.7	-498.6	586,231.67	753,586.17	32° 36' 32.240 N	103° 30' 35.360 W	
9,700.0	5.28	268.53	9,676.8	12.3	-507.8	586,231.34	753,576.95	32° 36' 32.237 N	103° 30' 35.468 W	
9,800.0	5.89	266.92	9,776.3	11.9	-517.6	586,230.94	753,567.23	32° 36' 32.234 N	103° 30' 35.582 W	
9,900.0	5.51	264.76	9,875.8	11.2	-527.5	586,230.23	753,557.33	32° 36' 32.228 N	103° 30' 35.698 W	
10,000.0	5.02	265.06	9,975.4	10.4	-536.6	586,229.41	753,548.19	32° 36' 32.220 N	103° 30' 35.805 W	
10,100.0	5.55	269.15	10,075.0	10.0	-545.8	586,228.96	753,538.99	32° 36' 32.217 N	103° 30' 35.912 W	
10,200.0	5.10	268.53	10,174.5	9.8	-555.1	586,228.78	753,529.71	32° 36' 32.216 N	103° 30' 36.021 W	
10,300.0	4.19	266.61	10,274.2	9.4	-563.2	586,228.45	753,521.62	32° 36' 32.213 N	103° 30' 36.115 W	
10,400.0	2.35	265.15	10,374.0	9.1	-568.9	586,228.06	753,515.93	32° 36' 32.210 N	103° 30' 36.182 W	
TIE-IN to VES Gyro										
10,423.0	2.30	216.30	10,397.0	8.6	-569.6	586,227.65	753,515.19	32° 36' 32.205 N	103° 30' 36.191 W	
10,486.0	3.10	201.40	10,459.9	6.0	-571.0	586,225.04	753,513.82	32° 36' 32.180 N	103° 30' 36.207 W	
10,514.0	3.30	197.40	10,487.9	4.6	-571.5	586,223.57	753,513.30	32° 36' 32.165 N	103° 30' 36.213 W	
10,546.0	4.60	204.00	10,519.8	2.5	-572.3	586,221.52	753,512.50	32° 36' 32.145 N	103° 30' 36.222 W	
10,577.0	7.10	203.70	10,550.7	-0.4	-573.6	586,218.63	753,511.23	32° 36' 32.117 N	103° 30' 36.238 W	
10,609.0	10.50	198.40	10,582.3	-5.0	-575.3	586,214.05	753,509.51	32° 36' 32.071 N	103° 30' 36.258 W	
10,637.0	13.30	194.50	10,609.7	-10.5	-576.9	586,208.51	753,507.90	32° 36' 32.017 N	103° 30' 36.277 W	
10,671.0	17.10	190.70	10,642.5	-19.2	-578.8	586,199.81	753,505.99	32° 36' 31.931 N	103° 30' 36.301 W	
10,703.0	20.80	187.90	10,672.7	-29.5	-580.5	586,189.55	753,504.34	32° 36' 31.829 N	103° 30' 36.321 W	
10,734.0	24.40	187.20	10,701.4	-41.3	-582.0	586,177.74	753,502.78	32° 36' 31.713 N	103° 30' 36.340 W	
10,766.0	28.00	185.80	10,730.1	-55.3	-583.6	586,163.71	753,501.19	32° 36' 31.574 N	103° 30' 36.360 W	
10,797.0	31.50	185.10	10,757.0	-70.6	-585.1	586,148.40	753,499.73	32° 36' 31.423 N	103° 30' 36.378 W	
10,829.0	34.90	184.80	10,783.7	-88.1	-586.6	586,130.94	753,498.23	32° 36' 31.250 N	103° 30' 36.398 W	
10,860.0	38.90	184.90	10,808.5	-106.6	-588.1	586,112.40	753,496.65	32° 36' 31.067 N	103° 30' 36.418 W	
10,892.0	43.30	185.40	10,832.6	-127.5	-590.0	586,091.45	753,494.76	32° 36' 30.859 N	103° 30' 36.442 W	



TDS
Survey Report - Geographic



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM	TVD Reference:	KB @ 3712.3usft
Site:	Black Pearl 1 Federal	MD Reference:	KB @ 3712.3usft
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,923.0	47.10	184.90	10,854.5	-149.5	-592.0	586,069.55	753,492.79	32° 36' 30.643 N	103° 30' 36.467 W
10,955.0	51.30	184.70	10,875.4	-173.6	-594.0	586,045.42	753,490.76	32° 36' 30.404 N	103° 30' 36.493 W
10,986.0	55.80	184.10	10,893.8	-198.4	-595.9	586,020.56	753,488.85	32° 36' 30.158 N	103° 30' 36.517 W
11,018.0	60.00	182.90	10,910.8	-225.5	-597.6	585,993.51	753,487.21	32° 36' 29.891 N	103° 30' 36.539 W
11,049.0	63.60	182.20	10,925.4	-252.8	-598.8	585,966.22	753,485.99	32° 36' 29.621 N	103° 30' 36.555 W
11,080.0	67.50	182.50	10,938.3	-281.0	-600.0	585,938.03	753,484.84	32° 36' 29.342 N	103° 30' 36.572 W
11,112.0	71.00	183.00	10,949.6	-310.9	-601.4	585,908.15	753,483.40	32° 36' 29.047 N	103° 30' 36.591 W
11,148.0	74.50	184.10	10,960.3	-345.2	-603.5	585,873.84	753,481.27	32° 36' 28.707 N	103° 30' 36.619 W
11,176.0	76.90	185.40	10,967.2	-372.2	-605.8	585,846.80	753,479.02	32° 36' 28.440 N	103° 30' 36.648 W
11,207.0	81.00	185.90	10,973.1	-402.5	-608.8	585,816.53	753,476.02	32° 36' 28.141 N	103° 30' 36.686 W
11,239.0	84.70	185.80	10,977.1	-434.1	-612.0	585,784.95	753,472.79	32° 36' 27.828 N	103° 30' 36.726 W
11,270.0	89.00	185.10	10,978.8	-464.9	-614.9	585,754.14	753,469.85	32° 36' 27.524 N	103° 30' 36.763 W
11,333.0	93.20	184.50	10,977.6	-527.6	-620.2	585,691.39	753,464.58	32° 36' 26.903 N	103° 30' 36.831 W
11,364.0	92.20	184.30	10,976.2	-558.5	-622.6	585,660.52	753,462.20	32° 36' 26.598 N	103° 30' 36.861 W
11,396.0	91.20	184.00	10,975.2	-590.4	-624.9	585,628.61	753,459.89	32° 36' 26.282 N	103° 30' 36.891 W
11,428.0	89.00	184.00	10,975.1	-622.3	-627.1	585,596.69	753,457.66	32° 36' 25.967 N	103° 30' 36.920 W
11,459.0	87.30	183.70	10,976.1	-653.2	-629.2	585,565.78	753,455.58	32° 36' 25.661 N	103° 30' 36.947 W
11,491.0	87.00	183.60	10,977.7	-685.1	-631.3	585,533.89	753,453.54	32° 36' 25.346 N	103° 30' 36.974 W
11,522.0	87.30	183.30	10,979.3	-716.0	-633.1	585,502.98	753,451.68	32° 36' 25.040 N	103° 30' 36.999 W
11,585.0	88.00	183.30	10,981.9	-778.9	-636.7	585,440.14	753,448.06	32° 36' 24.418 N	103° 30' 37.047 W
11,648.0	88.40	183.70	10,983.8	-841.7	-640.6	585,377.29	753,444.21	32° 36' 23.797 N	103° 30' 37.097 W
11,711.0	89.00	182.90	10,985.3	-904.6	-644.2	585,314.41	753,440.59	32° 36' 23.175 N	103° 30' 37.145 W
11,805.0	90.60	182.40	10,985.6	-998.5	-648.6	585,220.51	753,436.24	32° 36' 22.246 N	103° 30' 37.205 W
11,900.0	89.60	182.40	10,985.4	-1,093.4	-652.5	585,125.60	753,432.26	32° 36' 21.307 N	103° 30' 37.260 W
11,994.0	90.20	182.20	10,985.6	-1,187.3	-656.3	585,031.67	753,428.49	32° 36' 20.378 N	103° 30' 37.312 W
12,089.0	89.40	182.60	10,985.9	-1,282.2	-660.3	584,936.76	753,424.51	32° 36' 19.439 N	103° 30' 37.367 W
12,183.0	90.20	182.60	10,986.3	-1,376.1	-664.5	584,842.86	753,420.25	32° 36' 18.511 N	103° 30' 37.426 W
12,278.0	88.70	182.40	10,987.2	-1,471.0	-668.7	584,747.96	753,416.10	32° 36' 17.572 N	103° 30' 37.483 W
12,372.0	90.00	182.50	10,988.2	-1,565.0	-672.7	584,654.05	753,412.09	32° 36' 16.643 N	103° 30' 37.538 W
12,467.0	89.60	182.90	10,988.6	-1,659.8	-677.2	584,559.16	753,407.61	32° 36' 15.704 N	103° 30' 37.599 W
12,561.0	90.80	183.00	10,988.2	-1,753.7	-682.0	584,465.28	753,402.77	32° 36' 14.776 N	103° 30' 37.664 W
12,656.0	90.60	183.50	10,987.1	-1,848.6	-687.4	584,370.44	753,397.39	32° 36' 13.838 N	103° 30' 37.736 W
12,750.0	89.50	183.40	10,987.0	-1,942.4	-693.1	584,276.61	753,391.73	32° 36' 12.910 N	103° 30' 37.810 W
12,845.0	88.90	182.70	10,988.3	-2,037.2	-698.1	584,181.76	753,386.68	32° 36' 11.972 N	103° 30' 37.878 W
12,939.0	89.80	182.90	10,989.4	-2,131.1	-702.7	584,087.88	753,382.09	32° 36' 11.043 N	103° 30' 37.940 W
13,034.0	88.20	182.30	10,991.0	-2,226.0	-707.0	583,992.99	753,377.78	32° 36' 10.105 N	103° 30' 37.999 W
13,128.0	88.40	181.80	10,993.8	-2,319.9	-710.4	583,899.10	753,374.42	32° 36' 9.176 N	103° 30' 38.047 W
13,223.0	88.40	181.50	10,996.5	-2,414.8	-713.1	583,804.17	753,371.68	32° 36' 8.237 N	103° 30' 38.087 W
13,317.0	89.50	182.50	10,998.2	-2,508.8	-716.4	583,710.25	753,368.40	32° 36' 7.308 N	103° 30' 38.134 W
13,411.0	90.00	182.20	10,998.6	-2,602.7	-720.3	583,616.33	753,364.55	32° 36' 6.379 N	103° 30' 38.188 W
13,506.0	89.90	182.60	10,998.7	-2,697.6	-724.2	583,521.41	753,360.57	32° 36' 5.440 N	103° 30' 38.243 W
13,600.0	91.30	184.20	10,997.7	-2,791.4	-729.8	583,427.59	753,354.99	32° 36' 4.512 N	103° 30' 38.316 W
13,695.0	90.60	184.10	10,996.1	-2,886.2	-736.7	583,332.85	753,348.12	32° 36' 3.575 N	103° 30' 38.405 W
13,789.0	90.80	183.80	10,995.0	-2,979.9	-743.2	583,239.08	753,341.65	32° 36' 2.648 N	103° 30' 38.489 W
13,883.0	89.50	183.80	10,994.7	-3,073.7	-749.4	583,145.29	753,335.42	32° 36' 1.720 N	103° 30' 38.571 W
13,978.0	89.90	183.40	10,995.2	-3,168.5	-755.3	583,050.48	753,329.45	32° 36' 0.782 N	103° 30' 38.649 W
14,072.0	89.50	184.40	10,995.7	-3,262.3	-761.7	582,956.70	753,323.06	32° 35' 59.855 N	103° 30' 38.732 W
14,167.0	90.00	183.90	10,996.2	-3,357.1	-768.6	582,861.95	753,316.18	32° 35' 58.918 N	103° 30' 38.821 W
14,261.0	88.90	184.20	10,997.1	-3,450.8	-775.3	582,768.19	753,309.54	32° 35' 57.991 N	103° 30' 38.907 W
14,355.0	89.10	184.40	10,998.7	-3,544.5	-782.3	582,674.47	753,302.50	32° 35' 57.064 N	103° 30' 38.998 W
14,450.0	89.00	184.30	11,000.3	-3,639.2	-789.5	582,579.76	753,295.29	32° 35' 56.127 N	103° 30' 39.091 W
14,545.0	90.10	183.90	11,001.0	-3,734.0	-796.3	582,485.00	753,288.50	32° 35' 55.190 N	103° 30' 39.179 W
14,639.0	89.80	183.20	11,001.1	-3,827.8	-802.1	582,391.19	753,282.68	32° 35' 54.262 N	103° 30' 39.255 W
14,734.0	90.00	182.60	11,001.3	-3,922.7	-806.9	582,296.31	753,277.87	32° 35' 53.324 N	103° 30' 39.320 W
14,828.0	90.10	182.00	11,001.2	-4,016.6	-810.7	582,202.38	753,274.10	32° 35' 52.395 N	103° 30' 39.373 W



TDS
Survey Report - Geographic



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM	TVD Reference:	KB @ 3712.3usft
Site:	Black Pearl 1 Federal	MD Reference:	KB @ 3712.3usft
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,923.0	90.60	182.80	11,000.6	-4,111.5	-814.7	582,107.47	753,270.12	32° 35' 51.456 N	103° 30' 39.428 W
15,017.0	91.00	182.50	10,999.3	-4,205.4	-819.0	582,013.58	753,265.78	32° 35' 50.527 N	103° 30' 39.487 W
15,112.0	90.50	183.70	10,998.0	-4,300.3	-824.2	581,918.73	753,260.64	32° 35' 49.589 N	103° 30' 39.556 W
15,206.0	90.90	183.10	10,996.9	-4,394.1	-829.7	581,824.90	753,255.07	32° 35' 48.661 N	103° 30' 39.629 W
15,300.0	89.70	184.20	10,996.4	-4,487.9	-835.7	581,731.10	753,249.08	32° 35' 47.734 N	103° 30' 39.708 W
15,395.0	90.20	184.00	10,996.5	-4,582.7	-842.5	581,636.34	753,242.29	32° 35' 46.797 N	103° 30' 39.796 W
15,489.0	88.90	183.50	10,997.2	-4,676.5	-848.7	581,542.55	753,236.14	32° 35' 45.869 N	103° 30' 39.876 W
15,580.0	89.00	183.10	10,998.9	-4,767.3	-853.9	581,451.71	753,230.91	32° 35' 44.971 N	103° 30' 39.945 W
Final MWD Survey									
15,632.0	89.00	183.10	10,999.8	-4,819.2	-856.7	581,399.80	753,228.09	32° 35' 44.457 N	103° 30' 39.983 W
Projection to Bit/TD									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,400.0	10,374.0	9.1	-568.9	TIE-IN to VES Gyro
15,580.0	10,998.9	-4,767.3	-853.9	Final MWD Survey
15,632.0	10,999.8	-4,819.2	-856.7	Projection to Bit/TD

Checked By: _____ Approved By: _____ Date: _____