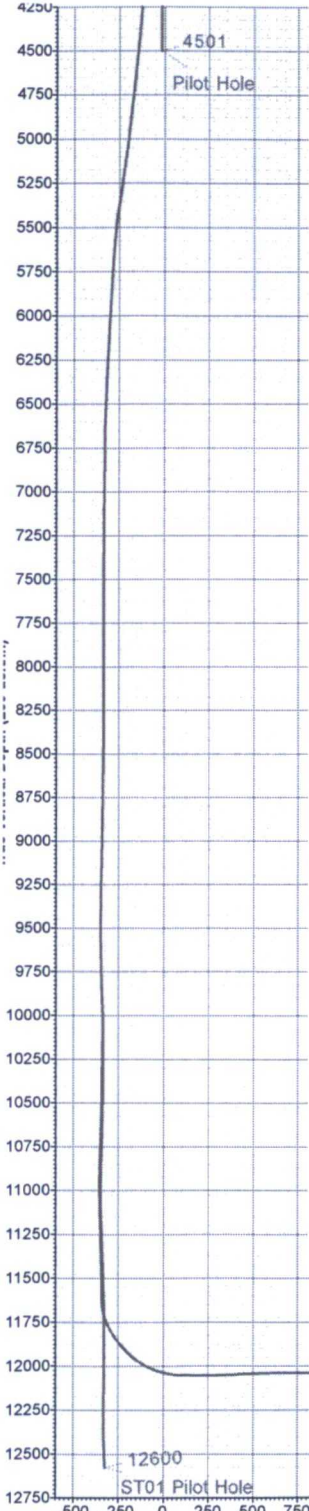




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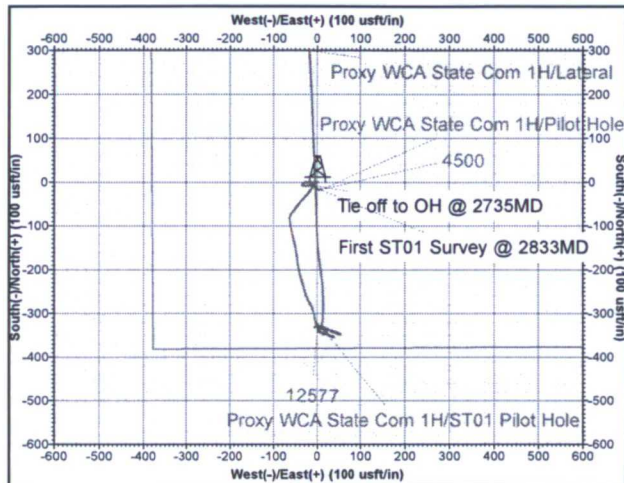
GE 3274.60 = 25.6 @ 3300.20usft (Precision 104)

Ground Level: 3274.60

Project: Lea County, NM (NAD 83)
 Site: Proxy WCA State Com
 Well: Proxy WCA State Com 1H
 Wellbore: Lateral
 Design: Lateral
 Rig: Precision 104

WELL DETAILS

+N/-S	+E/-W	Northing	Ground Level: Easting	Latitude	Longitude
0.00	0.00	426218.63	3274.60 852243.40	32.16776298	-103.32856111



LEGEND

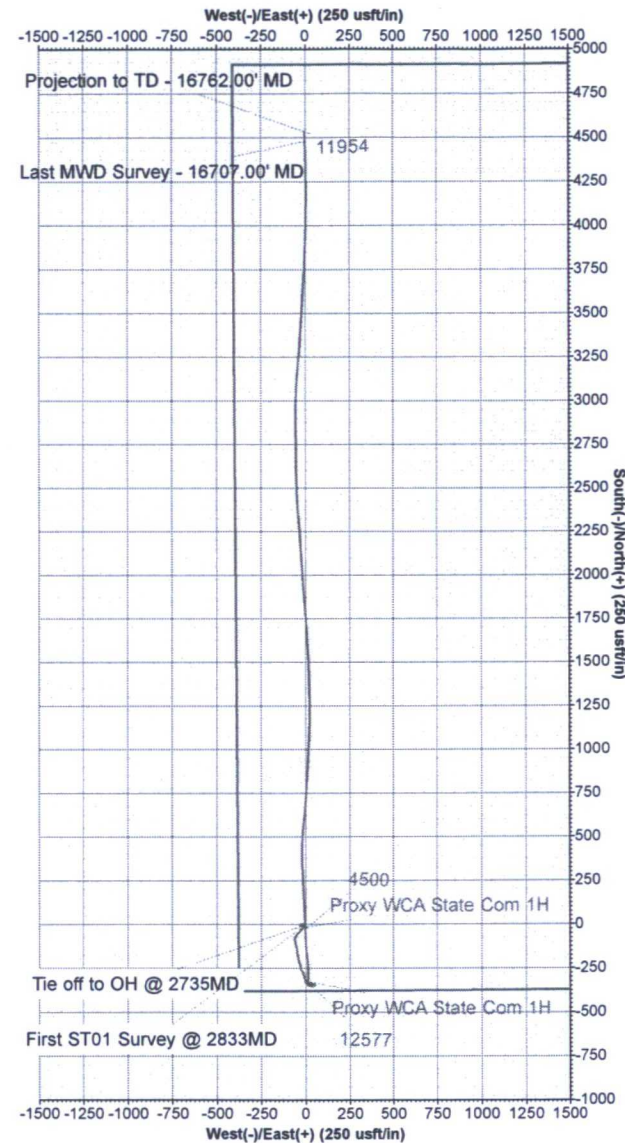
- Proxy WCA State Com 1H, Pilot Hole, Pilot Hole V0
- Proxy WCA State Com 1H, ST01 Pilot Hole, ST01 Pilot Hole V0
- Lateral

Map System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone Name: New Mexico Eastern Zone

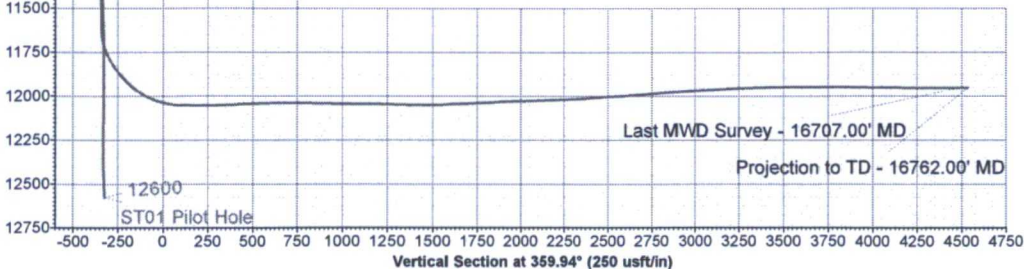


Azimuths to Grid North
 True North: -0.54°
 Magnetic North: 6.32°

Magnetic Field
 Strength: 47917.7snT
 Dip Angle: 60.03°
 Date: 12/26/2017
 Model: BGGM2017



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 APR 04 2018
 HOBBS OCD



One Energy Partners

Lea County, NM (NAD 83) Proxy WCA State Com

API#

Proxy WCA State Com 1H

380' FSL, 380' FWL

Pilot Hole

Design: Pilot Hole

Sperry Drilling Services Combo Report

16 February, 2018

Well Coordinates: 32° 10' 03.95" N
103° 19' 42.82" W

North American Datum 1983
New Mexico Eastern Zone
426,218.63 N
852,243.40 E

Ground Level: 3,274.60 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Centered on Well Proxy WCA State Com 1H
GE 3274.60 = 25.6 @ 3300.20usft (Precision 104)

N

Grid

Midcon (2 decimal)

Version: 5000.1 Build: 81E

Report Version: Midcon Combo v1.11

HALLIBURTON

Design Report for Proxy WCA State Com 1H - Pilot Hole

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
					Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)			
0.00	0.00	0.00	-3,300.20	0.00	0.00 N	0.00 E	426,218.63	852,243.40	0.00	0.00	
236.00	0.48	250.48	-3,064.20	236.00	0.33 S	0.93 W	426,218.30	852,242.47	0.20	-0.32	
330.00	0.53	254.61	-2,970.21	329.99	0.58 S	1.72 W	426,218.05	852,241.68	0.07	-0.56	
422.00	0.48	277.11	-2,878.21	421.99	0.64 S	2.51 W	426,217.99	852,240.89	0.22	-0.62	
540.00	0.57	279.92	-2,760.21	539.99	0.48 S	3.58 W	426,218.15	852,239.82	0.08	-0.44	
692.00	0.97	268.50	-2,608.23	691.97	0.38 S	5.61 W	426,218.25	852,237.79	0.28	-0.32	
784.00	1.10	269.90	-2,516.24	783.96	0.41 S	7.28 W	426,218.22	852,236.12	0.14	-0.33	
851.00	1.45	261.73	-2,449.26	850.94	0.53 S	8.76 W	426,218.10	852,234.64	0.59	-0.43	
964.00	1.85	269.10	-2,336.31	963.89	0.76 S	12.00 W	426,217.87	852,231.40	0.40	-0.63	
1,056.00	1.89	269.73	-2,244.36	1,055.84	0.79 S	15.00 W	426,217.84	852,228.40	0.05	-0.63	
1,149.00	1.89	274.74	-2,151.41	1,148.79	0.67 S	18.06 W	426,217.96	852,225.34	0.18	-0.48	
1,242.00	2.11	272.28	-2,058.46	1,241.74	0.48 S	21.30 W	426,218.15	852,222.10	0.25	-0.25	
1,335.00	1.93	277.20	-1,965.52	1,334.68	0.21 S	24.56 W	426,218.42	852,218.84	0.27	0.05	
1,430.00	1.76	263.58	-1,870.57	1,429.63	0.18 S	27.60 W	426,218.45	852,215.80	0.49	0.12	
1,525.00	1.27	246.61	-1,775.60	1,524.60	0.76 S	30.02 W	426,217.87	852,213.38	0.69	-0.43	
1,618.00	0.92	229.56	-1,682.62	1,617.58	1.65 S	31.53 W	426,216.98	852,211.87	0.51	-1.31	
1,712.00	1.05	223.85	-1,588.63	1,711.57	2.76 S	32.70 W	426,215.87	852,210.70	0.17	-2.41	
1,807.00	1.05	213.48	-1,493.65	1,806.55	4.12 S	33.78 W	426,214.51	852,209.62	0.20	-3.75	
1,900.00	1.05	207.94	-1,400.67	1,899.53	5.58 S	34.65 W	426,213.05	852,208.75	0.11	-5.20	
1,992.00	1.05	137.10	-1,308.68	1,991.52	6.94 S	34.48 W	426,211.69	852,208.92	1.32	-6.57	
2,085.00	1.80	99.40	-1,215.71	2,084.49	7.80 S	32.45 W	426,210.83	852,210.95	1.25	-7.45	
2,177.00	1.98	97.02	-1,123.76	2,176.44	8.23 S	29.45 W	426,210.40	852,213.95	0.21	-7.92	
2,270.00	2.15	87.27	-1,030.82	2,269.38	8.35 S	26.11 W	426,210.28	852,217.29	0.42	-8.07	
2,362.00	2.46	82.43	-938.89	2,361.31	8.01 S	22.43 W	426,210.62	852,220.97	0.40	-7.76	
2,455.00	1.71	81.73	-845.95	2,454.25	7.54 S	19.08 W	426,211.09	852,224.32	0.81	-7.34	
2,548.00	1.45	85.42	-752.99	2,547.21	7.25 S	16.54 W	426,211.38	852,226.86	0.30	-7.07	
2,642.00	1.23	93.51	-659.01	2,641.19	7.22 S	14.34 W	426,211.41	852,229.06	0.31	-7.06	
2,735.00	1.19	83.75	-566.03	2,734.17	7.17 S	12.39 W	426,211.46	852,231.01	0.23	-7.04	
2,830.00	1.10	89.03	-471.05	2,829.15	7.05 S	10.49 W	426,211.58	852,232.91	0.15	-6.94	
2,923.00	1.14	99.13	-378.07	2,922.13	7.18 S	8.69 W	426,211.45	852,234.71	0.22	-7.09	
3,018.00	0.79	93.95	-283.08	3,017.12	7.38 S	7.10 W	426,211.25	852,236.30	0.38	-7.30	
3,110.00	0.75	136.13	-191.09	3,109.11	7.85 S	6.05 W	426,210.78	852,237.35	0.60	-7.79	
3,203.00	0.75	170.32	-98.10	3,202.10	8.89 S	5.53 W	426,209.74	852,237.87	0.47	-8.83	
3,297.00	0.40	156.17	-4.10	3,296.10	9.80 S	5.29 W	426,208.83	852,238.11	0.40	-9.74	
3,390.00	0.75	131.83	88.89	3,389.09	10.50 S	4.71 W	426,208.13	852,238.69	0.45	-10.45	
3,482.00	0.79	146.68	180.88	3,481.08	11.43 S	3.91 W	426,207.20	852,239.49	0.22	-11.39	
3,575.00	0.66	134.73	273.88	3,574.08	12.35 S	3.18 W	426,206.28	852,240.22	0.21	-12.31	
3,667.00	0.79	141.67	365.87	3,666.07	13.22 S	2.41 W	426,205.41	852,240.99	0.17	-13.19	
3,759.00	0.88	137.28	457.86	3,758.06	14.23 S	1.53 W	426,204.40	852,241.87	0.12	-14.22	
3,854.00	0.84	127.08	552.85	3,853.05	15.19 S	0.48 W	426,203.44	852,242.92	0.17	-15.18	
3,948.00	0.79	134.55	646.84	3,947.04	16.06 S	0.53 E	426,202.57	852,243.93	0.12	-16.06	

Design Report for Proxy WCA State Com 1H - Pilot Hole

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
					Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)			
4,042.00	0.92	96.67	740.83	4,041.03	16.60 S	1.74 E	426,202.03	852,245.14	0.60	-16.62	
4,136.00	0.97	99.75	834.82	4,135.02	16.82 S	3.27 E	426,201.81	852,246.67	0.08	-16.86	
4,231.00	0.79	94.91	929.80	4,230.00	17.02 S	4.72 E	426,201.61	852,248.12	0.20	-17.07	
4,323.00	0.75	84.98	1,021.80	4,322.00	17.02 S	5.95 E	426,201.61	852,249.35	0.15	-17.08	
4,416.00	0.92	91.66	1,114.79	4,414.99	16.99 S	7.30 E	426,201.64	852,250.70	0.21	-17.06	
4,501.00	0.92	91.66	1,199.78	4,499.98	17.03 S	8.67 E	426,201.60	852,252.07	0.00	-17.12	

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	359.38	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
236.00	4,416.00	Survey #1	MWD
4,501.00	4,501.00	Projection to TD	Blind (OWSG)

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (°)	+N/-S (°)	+E/-W (°)	Northing (°)	Easting (°)	Latitude	Longitude
()									

Directional Difficulty Index

Average Dogleg over Survey:	0.32 °/100usft	Maximum Dogleg over Survey:	1.32 °/100usft at 1,992.00 usft
Net Tortousity applicable to Plans:	0.32 °/100usft	Directional Difficulty Index:	3.100

Design Report for Proxy WCA State Com 1H - Pilot Hole

Audit Info

North Reference Sheet for Proxy WCA State Com - Proxy WCA State Com 1H - Pilot Hole

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to GE 3274.60 = 25.6 @ 3300.20usft (Precision 104). Northing and Easting are relative to Proxy WCA State Com 1H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -104.33333333°, Longitude Origin:0.00000000°, Latitude Origin:0.00000000°

False Easting: 541,337.50usft, False Northing: 0.00usft, Scale Reduction: 1.00001980

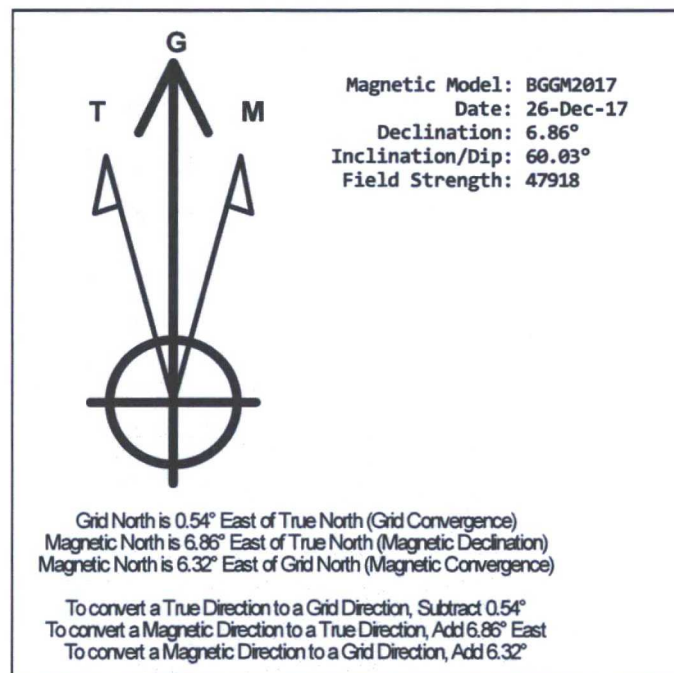
Grid Coordinates of Well: 426,218.63 usft N, 852,243.40 usft E

Geographical Coordinates of Well: 32° 10' 03.95" N, 103° 19' 42.82" W

Grid Convergence at Surface is: 0.54°

Based upon Minimum Curvature type calculations, at a Measured Depth of 4,501.00usft
the Bottom Hole Displacement is 19.10usft in the Direction of 153.03° (Grid).

Magnetic Convergence at surface is: -6.32° (26 December 2017, , BGGM2017)



Precision 104

One Energy Partners

Lea County, NM (NAD 83) Proxy WCA State Com

API#

Proxy WCA State Com 1H

380' FSL, 380' FWL

ST01 Pilot Hole

Design: ST01 Pilot Hole

Sperry Drilling Services Combo Report

16 February, 2018

Well Coordinates: 32° 10' 03.95" N
103° 19' 42.82" W

North American Datum 1983
New Mexico Eastern Zone
426,218.63 N
852,243.40 E

Ground Level: 3,274.60 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Centered on Well Proxy WCA State Com 1H
GE 3274.60 = 25.6 @ 3300.20usft (Precision 104)

N

Grid

Midcon (2 decimal)

Version: 5000.1 Build: 81E

Report Version: Midcon Combo v1.11

HALLIBURTON

Design Report for Proxy WCA State Com 1H - ST01 Pilot Hole

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
					Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)			
0.00	0.00	0.00	-3,300.20	0.00	0.00 N	0.00 E	426,218.63	852,243.40	0.00	0.00	
236.00	0.48	250.48	-3,064.20	236.00	0.33 S	0.93 W	426,218.30	852,242.47	0.20	0.32	
330.00	0.53	254.61	-2,970.21	329.99	0.58 S	1.72 W	426,218.05	852,241.68	0.07	0.56	
422.00	0.48	277.11	-2,878.21	421.99	0.64 S	2.51 W	426,217.99	852,240.89	0.22	0.62	
540.00	0.57	279.92	-2,760.21	539.99	0.48 S	3.58 W	426,218.15	852,239.82	0.08	0.44	
692.00	0.97	268.50	-2,608.23	691.97	0.38 S	5.61 W	426,218.25	852,237.79	0.28	0.32	
784.00	1.10	269.90	-2,516.24	783.96	0.41 S	7.28 W	426,218.22	852,236.12	0.14	0.33	
851.00	1.45	261.73	-2,449.26	850.94	0.53 S	8.76 W	426,218.10	852,234.64	0.59	0.43	
964.00	1.85	269.10	-2,336.31	963.89	0.76 S	12.00 W	426,217.87	852,231.40	0.40	0.63	
1,056.00	1.89	269.73	-2,244.36	1,055.84	0.79 S	15.00 W	426,217.84	852,228.40	0.05	0.63	
1,149.00	1.89	274.74	-2,151.41	1,148.79	0.67 S	18.06 W	426,217.96	852,225.34	0.18	0.48	
1,242.00	2.11	272.28	-2,058.46	1,241.74	0.48 S	21.30 W	426,218.15	852,222.10	0.25	0.25	
1,335.00	1.93	277.20	-1,965.52	1,334.68	0.21 S	24.56 W	426,218.42	852,218.84	0.27	-0.05	
1,430.00	1.76	263.58	-1,870.57	1,429.63	0.18 S	27.60 W	426,218.45	852,215.80	0.49	-0.12	
1,525.00	1.27	246.61	-1,775.60	1,524.60	0.76 S	30.02 W	426,217.87	852,213.38	0.69	0.43	
1,618.00	0.92	229.56	-1,682.62	1,617.58	1.65 S	31.53 W	426,216.98	852,211.87	0.51	1.31	
1,712.00	1.05	223.85	-1,588.63	1,711.57	2.76 S	32.70 W	426,215.87	852,210.70	0.17	2.41	
1,807.00	1.05	213.48	-1,493.65	1,806.55	4.12 S	33.78 W	426,214.51	852,209.62	0.20	3.75	
1,900.00	1.05	207.94	-1,400.67	1,899.53	5.58 S	34.65 W	426,213.05	852,208.75	0.11	5.20	
1,992.00	1.05	137.10	-1,308.68	1,991.52	6.94 S	34.48 W	426,211.69	852,208.92	1.32	6.57	
2,085.00	1.80	99.40	-1,215.71	2,084.49	7.80 S	32.45 W	426,210.83	852,210.95	1.25	7.45	
2,177.00	1.98	97.02	-1,123.76	2,176.44	8.23 S	29.45 W	426,210.40	852,213.95	0.21	7.92	
2,270.00	2.15	87.27	-1,030.82	2,269.38	8.35 S	26.11 W	426,210.28	852,217.29	0.42	8.07	
2,362.00	2.46	82.43	-938.89	2,361.31	8.01 S	22.43 W	426,210.62	852,220.97	0.40	7.76	
2,455.00	1.71	81.73	-845.95	2,454.25	7.54 S	19.08 W	426,211.09	852,224.32	0.81	7.34	
2,548.00	1.45	85.42	-752.99	2,547.21	7.25 S	16.54 W	426,211.38	852,226.86	0.30	7.07	
2,642.00	1.23	93.51	-659.01	2,641.19	7.22 S	14.34 W	426,211.41	852,229.06	0.31	7.06	
2,735.00	1.19	83.75	-566.03	2,734.17	7.17 S	12.39 W	426,211.46	852,231.01	0.23	7.04	
2,833.00	2.90	187.55	-468.08	2,832.12	9.52 S	11.70 W	426,209.11	852,231.70	3.46	9.39	Tie off to OH @ 2735MD
2,926.00	7.60	213.30	-375.48	2,924.72	17.00 S	15.39 W	426,201.63	852,228.01	5.53	16.83	First ST01 Survey @ 2833MD
3,021.00	9.54	223.85	-281.54	3,018.66	27.93 S	24.29 W	426,190.70	852,219.11	2.62	27.66	
3,113.00	8.53	219.89	-190.69	3,109.51	38.66 S	33.95 W	426,179.97	852,209.45	1.29	38.29	
3,206.00	7.25	217.61	-98.57	3,201.63	48.60 S	41.96 W	426,170.03	852,201.44	1.42	48.15	
3,300.00	5.63	216.29	-5.16	3,295.04	57.02 S	48.30 W	426,161.61	852,195.10	1.73	56.49	
3,393.00	5.36	214.71	87.41	3,387.61	64.27 S	53.48 W	426,154.36	852,189.92	0.33	63.68	
3,485.00	5.41	215.32	179.00	3,479.20	71.34 S	58.43 W	426,147.29	852,184.97	0.08	70.70	
3,578.00	3.78	209.17	271.70	3,571.90	77.59 S	62.46 W	426,141.04	852,180.94	1.83	76.91	
3,670.00	3.82	179.38	363.51	3,663.71	83.30 S	63.91 W	426,135.33	852,179.49	2.12	82.61	
3,762.00	4.13	168.04	455.29	3,755.49	89.61 S	63.19 W	426,129.02	852,180.21	0.92	88.92	
3,857.00	4.04	168.04	550.05	3,850.25	96.23 S	61.78 W	426,122.40	852,181.62	0.09	95.56	
3,951.00	4.00	167.78	643.82	3,944.02	102.67 S	60.40 W	426,115.96	852,183.00	0.05	102.01	

Design Report for Proxy WCA State Com 1H - ST01 Pilot Hole

Measured		Grid	TVD below	Vertical	Local Coordinates		Map Coordinates		Dogleg	Vertical	Comments
Depth (usft)	Inclination (°)	Azimuth (°)	System (usft)	Depth (usft)	Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)	Rate (°/100usft)	Section (usft)	
4,045.00	4.22	167.86	737.57	4,037.77	109.26 S	58.98 W	426,109.37	852,184.42	0.23	108.61	
4,139.00	4.48	170.32	831.30	4,131.50	116.26 S	57.64 W	426,102.37	852,185.76	0.34	115.63	
4,234.00	4.57	164.87	926.01	4,226.21	123.57 S	56.03 W	426,095.06	852,187.37	0.46	122.96	
4,326.00	4.75	169.53	1,017.70	4,317.90	130.85 S	54.38 W	426,087.78	852,189.02	0.46	130.26	
4,419.00	5.19	167.16	1,110.35	4,410.55	138.74 S	52.74 W	426,079.89	852,190.66	0.52	138.16	
4,513.00	5.54	169.18	1,203.94	4,504.14	147.34 S	50.95 W	426,071.29	852,192.45	0.42	146.78	
4,606.00	5.67	171.55	1,296.50	4,596.70	156.30 S	49.43 W	426,062.33	852,193.97	0.29	155.75	
4,699.00	5.67	170.85	1,389.04	4,689.24	165.38 S	48.02 W	426,053.25	852,195.38	0.07	164.85	
4,792.00	6.15	173.14	1,481.55	4,781.75	174.86 S	46.70 W	426,043.77	852,196.70	0.57	174.34	
4,886.00	6.42	172.78	1,574.98	4,875.18	185.07 S	45.44 W	426,033.56	852,197.96	0.29	184.57	
4,979.00	7.34	170.24	1,667.31	4,967.51	196.09 S	43.78 W	426,022.54	852,199.62	1.04	195.60	
5,073.00	7.38	162.59	1,760.54	5,060.74	207.76 S	40.95 W	426,010.87	852,202.45	1.04	207.31	
5,165.00	7.96	165.14	1,851.72	5,151.92	219.56 S	37.55 W	425,999.07	852,205.85	0.73	219.14	
5,260.00	8.53	164.44	1,945.73	5,245.93	232.70 S	33.97 W	425,985.93	852,209.43	0.61	232.32	
5,321.00	8.66	164.70	2,006.05	5,306.25	241.49 S	31.55 W	425,977.14	852,211.85	0.22	241.14	
5,355.00	8.97	164.79	2,039.65	5,339.85	246.52 S	30.18 W	425,972.11	852,213.22	0.91	246.18	
5,449.00	8.00	163.82	2,132.62	5,432.82	259.87 S	26.43 W	425,958.76	852,216.97	1.04	259.57	
5,542.00	5.93	153.19	2,224.93	5,525.13	270.38 S	22.46 W	425,948.25	852,220.94	2.61	270.12	
5,634.00	5.45	148.00	2,316.48	5,616.68	278.32 S	18.00 W	425,940.31	852,225.40	0.76	278.11	
5,727.00	4.18	155.29	2,409.15	5,709.35	285.15 S	14.24 W	425,933.48	852,229.16	1.51	284.98	
5,821.00	3.60	163.91	2,502.93	5,803.13	291.10 S	11.99 W	425,927.53	852,231.41	0.87	290.95	
5,915.00	3.30	166.02	2,596.76	5,896.96	296.56 S	10.52 W	425,922.07	852,232.88	0.35	296.43	
6,009.00	2.81	164.08	2,690.63	5,990.83	301.40 S	9.24 W	425,917.23	852,234.16	0.53	301.28	
6,104.00	2.73	165.93	2,785.52	6,085.72	305.83 S	8.05 W	425,912.80	852,235.35	0.13	305.73	
6,198.00	2.81	165.84	2,879.41	6,179.61	310.24 S	6.94 W	425,908.39	852,236.46	0.09	310.14	
6,293.00	2.59	162.85	2,974.30	6,274.50	314.55 S	5.74 W	425,904.08	852,237.66	0.27	314.47	
6,386.00	2.46	166.98	3,067.21	6,367.41	318.50 S	4.67 W	425,900.13	852,238.73	0.24	318.43	
6,479.00	2.42	165.93	3,160.13	6,460.33	322.35 S	3.74 W	425,896.28	852,239.66	0.06	322.29	
6,572.00	2.73	161.10	3,253.03	6,553.23	326.35 S	2.55 W	425,892.28	852,240.85	0.41	326.30	
6,664.00	1.36	130.95	3,344.97	6,645.17	329.14 S	1.01 W	425,889.49	852,242.39	1.84	329.11	
6,757.00	1.19	100.19	3,437.95	6,738.15	330.03 S	0.77 E	425,888.60	852,244.17	0.75	330.02	
6,852.00	1.19	106.87	3,532.93	6,833.13	330.49 S	2.69 E	425,888.14	852,246.09	0.15	330.50	
6,944.00	1.05	110.38	3,624.91	6,925.11	331.06 S	4.39 E	425,887.57	852,247.79	0.17	331.09	
7,037.00	1.14	117.24	3,717.90	7,018.10	331.78 S	6.01 E	425,886.85	852,249.41	0.17	331.83	
7,129.00	1.19	110.73	3,809.88	7,110.08	332.54 S	7.72 E	425,886.09	852,251.12	0.15	332.60	
7,222.00	1.23	108.54	3,902.86	7,203.06	333.20 S	9.57 E	425,885.43	852,252.97	0.07	333.28	
7,315.00	1.27	114.69	3,995.84	7,296.04	333.95 S	11.45 E	425,884.68	852,254.85	0.15	334.05	
7,409.00	1.19	121.90	4,089.81	7,390.01	334.90 S	13.23 E	425,883.73	852,256.63	0.19	335.02	
7,503.00	0.44	312.53	4,183.81	7,484.01	335.17 S	13.79 E	425,883.46	852,257.19	1.73	335.30	
7,598.00	1.19	272.36	4,278.80	7,579.00	334.88 S	12.54 E	425,883.75	852,255.94	0.95	335.00	
7,692.00	1.36	262.61	4,372.78	7,672.98	334.99 S	10.45 E	425,883.64	852,253.85	0.29	335.08	

Design Report for Proxy WCA State Com 1H - ST01 Pilot Hole

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
					Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)			
7,787.00	1.19	274.56	4,467.75	7,767.95	335.05 S	8.35 E	425,883.58	852,251.75	0.33	335.12	
7,882.00	1.10	267.36	4,562.73	7,862.93	335.02 S	6.46 E	425,883.61	852,249.86	0.18	335.07	
7,975.00	0.92	274.12	4,655.72	7,955.92	335.00 S	4.82 E	425,883.63	852,248.22	0.23	335.04	
8,068.00	0.70	260.50	4,748.71	8,048.91	335.04 S	3.52 E	425,883.59	852,246.92	0.31	335.06	
8,161.00	0.48	261.47	4,841.70	8,141.90	335.19 S	2.57 E	425,883.44	852,245.97	0.24	335.20	
8,254.00	0.48	261.82	4,934.70	8,234.90	335.31 S	1.80 E	425,883.32	852,245.20	0.00	335.31	
8,347.00	0.22	232.29	5,027.70	8,327.90	335.47 S	1.27 E	425,883.16	852,244.67	0.33	335.47	
8,440.00	0.22	217.96	5,120.70	8,420.90	335.72 S	1.02 E	425,882.91	852,244.42	0.06	335.71	
8,533.00	0.40	192.74	5,213.70	8,513.90	336.18 S	0.84 E	425,882.45	852,244.24	0.24	336.17	
8,625.00	0.57	142.73	5,305.69	8,605.89	336.86 S	1.05 E	425,881.77	852,244.45	0.48	336.85	
8,720.00	0.97	139.91	5,400.69	8,700.89	337.85 S	1.85 E	425,880.78	852,245.25	0.42	337.85	
8,813.00	1.27	136.57	5,493.67	8,793.87	339.20 S	3.07 E	425,879.43	852,246.47	0.33	339.21	
8,906.00	1.05	123.39	5,586.65	8,886.85	340.42 S	4.49 E	425,878.21	852,247.89	0.37	340.45	
9,001.00	1.45	119.17	5,681.63	8,981.83	341.48 S	6.26 E	425,877.15	852,249.66	0.43	341.53	
9,093.00	1.93	130.69	5,773.59	9,073.79	343.06 S	8.45 E	425,875.57	852,251.85	0.64	343.13	
9,185.00	2.20	144.66	5,865.53	9,165.73	345.51 S	10.65 E	425,873.12	852,254.05	0.62	345.60	
9,278.00	0.75	159.78	5,958.49	9,258.69	347.54 S	11.89 E	425,871.09	852,255.29	1.60	347.65	
9,371.00	0.66	133.23	6,051.49	9,351.69	348.47 S	12.49 E	425,870.16	852,255.89	0.36	348.59	
9,464.00	0.66	141.41	6,144.48	9,444.68	349.26 S	13.22 E	425,869.37	852,256.62	0.10	349.38	
9,556.00	0.70	62.92	6,236.48	9,536.68	349.42 S	14.05 E	425,869.21	852,257.45	0.94	349.55	
9,651.00	0.88	3.42	6,331.47	9,631.67	348.43 S	14.61 E	425,870.20	852,258.01	0.84	348.56	
9,737.00	1.19	8.25	6,417.45	9,717.65	346.88 S	14.78 E	425,871.75	852,258.18	0.37	347.02	
9,839.00	1.41	9.57	6,519.43	9,819.63	344.60 S	15.14 E	425,874.03	852,258.54	0.22	344.74	
9,933.00	2.73	1.66	6,613.37	9,913.57	341.22 S	15.39 E	425,877.41	852,258.79	1.43	341.37	
10,027.00	1.63	40.60	6,707.30	10,007.50	337.97 S	16.33 E	425,880.66	852,259.73	1.90	338.12	
10,121.00	1.71	97.37	6,801.27	10,101.47	337.13 S	18.59 E	425,881.50	852,261.99	1.69	337.31	
10,141.73	1.74	104.29	6,821.99	10,122.19	337.25 S	19.20 E	425,881.38	852,262.60	1.01	337.44	
10,160.00	2.62	157.43	6,840.25	10,140.45	337.70 S	19.63 E	425,880.93	852,263.03	11.52	337.90	
10,180.00	2.66	26.70	6,860.24	10,160.44	337.71 S	20.02 E	425,880.92	852,263.42	24.02	337.91	
10,200.00	2.49	29.80	6,880.22	10,180.42	336.92 S	20.44 E	425,881.71	852,263.84	1.11	337.12	
10,220.00	1.83	24.07	6,900.20	10,200.40	336.25 S	20.79 E	425,882.38	852,264.19	3.44	336.46	
10,240.00	1.02	197.10	6,920.20	10,220.40	336.13 S	20.86 E	425,882.50	852,264.26	14.27	336.34	
10,260.00	0.75	300.55	6,940.20	10,240.40	336.23 S	20.70 E	425,882.40	852,264.10	7.03	336.44	
10,280.00	1.00	82.06	6,960.20	10,260.40	336.14 S	20.76 E	425,882.49	852,264.16	8.28	336.35	
10,300.00	1.31	103.13	6,980.19	10,280.39	336.17 S	21.15 E	425,882.46	852,264.55	2.59	336.38	
10,320.00	1.29	56.75	7,000.19	10,300.39	336.10 S	21.56 E	425,882.53	852,264.96	5.11	336.31	
10,340.00	1.31	83.56	7,020.18	10,320.38	335.95 S	21.98 E	425,882.68	852,265.38	3.01	336.17	
10,360.00	1.36	114.44	7,040.18	10,340.38	336.02 S	22.42 E	425,882.61	852,265.82	3.56	336.25	
10,380.00	1.44	139.48	7,060.17	10,360.37	336.31 S	22.80 E	425,882.32	852,266.20	3.07	336.54	
10,400.00	1.51	141.35	7,080.17	10,380.37	336.71 S	23.13 E	425,881.92	852,266.53	0.42	336.94	
10,420.00	1.57	91.01	7,100.16	10,400.36	336.92 S	23.57 E	425,881.71	852,266.97	6.56	337.16	

Design Report for Proxy WCA State Com 1H - ST01 Pilot Hole

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates (usft)		Map Coordinates (usft)		Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
10,440.00	1.59	102.54	7,120.15	10,420.35	336.99 S	24.11 E	425,881.64	852,267.51	1.59	337.23	
10,460.00	1.64	93.91	7,140.14	10,440.34	337.07 S	24.67 E	425,881.56	852,268.07	1.23	337.31	
10,480.00	1.72	82.29	7,160.13	10,460.33	337.05 S	25.25 E	425,881.58	852,268.65	1.76	337.30	
10,500.00	1.94	96.45	7,180.12	10,480.32	337.04 S	25.89 E	425,881.59	852,269.29	2.49	337.30	
10,520.00	2.14	66.98	7,200.11	10,500.31	336.94 S	26.57 E	425,881.69	852,269.97	5.27	337.20	
10,540.00	2.32	97.47	7,220.10	10,520.30	336.84 S	27.31 E	425,881.79	852,270.71	5.93	337.12	
10,560.00	2.48	160.04	7,240.08	10,540.28	337.30 S	27.86 E	425,881.33	852,271.26	12.48	337.58	
10,580.00	2.51	148.91	7,260.06	10,560.26	338.08 S	28.23 E	425,880.55	852,271.63	2.42	338.37	
10,600.00	2.49	141.02	7,280.05	10,580.25	338.80 S	28.73 E	425,879.83	852,272.13	1.72	339.09	
10,620.00	2.52	138.30	7,300.03	10,600.23	339.46 S	29.30 E	425,879.17	852,272.70	0.61	339.76	
10,640.00	2.57	155.97	7,320.01	10,620.21	340.20 S	29.78 E	425,878.43	852,273.18	3.91	340.50	
10,660.00	2.60	151.88	7,339.99	10,640.19	341.01 S	30.17 E	425,877.62	852,273.57	0.94	341.32	
10,680.00	2.70	108.29	7,359.97	10,660.17	341.56 S	30.83 E	425,877.07	852,274.23	9.85	341.87	
10,700.00	2.86	56.91	7,379.95	10,680.15	341.44 S	31.70 E	425,877.19	852,275.10	12.06	341.76	
10,720.00	2.96	112.09	7,399.92	10,700.12	341.36 S	32.60 E	425,877.27	852,276.00	13.47	341.69	
10,740.00	3.03	111.41	7,419.90	10,720.10	341.74 S	33.57 E	425,876.89	852,276.97	0.40	342.09	
10,760.00	3.03	101.42	7,439.87	10,740.07	342.04 S	34.57 E	425,876.59	852,277.97	2.64	342.40	
10,780.00	3.07	153.05	7,459.84	10,760.04	342.62 S	35.34 E	425,876.01	852,278.74	13.28	342.99	
10,800.00	3.15	113.00	7,479.82	10,780.02	343.32 S	36.08 E	425,875.31	852,279.48	10.65	343.69	
10,820.00	3.33	133.39	7,499.79	10,799.99	343.93 S	37.01 E	425,874.70	852,280.41	5.80	344.31	
10,840.00	3.37	74.58	7,519.76	10,819.96	344.17 S	38.00 E	425,874.46	852,281.40	16.45	344.56	
10,860.00	3.52	127.64	7,539.73	10,839.93	344.39 S	39.05 E	425,874.24	852,282.45	15.41	344.79	
10,880.00	3.73	115.27	7,559.69	10,859.89	345.04 S	40.13 E	425,873.59	852,283.53	4.03	345.46	
10,900.00	3.98	110.50	7,579.64	10,879.84	345.56 S	41.37 E	425,873.07	852,284.77	2.03	345.99	
10,920.00	4.26	108.76	7,599.59	10,899.79	346.05 S	42.72 E	425,872.58	852,286.12	1.54	346.49	
10,940.00	4.43	108.99	7,619.53	10,919.73	346.54 S	44.15 E	425,872.09	852,287.55	0.84	346.99	
10,960.00	4.31	110.78	7,639.47	10,939.67	347.05 S	45.58 E	425,871.58	852,288.98	0.88	347.53	
10,980.00	3.42	111.64	7,659.43	10,959.63	347.54 S	46.84 E	425,871.09	852,290.24	4.47	348.03	
11,000.00	2.88	102.75	7,679.40	10,979.60	347.87 S	47.89 E	425,870.76	852,291.29	3.65	348.37	
11,020.00	2.96	104.11	7,699.37	10,999.57	348.11 S	48.88 E	425,870.52	852,292.28	0.53	348.62	
11,040.00	3.00	102.14	7,719.35	11,019.55	348.34 S	49.89 E	425,870.29	852,293.29	0.55	348.86	
11,060.00	2.28	89.88	7,739.32	11,039.52	348.45 S	50.80 E	425,870.18	852,294.20	4.54	348.98	
11,080.00	1.16	21.85	7,759.32	11,059.52	348.26 S	51.27 E	425,870.37	852,294.67	10.69	348.80	
11,100.00	1.23	354.29	7,779.31	11,079.51	347.86 S	51.33 E	425,870.77	852,294.73	2.87	348.40	
11,120.00	1.62	344.25	7,799.31	11,099.51	347.38 S	51.23 E	425,871.25	852,294.63	2.28	347.91	
11,140.00	1.95	324.93	7,819.30	11,119.50	346.83 S	50.96 E	425,871.80	852,294.36	3.42	347.36	
11,160.00	2.61	302.08	7,839.28	11,139.48	346.31 S	50.37 E	425,872.32	852,293.77	5.54	346.83	
11,180.00	3.23	298.91	7,859.26	11,159.46	345.79 S	49.50 E	425,872.84	852,292.90	3.20	346.31	
11,200.00	3.85	295.54	7,879.22	11,179.42	345.23 S	48.40 E	425,873.40	852,291.80	3.29	345.74	
11,220.00	4.80	295.22	7,899.16	11,199.36	344.59 S	47.03 E	425,874.04	852,290.43	4.73	345.07	
11,240.00	5.60	294.34	7,919.08	11,219.28	343.83 S	45.39 E	425,874.80	852,288.79	4.05	344.30	

Design Report for Proxy WCA State Com 1H - ST01 Pilot Hole

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates Northing (usft) Easting (usft)	Map Coordinates Northing (usft) Easting (usft)	Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
11,260.00	5.92	290.85	7,938.98	11,239.18	343.06 S 43.54 E	425,875.57 852,286.94	2.37	343.51	
11,280.00	6.16	288.88	7,958.87	11,259.07	342.34 S 41.56 E	425,876.29 852,284.96	1.57	342.77	
11,300.00	6.18	289.54	7,978.75	11,278.95	341.64 S 39.53 E	425,876.99 852,282.93	0.36	342.04	
11,320.00	6.04	291.07	7,998.64	11,298.84	340.90 S 37.53 E	425,877.73 852,280.93	1.05	341.28	
11,340.00	5.63	290.37	8,018.53	11,318.73	340.18 S 35.63 E	425,878.45 852,279.03	2.10	340.54	
11,360.00	5.49	289.62	8,038.44	11,338.64	339.52 S 33.81 E	425,879.11 852,277.21	0.79	339.86	
11,380.00	5.57	290.16	8,058.35	11,358.55	338.86 S 32.00 E	425,879.77 852,275.40	0.47	339.19	
11,400.00	5.21	291.48	8,078.26	11,378.46	338.19 S 30.24 E	425,880.44 852,273.64	1.89	338.50	
11,420.00	4.87	291.11	8,098.18	11,398.38	337.56 S 28.61 E	425,881.07 852,272.01	1.72	337.85	
11,440.00	4.58	289.76	8,118.11	11,418.31	336.98 S 27.06 E	425,881.65 852,270.46	1.53	337.25	
11,460.00	4.45	291.00	8,138.05	11,438.25	336.43 S 25.59 E	425,882.20 852,268.99	0.81	336.69	
11,480.00	4.42	293.37	8,157.99	11,458.19	335.85 S 24.15 E	425,882.78 852,267.55	0.93	336.09	
11,500.00	4.36	295.21	8,177.93	11,478.13	335.22 S 22.76 E	425,883.41 852,266.16	0.76	335.44	
11,520.00	4.27	296.13	8,197.87	11,498.07	334.57 S 21.40 E	425,884.06 852,264.80	0.60	334.78	
11,540.00	4.00	296.43	8,217.82	11,518.02	333.93 S 20.11 E	425,884.70 852,263.51	1.34	334.13	
11,560.00	3.80	295.52	8,237.78	11,537.98	333.33 S 18.89 E	425,885.30 852,262.29	1.03	333.52	
11,580.00	3.62	294.98	8,257.73	11,557.93	332.78 S 17.72 E	425,885.85 852,261.12	0.95	332.95	
11,600.00	3.49	295.88	8,277.70	11,577.90	332.25 S 16.60 E	425,886.38 852,260.00	0.71	332.41	
11,620.00	3.47	295.42	8,297.66	11,597.86	331.72 S 15.50 E	425,886.91 852,258.90	0.15	331.87	
11,640.00	3.46	295.86	8,317.62	11,617.82	331.20 S 14.41 E	425,887.43 852,257.81	0.14	331.34	
11,660.00	3.44	296.13	8,337.59	11,637.79	330.67 S 13.33 E	425,887.96 852,256.73	0.14	330.80	
11,680.00	3.42	295.22	8,357.55	11,657.75	330.15 S 12.25 E	425,888.48 852,255.65	0.30	330.27	
11,700.00	3.32	291.82	8,377.52	11,677.72	329.68 S 11.17 E	425,888.95 852,254.57	1.11	329.79	
11,720.00	3.21	286.12	8,397.48	11,697.68	329.31 S 10.10 E	425,889.32 852,253.50	1.71	329.40	
11,740.00	3.35	277.40	8,417.45	11,717.65	329.08 S 8.98 E	425,889.55 852,252.38	2.59	329.16	
11,760.00	3.51	272.71	8,437.41	11,737.61	328.98 S 7.79 E	425,889.65 852,251.19	1.61	329.04	
11,780.00	3.63	271.00	8,457.38	11,757.58	328.94 S 6.55 E	425,889.69 852,249.95	0.80	328.99	
11,800.00	3.79	269.27	8,477.33	11,777.53	328.94 S 5.25 E	425,889.69 852,248.65	1.01	328.97	
11,820.00	3.89	267.77	8,497.29	11,797.49	328.97 S 3.91 E	425,889.66 852,247.31	0.69	328.99	
11,840.00	3.64	265.83	8,517.25	11,817.45	329.04 S 2.60 E	425,889.59 852,246.00	1.38	329.05	
11,860.00	3.44	264.99	8,537.21	11,837.41	329.14 S 1.37 E	425,889.49 852,244.77	1.02	329.14	
11,880.00	3.22	268.25	8,557.17	11,857.37	329.21 S 0.21 E	425,889.42 852,243.61	1.48	329.19	
11,900.00	3.04	268.51	8,577.14	11,877.34	329.24 S 0.88 W	425,889.39 852,242.52	0.88	329.21	
11,920.00	2.89	266.09	8,597.12	11,897.32	329.29 S 1.91 W	425,889.34 852,241.49	0.98	329.25	
11,940.00	2.84	264.78	8,617.09	11,917.29	329.37 S 2.91 W	425,889.26 852,240.49	0.42	329.32	
11,960.00	2.68	263.78	8,637.07	11,937.27	329.46 S 3.86 W	425,889.17 852,239.54	0.83	329.40	
11,980.00	2.34	261.83	8,657.05	11,957.25	329.57 S 4.73 W	425,889.06 852,238.67	1.75	329.50	
12,000.00	1.94	258.63	8,677.04	11,977.24	329.70 S 5.47 W	425,888.93 852,237.93	2.08	329.62	
12,020.00	1.64	256.22	8,697.03	11,997.23	329.83 S 6.08 W	425,888.80 852,237.32	1.53	329.75	
12,040.00	1.38	253.89	8,717.02	12,017.22	329.97 S 6.59 W	425,888.66 852,236.81	1.37	329.88	
12,060.00	1.19	248.44	8,737.01	12,037.21	330.11 S 7.01 W	425,888.52 852,236.39	1.11	330.02	

Design Report for Proxy WCA State Com 1H - ST01 Pilot Hole

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
					Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)			
12,080.00	0.84	247.25	8,757.01	12,057.21	330.24 S	7.34 W	425,888.39	852,236.06	1.77	330.15	
12,100.00	0.39	247.56	8,777.01	12,077.21	330.33 S	7.54 W	425,888.30	852,235.86	2.24	330.23	
12,120.00	0.25	223.03	8,797.01	12,097.21	330.38 S	7.63 W	425,888.25	852,235.77	0.97	330.28	
12,140.00	0.48	154.10	8,817.01	12,117.21	330.49 S	7.63 W	425,888.14	852,235.77	2.27	330.39	
12,160.00	0.71	105.63	8,837.01	12,137.21	330.60 S	7.47 W	425,888.03	852,235.93	2.66	330.50	
12,180.00	0.84	106.21	8,857.01	12,157.21	330.68 S	7.21 W	425,887.95	852,236.19	0.65	330.58	
12,200.00	0.93	117.17	8,877.00	12,177.20	330.79 S	6.92 W	425,887.84	852,236.48	0.96	330.70	
12,220.00	0.88	127.49	8,897.00	12,197.20	330.96 S	6.66 W	425,887.67	852,236.74	0.85	330.87	
12,240.00	0.86	140.13	8,917.00	12,217.20	331.17 S	6.44 W	425,887.46	852,236.96	0.97	331.08	
12,260.00	0.84	154.41	8,937.00	12,237.20	331.41 S	6.28 W	425,887.22	852,237.12	1.06	331.33	
12,280.00	0.83	174.20	8,956.99	12,257.19	331.69 S	6.20 W	425,886.94	852,237.20	1.44	331.60	
12,300.00	1.00	181.52	8,976.99	12,277.19	332.01 S	6.19 W	425,886.62	852,237.21	1.03	331.92	
12,320.00	0.84	183.08	8,996.99	12,297.19	332.33 S	6.20 W	425,886.30	852,237.20	0.78	332.24	
12,340.00	0.36	135.84	9,016.99	12,317.19	332.52 S	6.17 W	425,886.11	852,237.23	3.29	332.44	
12,360.00	0.39	80.01	9,036.99	12,337.19	332.56 S	6.06 W	425,886.07	852,237.34	1.76	332.47	
12,380.00	0.75	58.29	9,056.99	12,357.19	332.47 S	5.88 W	425,886.16	852,237.52	2.05	332.39	
12,400.00	1.45	59.61	9,076.98	12,377.18	332.28 S	5.55 W	425,886.35	852,237.85	3.49	332.20	
12,420.00	2.30	58.43	9,096.97	12,397.17	331.94 S	4.99 W	425,886.69	852,238.41	4.27	331.87	
12,440.00	2.94	50.84	9,116.95	12,417.15	331.41 S	4.25 W	425,887.22	852,239.15	3.62	331.34	
12,460.00	3.19	47.06	9,136.92	12,437.12	330.70 S	3.45 W	425,887.93	852,239.95	1.64	330.65	
12,480.00	3.38	45.41	9,156.89	12,457.09	329.91 S	2.62 W	425,888.72	852,240.78	1.06	329.86	
12,500.00	3.52	44.61	9,176.85	12,477.05	329.06 S	1.77 W	425,889.57	852,241.63	0.70	329.02	
12,520.00	3.59	43.81	9,196.82	12,497.02	328.17 S	0.90 W	425,890.46	852,242.50	0.44	328.14	
12,540.00	3.62	43.21	9,216.78	12,516.98	327.26 S	0.04 W	425,891.37	852,243.36	0.24	327.24	
12,560.00	3.69	42.11	9,236.74	12,536.94	326.32 S	0.83 E	425,892.31	852,244.23	0.50	326.31	
12,580.00	3.72	41.66	9,256.69	12,556.89	325.36 S	1.69 E	425,893.27	852,245.09	0.23	325.36	
12,600.00	3.78	41.22	9,276.65	12,576.85	324.38 S	2.55 E	425,894.25	852,245.95	0.31	324.39	

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
2,735.00	2,734.17	-7.17	-12.39	Tie off to OH @ 2735MD
2,833.00	2,832.12	-9.52	-11.70	First ST01 Survey @ 2833MD

Design Report for Proxy WCA State Com 1H - ST01 Pilot Hole

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	179.38	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
236.00	2,735.00	Survey #1	MWD
2,833.00	10,160.00	MWD (ST01) Pilot Hole	MWD+SC
10,160.00	12,600.00	Weatherford Wireline	Dipmeter

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (°)	+N/-S (°)	+E/-W (°)	Northing (°)	Easting (°)	Latitude	Longitude
()									

Directional Difficulty Index

Average Dogleg over Survey:	1.13 °/100usft	Maximum Dogleg over Survey:	24.02 °/100usft at 10,180.00 usft
Net Tortousity applicable to Plans:	0.95 °/100usft	Directional Difficulty Index:	4.929

Audit Info

North Reference Sheet for Proxy WCA State Com - Proxy WCA State Com 1H - ST01 Pilot Hole

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to GE 3274.60 = 25.6 @ 3300.20usft (Precision 104). Northing and Easting are relative to Proxy WCA State Com 1H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -104.33333333°, Longitude Origin:0.00000000°, Latitude Origin:0.00000000°

False Easting: 541,337.50usft, False Northing: 0.00usft, Scale Reduction: 1.00001980

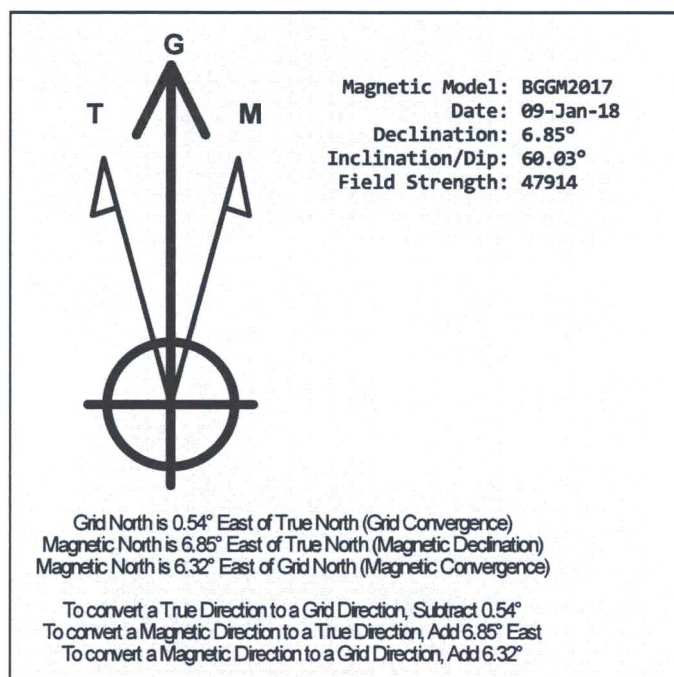
Grid Coordinates of Well: 426,218.63 usft N, 852,243.40 usft E

Geographical Coordinates of Well: 32° 10' 03.95" N, 103° 19' 42.82" W

Grid Convergence at Surface is: 0.54°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,600.00usft
the Bottom Hole Displacement is 324.39usft in the Direction of 179.55° (Grid).

Magnetic Convergence at surface is: -6.32° (9 January 2018, , BGGM2017)



Precision 104

One Energy Partners

Lea County, NM (NAD 83) Proxy WCA State Com

API#

Proxy WCA State Com 1H

380' FSL, 380' FWL

Lateral

Design: Lateral

Sperry Drilling Services Combo Report

16 February, 2018

Well Coordinates: 32° 10' 03.95" N
103° 19' 42.82" W

North American Datum 1983
New Mexico Eastern Zone
426,218.63 N
852,243.40 E

Ground Level: 3,274.60 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Centered on Well Proxy WCA State Com 1H
GE 3274.60 = 25.6 @ 3300.20usft (Precision 104)

N

Grid

Midcon (2 decimal)

Version: 5000.1 Build: 81E

Report Version: Midcon Combo v1.11

HALLIBURTON

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APR 04 2018

H0384 1000

Design Report for Proxy WCA State Com 1H - Lateral

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
					Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)			
0.00	0.00	0.00	-3,300.20	0.00	0.00 N	0.00 E	426,218.63	852,243.40	0.00	0.00	
236.00	0.48	250.48	-3,064.20	236.00	0.33 S	0.93 W	426,218.30	852,242.47	0.20	-0.33	
330.00	0.53	254.61	-2,970.21	329.99	0.58 S	1.72 W	426,218.05	852,241.68	0.07	-0.58	
422.00	0.48	277.11	-2,878.21	421.99	0.64 S	2.51 W	426,217.99	852,240.89	0.22	-0.64	
540.00	0.57	279.92	-2,760.21	539.99	0.48 S	3.58 W	426,218.15	852,239.82	0.08	-0.48	
692.00	0.97	268.50	-2,608.23	691.97	0.38 S	5.61 W	426,218.25	852,237.79	0.28	-0.38	
784.00	1.10	269.90	-2,516.24	783.96	0.41 S	7.28 W	426,218.22	852,236.12	0.14	-0.40	
851.00	1.45	261.73	-2,449.26	850.94	0.53 S	8.76 W	426,218.10	852,234.64	0.59	-0.52	
964.00	1.85	269.10	-2,336.31	963.89	0.76 S	12.00 W	426,217.87	852,231.40	0.40	-0.75	
1,056.00	1.89	269.73	-2,244.36	1,055.84	0.79 S	15.00 W	426,217.84	852,228.40	0.05	-0.78	
1,149.00	1.89	274.74	-2,151.41	1,148.79	0.67 S	18.06 W	426,217.96	852,225.34	0.18	-0.66	
1,242.00	2.11	272.28	-2,058.46	1,241.74	0.48 S	21.30 W	426,218.15	852,222.10	0.25	-0.46	
1,335.00	1.93	277.20	-1,965.52	1,334.68	0.21 S	24.56 W	426,218.42	852,218.84	0.27	-0.19	
1,430.00	1.76	263.58	-1,870.57	1,429.63	0.18 S	27.60 W	426,218.45	852,215.80	0.49	-0.15	
1,525.00	1.27	246.61	-1,775.60	1,524.60	0.76 S	30.02 W	426,217.87	852,213.38	0.69	-0.73	
1,618.00	0.92	229.56	-1,682.62	1,617.58	1.65 S	31.53 W	426,216.98	852,211.87	0.51	-1.62	
1,712.00	1.05	223.85	-1,588.63	1,711.57	2.76 S	32.70 W	426,215.87	852,210.70	0.17	-2.73	
1,807.00	1.05	213.48	-1,493.65	1,806.55	4.12 S	33.78 W	426,214.51	852,209.62	0.20	-4.08	
1,900.00	1.05	207.94	-1,400.67	1,899.53	5.58 S	34.65 W	426,213.05	852,208.75	0.11	-5.54	
1,992.00	1.05	137.10	-1,308.68	1,991.52	6.94 S	34.48 W	426,211.69	852,208.92	1.32	-6.91	
2,085.00	1.80	99.40	-1,215.71	2,084.49	7.80 S	32.45 W	426,210.83	852,210.95	1.25	-7.77	
2,177.00	1.98	97.02	-1,123.76	2,176.44	8.23 S	29.45 W	426,210.40	852,213.95	0.21	-8.21	
2,270.00	2.15	87.27	-1,030.82	2,269.38	8.35 S	26.11 W	426,210.28	852,217.29	0.42	-8.32	
2,362.00	2.46	82.43	-938.89	2,361.31	8.01 S	22.43 W	426,210.62	852,220.97	0.40	-7.98	
2,455.00	1.71	81.73	-845.95	2,454.25	7.54 S	19.08 W	426,211.09	852,224.32	0.81	-7.52	
2,548.00	1.45	85.42	-752.99	2,547.21	7.25 S	16.54 W	426,211.38	852,226.86	0.30	-7.23	
2,642.00	1.23	93.51	-659.01	2,641.19	7.22 S	14.34 W	426,211.41	852,229.06	0.31	-7.20	
2,735.00	1.19	83.75	-566.03	2,734.17	7.17 S	12.39 W	426,211.46	852,231.01	0.23	-7.16	
2,833.00	2.90	187.55	-468.08	2,832.12	9.52 S	11.70 W	426,209.11	852,231.70	3.46	-9.51	
2,926.00	7.60	213.30	-375.48	2,924.72	17.00 S	15.39 W	426,201.63	852,228.01	5.53	-16.98	
3,021.00	9.54	223.85	-281.54	3,018.66	27.93 S	24.29 W	426,190.70	852,219.11	2.62	-27.90	
3,113.00	8.53	219.89	-190.69	3,109.51	38.66 S	33.95 W	426,179.97	852,209.45	1.29	-38.63	
3,206.00	7.25	217.61	-98.57	3,201.63	48.60 S	41.96 W	426,170.03	852,201.44	1.42	-48.56	
3,300.00	5.63	216.29	-5.16	3,295.04	57.02 S	48.30 W	426,161.61	852,195.10	1.73	-56.97	
3,393.00	5.36	214.71	87.41	3,387.61	64.27 S	53.48 W	426,154.36	852,189.92	0.33	-64.21	
3,485.00	5.41	215.32	179.00	3,479.20	71.34 S	58.43 W	426,147.29	852,184.97	0.08	-71.28	
3,578.00	3.78	209.17	271.70	3,571.90	77.59 S	62.46 W	426,141.04	852,180.94	1.83	-77.53	
3,670.00	3.82	179.38	363.51	3,663.71	83.30 S	63.91 W	426,135.33	852,179.49	2.12	-83.24	
3,762.00	4.13	168.04	455.29	3,755.49	89.61 S	63.19 W	426,129.02	852,180.21	0.92	-89.55	
3,857.00	4.04	168.04	550.05	3,850.25	96.23 S	61.78 W	426,122.40	852,181.62	0.09	-96.17	
3,951.00	4.00	167.78	643.82	3,944.02	102.67 S	60.40 W	426,115.96	852,183.00	0.05	-102.61	

Design Report for Proxy WCA State Com 1H - Lateral

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
					Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)			
4,045.00	4.22	167.86	737.57	4,037.77	109.26 S	58.98 W	426,109.37	852,184.42	0.23	-109.20	
4,139.00	4.48	170.32	831.30	4,131.50	116.26 S	57.64 W	426,102.37	852,185.76	0.34	-116.20	
4,234.00	4.57	164.87	926.01	4,226.21	123.57 S	56.03 W	426,095.06	852,187.37	0.46	-123.51	
4,326.00	4.75	169.53	1,017.70	4,317.90	130.85 S	54.38 W	426,087.78	852,189.02	0.46	-130.80	
4,419.00	5.19	167.16	1,110.35	4,410.55	138.74 S	52.74 W	426,079.89	852,190.66	0.52	-138.69	
4,513.00	5.54	169.18	1,203.94	4,504.14	147.34 S	50.95 W	426,071.29	852,192.45	0.42	-147.29	
4,606.00	5.67	171.55	1,296.50	4,596.70	156.30 S	49.43 W	426,062.33	852,193.97	0.29	-156.25	
4,699.00	5.67	170.85	1,389.04	4,689.24	165.38 S	48.02 W	426,053.25	852,195.38	0.07	-165.33	
4,792.00	6.15	173.14	1,481.55	4,781.75	174.86 S	46.70 W	426,043.77	852,196.70	0.57	-174.81	
4,886.00	6.42	172.78	1,574.98	4,875.18	185.07 S	45.44 W	426,033.56	852,197.96	0.29	-185.03	
4,979.00	7.34	170.24	1,667.31	4,967.51	196.09 S	43.78 W	426,022.54	852,199.62	1.04	-196.04	
5,073.00	7.38	162.59	1,760.54	5,060.74	207.76 S	40.95 W	426,010.87	852,202.45	1.04	-207.72	
5,165.00	7.96	165.14	1,851.72	5,151.92	219.56 S	37.55 W	425,999.07	852,205.85	0.73	-219.52	
5,260.00	8.53	164.44	1,945.73	5,245.93	232.70 S	33.97 W	425,985.93	852,209.43	0.61	-232.67	
5,321.00	8.66	164.70	2,006.05	5,306.25	241.49 S	31.55 W	425,977.14	852,211.85	0.22	-241.46	
5,355.00	8.97	164.79	2,039.65	5,339.85	246.52 S	30.18 W	425,972.11	852,213.22	0.91	-246.49	
5,449.00	8.00	163.82	2,132.62	5,432.82	259.87 S	26.43 W	425,958.76	852,216.97	1.04	-259.85	
5,542.00	5.93	153.19	2,224.93	5,525.13	270.38 S	22.46 W	425,948.25	852,220.94	2.61	-270.35	
5,634.00	5.45	148.00	2,316.48	5,616.68	278.32 S	18.00 W	425,940.31	852,225.40	0.76	-278.31	
5,727.00	4.18	155.29	2,409.15	5,709.35	285.15 S	14.24 W	425,933.48	852,229.16	1.51	-285.13	
5,821.00	3.60	163.91	2,502.93	5,803.13	291.10 S	11.99 W	425,927.53	852,231.41	0.87	-291.08	
5,915.00	3.30	166.02	2,596.76	5,896.96	296.56 S	10.52 W	425,922.07	852,232.88	0.35	-296.55	
6,009.00	2.81	164.08	2,690.63	5,990.83	301.40 S	9.24 W	425,917.23	852,234.16	0.53	-301.39	
6,104.00	2.73	165.93	2,785.52	6,085.72	305.83 S	8.05 W	425,912.80	852,235.35	0.13	-305.82	
6,198.00	2.81	165.84	2,879.41	6,179.61	310.24 S	6.94 W	425,908.39	852,236.46	0.09	-310.23	
6,293.00	2.59	162.85	2,974.30	6,274.50	314.55 S	5.74 W	425,904.08	852,237.66	0.27	-314.54	
6,386.00	2.46	166.98	3,067.21	6,367.41	318.50 S	4.67 W	425,900.13	852,238.73	0.24	-318.49	
6,479.00	2.42	165.93	3,160.13	6,460.33	322.35 S	3.74 W	425,896.28	852,239.66	0.06	-322.34	
6,572.00	2.73	161.10	3,253.03	6,553.23	326.35 S	2.55 W	425,892.28	852,240.85	0.41	-326.35	
6,664.00	1.36	130.95	3,344.97	6,645.17	329.14 S	1.01 W	425,889.49	852,242.39	1.84	-329.14	
6,757.00	1.19	100.19	3,437.95	6,738.15	330.03 S	0.77 E	425,888.60	852,244.17	0.75	-330.03	
6,852.00	1.19	106.87	3,532.93	6,833.13	330.49 S	2.69 E	425,888.14	852,246.09	0.15	-330.49	
6,944.00	1.05	110.38	3,624.91	6,925.11	331.06 S	4.39 E	425,887.57	852,247.79	0.17	-331.07	
7,037.00	1.14	117.24	3,717.90	7,018.10	331.78 S	6.01 E	425,886.85	852,249.41	0.17	-331.79	
7,129.00	1.19	110.73	3,809.88	7,110.08	332.54 S	7.72 E	425,886.09	852,251.12	0.15	-332.55	
7,222.00	1.23	108.54	3,902.86	7,203.06	333.20 S	9.57 E	425,885.43	852,252.97	0.07	-333.21	
7,315.00	1.27	114.69	3,995.84	7,296.04	333.95 S	11.45 E	425,884.68	852,254.85	0.15	-333.96	
7,409.00	1.19	121.90	4,089.81	7,390.01	334.90 S	13.23 E	425,883.73	852,256.63	0.19	-334.91	
7,503.00	0.44	312.53	4,183.81	7,484.01	335.17 S	13.79 E	425,883.46	852,257.19	1.73	-335.18	
7,598.00	1.19	272.36	4,278.80	7,579.00	334.88 S	12.54 E	425,883.75	852,255.94	0.95	-334.89	
7,692.00	1.36	262.61	4,372.78	7,672.98	334.99 S	10.45 E	425,883.64	852,253.85	0.29	-335.00	

Design Report for Proxy WCA State Com 1H - Lateral

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
					Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)			
7,787.00	1.19	274.56	4,467.75	7,767.95	335.05 S	8.35 E	425,883.58	852,251.75	0.33	-335.06	
7,882.00	1.10	267.36	4,562.73	7,862.93	335.02 S	6.46 E	425,883.61	852,249.86	0.18	-335.02	
7,975.00	0.92	274.12	4,655.72	7,955.92	335.00 S	4.82 E	425,883.63	852,248.22	0.23	-335.01	
8,068.00	0.70	260.50	4,748.71	8,048.91	335.04 S	3.52 E	425,883.59	852,246.92	0.31	-335.05	
8,161.00	0.48	261.47	4,841.70	8,141.90	335.19 S	2.57 E	425,883.44	852,245.97	0.24	-335.20	
8,254.00	0.48	261.82	4,934.70	8,234.90	335.31 S	1.80 E	425,883.32	852,245.20	0.00	-335.31	
8,347.00	0.22	232.29	5,027.70	8,327.90	335.47 S	1.27 E	425,883.16	852,244.67	0.33	-335.47	
8,440.00	0.22	217.96	5,120.70	8,420.90	335.72 S	1.02 E	425,882.91	852,244.42	0.06	-335.72	
8,533.00	0.40	192.74	5,213.70	8,513.90	336.18 S	0.84 E	425,882.45	852,244.24	0.24	-336.18	
8,625.00	0.57	142.73	5,305.69	8,605.89	336.86 S	1.05 E	425,881.77	852,244.45	0.48	-336.86	
8,720.00	0.97	139.91	5,400.69	8,700.89	337.85 S	1.85 E	425,880.78	852,245.25	0.42	-337.85	
8,813.00	1.27	136.57	5,493.67	8,793.87	339.20 S	3.07 E	425,879.43	852,246.47	0.33	-339.20	
8,906.00	1.05	123.39	5,586.65	8,886.85	340.42 S	4.49 E	425,878.21	852,247.89	0.37	-340.42	
9,001.00	1.45	119.17	5,681.63	8,981.83	341.48 S	6.26 E	425,877.15	852,249.66	0.43	-341.49	
9,093.00	1.93	130.69	5,773.59	9,073.79	343.06 S	8.45 E	425,875.57	852,251.85	0.64	-343.07	
9,185.00	2.20	144.66	5,865.53	9,165.73	345.51 S	10.65 E	425,873.12	852,254.05	0.62	-345.52	
9,278.00	0.75	159.78	5,958.49	9,258.69	347.54 S	11.89 E	425,871.09	852,255.29	1.60	-347.55	
9,371.00	0.66	133.23	6,051.49	9,351.69	348.47 S	12.49 E	425,870.16	852,255.89	0.36	-348.49	
9,464.00	0.66	141.41	6,144.48	9,444.68	349.26 S	13.22 E	425,869.37	852,256.62	0.10	-349.27	
9,556.00	0.70	62.92	6,236.48	9,536.68	349.42 S	14.05 E	425,869.21	852,257.45	0.94	-349.43	
9,651.00	0.88	3.42	6,331.47	9,631.67	348.43 S	14.61 E	425,870.20	852,258.01	0.84	-348.44	
9,737.00	1.19	8.25	6,417.45	9,717.65	346.88 S	14.78 E	425,871.75	852,258.18	0.37	-346.90	
9,839.00	1.41	9.57	6,519.43	9,819.63	344.60 S	15.14 E	425,874.03	852,258.54	0.22	-344.61	
9,933.00	2.73	1.66	6,613.37	9,913.57	341.22 S	15.39 E	425,877.41	852,258.79	1.43	-341.23	
10,027.00	1.63	40.60	6,707.30	10,007.50	337.97 S	16.33 E	425,880.66	852,259.73	1.90	-337.98	
10,121.00	1.71	97.37	6,801.27	10,101.47	337.13 S	18.59 E	425,881.50	852,261.99	1.69	-337.15	
10,215.00	2.02	125.41	6,895.22	10,195.42	338.27 S	21.33 E	425,880.36	852,264.73	1.01	-338.29	
10,308.00	0.57	183.42	6,988.19	10,288.39	339.68 S	22.64 E	425,878.95	852,266.04	1.92	-339.71	
10,403.00	1.01	220.69	7,083.19	10,383.39	340.79 S	22.07 E	425,877.84	852,265.47	0.69	-340.81	
10,496.00	1.23	193.53	7,176.17	10,476.37	342.38 S	21.30 E	425,876.25	852,264.70	0.61	-342.40	
10,589.00	1.76	163.20	7,269.14	10,569.34	344.72 S	21.48 E	425,873.91	852,264.88	1.00	-344.74	
10,684.00	2.29	144.13	7,364.08	10,664.28	347.65 S	23.01 E	425,870.98	852,266.41	0.90	-347.68	
10,779.00	2.29	126.55	7,459.01	10,759.21	350.32 S	25.65 E	425,868.31	852,269.05	0.74	-350.35	
10,872.00	2.77	122.16	7,551.91	10,852.11	352.62 S	29.04 E	425,866.01	852,272.44	0.56	-352.65	
10,889.00	3.56	110.03	7,568.89	10,869.09	353.02 S	29.89 E	425,865.61	852,273.29	6.07	-353.05	
10,978.00	2.64	108.89	7,657.76	10,957.96	354.63 S	34.42 E	425,864.00	852,277.82	1.04	-354.67	
11,068.00	1.10	8.52	7,747.72	11,047.92	354.45 S	36.51 E	425,864.18	852,279.91	3.37	-354.49	
11,158.00	2.81	294.34	7,837.68	11,137.88	352.69 S	34.63 E	425,865.94	852,278.03	3.03	-352.72	
11,247.00	5.45	289.50	7,926.44	11,226.64	350.38 S	28.66 E	425,868.25	852,272.06	2.99	-350.41	
11,337.00	5.01	288.45	8,016.06	11,316.26	347.71 S	20.90 E	425,870.92	852,264.30	0.50	-347.73	
11,426.00	4.13	288.01	8,104.78	11,404.98	345.49 S	14.17 E	425,873.14	852,257.57	0.99	-345.50	

Design Report for Proxy WCA State Com 1H - Lateral

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates Northing (usft)	Local Coordinates Easting (usft)	Map Coordinates Northing (usft)	Map Coordinates Easting (usft)	Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
11,516.00	3.65	294.34	8,194.57	11,494.77	343.30 S	8.47 E	425,875.33	852,251.87	0.71	-343.31	
11,607.00	3.12	292.49	8,285.41	11,585.61	341.16 S	3.55 E	425,877.47	852,246.95	0.59	-341.16	
11,652.00	2.95	40.69	8,330.38	11,630.58	339.81 S	3.17 E	425,878.82	852,246.57	10.93	-339.82	
11,697.00	9.10	39.28	8,375.11	11,675.31	336.18 S	6.18 E	425,882.45	852,249.58	13.67	-336.18	
11,742.00	16.09	13.61	8,419.03	11,719.23	327.35 S	9.91 E	425,891.28	852,253.31	19.54	-327.36	
11,787.00	24.22	6.23	8,461.24	11,761.44	312.08 S	12.38 E	425,906.55	852,255.78	18.90	-312.09	
11,832.00	30.33	1.05	8,501.23	11,801.43	291.52 S	13.59 E	425,927.11	852,256.99	14.55	-291.54	
11,877.00	35.03	358.32	8,539.10	11,839.30	267.24 S	13.42 E	425,951.39	852,256.82	10.94	-267.25	
11,922.00	38.86	354.54	8,575.06	11,875.26	240.26 S	11.70 E	425,978.37	852,255.10	9.89	-240.27	
11,966.00	42.73	353.22	8,608.36	11,908.56	211.69 S	8.62 E	426,006.94	852,252.02	9.01	-211.69	
12,011.00	47.69	352.87	8,640.06	11,940.26	180.00 S	4.75 E	426,038.63	852,248.15	11.04	-180.00	
12,056.00	53.27	354.98	8,668.68	11,968.88	145.49 S	1.11 E	426,073.14	852,244.51	12.92	-145.49	
12,101.00	59.96	357.44	8,693.43	11,993.63	108.02 S	1.35 W	426,110.61	852,242.05	15.55	-108.02	
12,146.00	65.93	358.50	8,713.89	12,014.09	67.99 S	2.75 W	426,150.64	852,240.65	13.43	-67.99	
12,191.00	72.53	357.71	8,729.84	12,030.04	25.96 S	4.15 W	426,192.67	852,239.25	14.76	-25.96	
12,235.00	77.05	357.53	8,741.38	12,041.58	16.45 N	5.91 W	426,235.08	852,237.49	10.28	16.45	
12,280.00	82.73	356.48	8,749.28	12,049.48	60.67 N	8.23 W	426,279.30	852,235.17	12.83	60.68	
12,325.00	88.53	357.97	8,752.71	12,052.91	105.47 N	10.40 W	426,324.10	852,233.00	13.30	105.48	
12,415.00	89.19	357.09	8,754.50	12,054.70	195.36 N	14.28 W	426,413.99	852,229.12	1.22	195.38	
12,504.00	92.00	357.09	8,753.57	12,053.77	284.24 N	18.80 W	426,502.87	852,224.60	3.16	284.25	
12,594.00	92.44	358.76	8,750.09	12,050.29	374.11 N	22.05 W	426,592.74	852,221.35	1.92	374.13	
12,683.00	93.85	1.66	8,745.20	12,045.40	462.96 N	21.73 W	426,681.59	852,221.67	3.62	462.98	
12,773.00	90.95	5.62	8,741.43	12,041.63	552.67 N	16.02 W	426,771.30	852,227.38	5.45	552.69	
12,862.00	91.82	5.62	8,739.28	12,039.48	641.22 N	7.30 W	426,859.85	852,236.10	0.98	641.22	
12,952.00	89.23	3.68	8,738.46	12,038.66	730.90 N	0.01 W	426,949.53	852,243.39	3.60	730.90	
13,042.00	89.23	3.42	8,739.67	12,039.87	820.72 N	5.56 E	427,039.35	852,248.96	0.29	820.72	
13,131.00	88.57	2.89	8,741.37	12,041.57	909.57 N	10.46 E	427,128.20	852,253.86	0.95	909.56	
13,221.00	89.36	2.89	8,743.00	12,043.20	999.44 N	15.00 E	427,218.07	852,258.40	0.88	999.43	
13,311.00	89.85	2.89	8,743.62	12,043.82	1,089.32 N	19.53 E	427,307.95	852,262.93	0.54	1,089.30	
13,400.00	90.02	0.78	8,743.72	12,043.92	1,178.27 N	22.38 E	427,396.90	852,265.78	2.38	1,178.25	
13,490.00	87.60	359.46	8,745.59	12,045.79	1,268.25 N	22.57 E	427,486.88	852,265.97	3.06	1,268.22	
13,580.00	88.00	358.85	8,749.05	12,049.25	1,358.17 N	21.25 E	427,576.80	852,264.65	0.81	1,358.15	
13,670.00	89.93	356.83	8,750.67	12,050.87	1,448.08 N	17.85 E	427,666.71	852,261.25	3.10	1,448.06	
13,759.00	92.09	357.09	8,749.10	12,049.30	1,536.94 N	13.14 E	427,755.57	852,256.54	2.44	1,536.92	
13,849.00	93.14	356.30	8,745.00	12,045.20	1,626.69 N	7.95 E	427,845.32	852,251.35	1.46	1,626.68	
13,938.00	92.26	355.86	8,740.80	12,041.00	1,715.38 N	1.87 E	427,934.01	852,245.27	1.11	1,715.38	
14,028.00	92.53	355.42	8,737.04	12,037.24	1,805.04 N	4.96 W	428,023.67	852,238.44	0.57	1,805.05	
14,117.00	93.41	355.33	8,732.43	12,032.63	1,893.63 N	12.13 W	428,112.26	852,231.27	0.99	1,893.65	
14,207.00	91.56	356.83	8,728.53	12,028.73	1,983.33 N	18.27 W	428,201.96	852,225.13	2.65	1,983.35	
14,297.00	91.96	356.48	8,725.77	12,025.97	2,073.14 N	23.52 W	428,291.77	852,219.88	0.59	2,073.16	
14,386.00	92.00	356.21	8,722.69	12,022.89	2,161.90 N	29.19 W	428,380.53	852,214.21	0.31	2,161.93	

Design Report for Proxy WCA State Com 1H - Lateral

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates Northing (usft)	Local Coordinates Easting (usft)	Map Coordinates Northing (usft)	Map Coordinates Easting (usft)	Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
14,476.00	92.26	355.95	8,719.35	12,019.55	2,251.63 N	35.34 W	428,470.26	852,208.06	0.41	2,251.66	
14,565.00	93.76	355.77	8,714.67	12,014.87	2,340.27 N	41.76 W	428,558.90	852,201.64	1.70	2,340.31	
14,655.00	93.63	357.18	8,708.87	12,009.07	2,429.91 N	47.28 W	428,648.54	852,196.12	1.57	2,429.96	
14,745.00	93.32	357.88	8,703.42	12,003.62	2,519.66 N	51.15 W	428,738.29	852,192.25	0.85	2,519.71	
14,834.00	94.29	359.64	8,697.51	11,997.71	2,608.44 N	53.07 W	428,827.07	852,190.33	2.25	2,608.49	
14,924.00	94.73	0.34	8,690.43	11,990.63	2,698.16 N	53.09 W	428,916.79	852,190.31	0.92	2,698.22	
15,014.00	94.73	359.38	8,683.01	11,983.21	2,787.86 N	53.31 W	429,006.49	852,190.09	1.06	2,787.91	
15,108.00	94.24	359.20	8,675.66	11,975.86	2,881.56 N	54.47 W	429,100.19	852,188.93	0.56	2,881.61	
15,202.00	92.70	1.05	8,669.97	11,970.17	2,975.38 N	54.26 W	429,194.01	852,189.14	2.56	2,975.43	
15,296.00	92.75	1.93	8,665.50	11,965.70	3,069.24 N	51.82 W	429,287.87	852,191.58	0.94	3,069.29	
15,390.00	92.48	5.53	8,661.21	11,961.41	3,162.93 N	45.71 W	429,381.56	852,197.69	3.84	3,162.97	
15,484.00	93.63	3.24	8,656.20	11,956.40	3,256.51 N	38.54 W	429,475.14	852,204.86	2.72	3,256.55	
15,578.00	92.22	4.03	8,651.40	11,951.60	3,350.20 N	32.58 W	429,568.83	852,210.82	1.72	3,350.23	
15,672.00	90.07	3.95	8,649.53	11,949.73	3,443.95 N	26.05 W	429,662.58	852,217.35	2.29	3,443.97	
15,766.00	90.99	4.30	8,648.66	11,948.86	3,537.70 N	19.28 W	429,756.33	852,224.12	1.05	3,537.72	
15,860.00	90.33	1.75	8,647.57	11,947.77	3,631.55 N	14.32 W	429,850.18	852,229.08	2.80	3,631.56	
15,955.00	89.63	4.03	8,647.61	11,947.81	3,726.42 N	9.53 W	429,945.05	852,233.87	2.51	3,726.43	
16,049.00	89.54	2.36	8,648.29	11,948.49	3,820.27 N	4.30 W	430,038.90	852,239.10	1.78	3,820.28	
16,143.00	88.79	1.31	8,649.66	11,949.86	3,914.21 N	1.29 W	430,132.84	852,242.11	1.37	3,914.21	
16,239.00	89.14	0.87	8,651.39	11,951.59	4,010.18 N	0.54 E	430,228.81	852,243.94	0.59	4,010.18	
16,334.00	89.27	0.52	8,652.71	11,952.91	4,105.16 N	1.69 E	430,323.79	852,245.09	0.39	4,105.16	
16,427.00	90.11	0.17	8,653.21	11,953.41	4,198.16 N	2.25 E	430,416.79	852,245.65	0.98	4,198.15	
16,521.00	89.63	359.82	8,653.43	11,953.63	4,292.16 N	2.24 E	430,510.79	852,245.64	0.63	4,292.15	
16,615.00	90.33	357.36	8,653.46	11,953.66	4,386.12 N	0.07 W	430,604.75	852,243.33	2.72	4,386.12	
16,707.00	89.93	358.67	8,653.25	11,953.45	4,478.06 N	3.26 W	430,696.69	852,240.14	1.49	4,478.07	Last MWD Survey - 16707.00' MD
16,762.00	89.93	358.67	8,653.32	11,953.52	4,533.05 N	4.53 W	430,751.68	852,238.87	0.00	4,533.05	Projection to TD - 16762.00' MD

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
16,707.00	11,953.45	4,478.06	-3.26	Last MWD Survey - 16707.00' MD
16,762.00	11,953.52	4,533.05	-4.53	Projection to TD - 16762.00' MD

Design Report for Proxy WCA State Com 1H - Lateral

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
TD	No Target (Freehand)	359.94	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
236.00	2,735.00	Survey #1	MWD
2,833.00	10,121.00	MWD (ST01) Pilot Hole	MWD+SC
10,215.00	16,707.00	Survey #1	MWD
16,762.00	16,762.00	Projection to TD	Blind (OWSG)

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (°)	+N/-S (°)	+E/-W (°)	Northing (°)	Easting (°)	Latitude	Longitude
()									

Directional Difficulty Index

Average Dogleg over Survey:	1.52 °/100usft	Maximum Dogleg over Survey:	19.54 °/100usft at 11,742.00 usft
Net Tortousity applicable to Plans:	0.21 °/100usft	Directional Difficulty Index:	6.284

Audit Info

North Reference Sheet for Proxy WCA State Com - Proxy WCA State Com 1H - Lateral

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to GE 3274.60 = 25.6 @ 3300.20usft (Precision 104). Northing and Easting are relative to Proxy WCA State Com 1H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -104.3333333°, Longitude Origin:0.00000000°, Latitude Origin:0.00000000°

False Easting: 541,337.50usft, False Northing: 0.00usft, Scale Reduction: 1.00001980

Grid Coordinates of Well: 426,218.63 usft N, 852,243.40 usft E

Geographical Coordinates of Well: 32° 10' 03.95" N, 103° 19' 42.82" W

Grid Convergence at Surface is: 0.54°

Based upon Minimum Curvature type calculations, at a Measured Depth of 16,762.00usft
the Bottom Hole Displacement is 4,533.05usft in the Direction of 359.94° (Grid).

Magnetic Convergence at surface is: -6.32° (26 December 2017, , BGGM2017)

