

SEP 26 2014

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15-41595

OCCIDENTAL PERMIAN LTD.

Cedar Canyon

Eddy County, NM (Grid North)

Cedar Canyon 16 State #6H

DH - Job #320614-MPH-775

Survey: MWD

SDI Survey Report

This survey is correct to the best of my knowledge and is supported by actual field data.

[Signature]

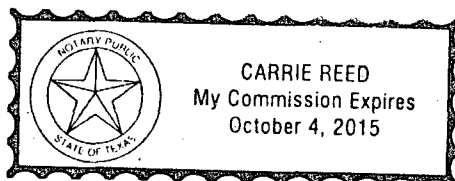
Notarized this date 11/12 of September, 2014.

[Signature]

Notary Signature

County of Midland

State of Texas



SDI
SDI Survey Report

Company:	OCCIDENTAL PERMIAN LTD.	Local Co-ordinate Reference:	Well Cedar Canyon 16 State #6H
Project:	Cedar Canyon	TVD Reference:	Mean Sea Level (System)
Site:	Eddy County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	Cedar Canyon 16 State #6H	North Reference:	Grid
Wellbore:	DH - Job #320614-MPH-775	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #320614-MPH-775	Database:	EDM-Regulatory

Project	Cedar Canyon		
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	Eddy County, NM (Grid North)				
Site Position:		Northing:	441,785.82 usft	Latitude:	32° 12' 50.714 N
From:	Lat/Long	Easting:	609,864.21 usft	Longitude:	103° 58' 41.159 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.19 °

Well	Cedar Canyon 16 State #6H, Horizontal					
Well Position	+N-S	0.0 usft	Northing:	441,785.82 usft	Latitude:	32° 12' 50.714 N
	+E-W	0.0 usft	Easting:	609,864.21 usft	Longitude:	103° 58' 41.159 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	0.0 usft

Wellbore	DH - Job #320614-MPH-775				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	6/11/2014	7.41	60.03	48,293

Design	DH - Job #320614-MPH-775			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	272.46

Survey Program	Date: 9/10/2014				
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
417.0	13,786.0	MWD (DH - Job #320614-MPH-775)	MWD	MWD	

Survey								
MD	Inc	Azi (azimuth)	TVD	N/S	E/W	Closure Azimuth	Closure Distance	
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°)	(usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0	
417.0	0.44	186.60	417.0	-1.6	-0.2	186.60	1.6	
510.0	0.62	209.80	510.0	-2.4	-0.5	191.28	2.4	
603.0	0.53	234.68	603.0	-3.1	-1.1	199.33	3.3	
695.0	0.44	235.47	695.0	-3.5	-1.7	206.01	3.9	
788.0	0.35	247.16	788.0	-3.8	-2.3	210.68	4.4	
973.0	0.09	23.04	973.0	-3.9	-2.7	214.95	4.8	
1,162.0	0.18	205.85	1,162.0	-4.0	-2.8	214.76	4.9	
1,257.0	0.26	210.51	1,257.0	-4.4	-3.0	214.34	5.3	
1,351.0	0.35	296.73	1,351.0	-4.4	-3.3	217.14	5.5	
1,445.0	0.26	311.67	1,445.0	-4.1	-3.8	222.21	5.6	
1,540.0	0.18	186.69	1,540.0	-4.2	-3.9	223.50	5.7	

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Well:	Cedar Canyon 16 State #6H	North Reference:	Grid
Wellbore:	DH - Job #320614-MPH-775	Survey Calculation Method:	Minimum Curvature
Design:	DH - Job #320614-MPH-775	Database:	EDM-Regulatory

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
1,634.0	0.09	17.85	1,634.0	-4.2	-3.9	222.94	5.8	
1,729.0	0.26	11.08	1,729.0	-3.9	-3.9	224.45	5.5	
1,823.0	0.09	242.06	1,823.0	-3.8	-3.9	225.92	5.4	
1,918.0	0.26	87.64	1,918.0	-3.8	-3.7	224.60	5.3	
2,012.0	0.09	38.86	2,012.0	-3.7	-3.5	223.05	5.1	
2,107.0	0.44	259.99	2,107.0	-3.7	-3.8	225.47	5.3	
2,201.0	0.26	321.42	2,201.0	-3.6	-4.3	229.72	5.6	
2,296.0	0.18	101.43	2,296.0	-3.5	-4.3	230.75	5.5	
2,390.0	0.97	120.15	2,390.0	-3.9	-3.4	221.27	5.2	
2,484.0	1.23	135.89	2,484.0	-5.0	-2.1	202.12	5.4	
2,579.0	2.11	130.17	2,578.9	-6.9	0.0	180.04	6.9	
2,673.0	2.11	156.37	2,672.8	-9.6	2.0	168.17	9.8	
2,768.0	0.97	181.24	2,767.8	-12.0	2.7	167.36	12.3	
2,862.0	0.26	169.64	2,861.8	-13.0	2.7	168.21	13.3	
2,957.0	0.26	195.13	2,956.8	-13.4	2.7	168.64	13.7	
3,051.0	0.18	204.35	3,050.8	-13.8	2.6	169.39	14.0	
3,094.0	0.26	155.75	3,093.8	-13.9	2.6	169.45	14.2	
3,143.0	0.44	169.81	3,142.8	-14.2	2.7	169.35	14.5	
3,237.0	0.53	156.72	3,236.8	-15.0	2.9	169.00	15.3	
3,332.0	1.93	272.38	3,331.8	-15.3	1.5	174.46	15.4	
3,426.0	3.17	273.44	3,425.7	-15.1	-2.7	190.12	15.3	
3,521.0	5.28	278.01	3,520.4	-14.3	-9.6	213.96	17.3	
3,615.0	6.77	284.51	3,613.9	-12.3	-19.3	237.42	22.9	
3,710.0	7.65	285.04	3,708.2	-9.3	-30.8	253.23	32.2	
3,804.0	7.65	288.38	3,801.3	-5.7	-42.8	262.43	43.2	
3,899.0	8.18	294.88	3,895.4	-0.9	-54.9	269.11	54.9	
3,993.0	8.35	300.33	3,988.4	5.4	-66.9	274.62	67.1	
4,088.0	8.18	299.72	4,082.5	12.2	-78.7	278.84	79.7	
4,182.0	8.44	299.10	4,175.5	18.9	-90.5	281.80	92.5	
4,276.0	8.53	298.31	4,268.4	25.6	-102.7	283.98	105.8	
4,371.0	8.27	297.61	4,362.4	32.1	-115.0	285.59	119.4	
4,465.0	8.00	297.08	4,455.5	38.2	-126.8	286.76	132.4	
4,560.0	7.47	296.29	4,549.6	43.9	-138.2	287.64	145.0	
4,654.0	7.39	294.44	4,642.8	49.1	-149.2	288.23	157.1	
4,749.0	8.27	297.78	4,736.9	54.9	-160.8	288.84	169.9	
4,843.0	8.27	298.92	4,830.0	61.3	-172.7	289.54	183.2	
4,938.0	8.18	298.13	4,924.0	67.8	-184.6	290.16	196.7	
5,032.0	8.00	297.52	5,017.0	73.9	-196.3	290.64	209.8	
5,126.0	7.47	295.23	5,110.2	79.6	-207.7	290.97	222.4	
5,221.0	7.21	295.83	5,204.4	84.8	-218.6	291.20	234.5	
5,315.0	7.83	299.01	5,297.6	90.5	-229.5	291.51	246.7	
5,410.0	7.12	296.81	5,391.8	96.3	-240.4	291.82	259.0	
5,504.0	7.12	299.98	5,485.1	101.8	-250.7	292.10	270.6	
5,599.0	7.39	301.30	5,579.3	107.9	-261.0	292.46	282.4	

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Design:	DH - Job #320614-MPH-775	Database:	EDM-Regulatory

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
5,693.0	6.86	301.91	5,672.6	114.0	-270.9	292.83	294.0	
5,788.0	7.12	299.80	5,766.9	120.0	-280.9	293.13	305.4	
5,882.0	8.00	298.92	5,860.1	126.0	-291.6	293.37	317.7	
5,977.0	7.65	299.54	5,954.2	132.3	-302.9	293.60	330.6	
6,071.0	7.56	298.84	6,047.3	138.4	-313.8	293.80	343.0	
6,166.0	8.53	296.20	6,141.4	144.5	-325.6	293.94	356.2	
6,260.0	7.74	294.62	6,234.5	150.2	-337.6	293.99	369.5	
6,355.0	8.27	299.19	6,328.5	156.2	-349.4	294.09	382.7	
6,449.0	6.95	297.25	6,421.7	162.1	-360.3	294.23	395.1	
6,543.0	8.44	294.35	6,514.9	167.6	-371.7	294.27	407.7	
6,638.0	8.00	296.81	6,608.9	173.4	-383.9	294.31	421.3	
6,732.0	8.18	297.43	6,701.9	179.5	-395.7	294.40	434.5	
6,827.0	7.83	294.09	6,796.0	185.2	-407.6	294.44	447.7	
6,921.0	8.44	297.25	6,889.1	191.0	-419.6	294.48	461.0	
7,016.0	8.62	301.65	6,983.0	197.9	-431.8	294.62	475.0	
7,110.0	7.03	297.78	7,076.1	204.3	-442.9	294.76	487.8	
7,204.0	8.09	302.44	7,169.3	210.5	-453.6	294.90	500.1	
7,299.0	7.39	306.57	7,263.5	217.8	-464.1	295.13	512.7	
7,393.0	6.01	302.91	7,356.8	224.0	-473.1	295.34	523.5	
7,488.0	5.01	295.50	7,451.4	228.5	-481.1	295.41	532.6	
7,582.0	5.10	285.13	7,545.0	231.4	-488.8	295.33	540.8	
7,677.0	5.63	283.98	7,639.6	233.6	-497.4	295.16	549.5	
7,771.0	4.92	281.61	7,733.2	235.5	-505.8	294.97	558.0	
7,866.0	3.53	281.62	7,827.9	236.9	-512.7	294.81	564.8	
7,960.0	2.02	288.29	7,921.8	238.0	-517.1	294.72	569.2	
8,055.0	2.39	298.72	8,016.8	239.5	-520.4	294.71	572.9	
8,118.0	3.17	302.44	8,079.7	241.1	-523.0	294.75	575.9	
8,153.0	3.25	302.26	8,114.6	242.1	-524.7	294.77	577.9	
8,184.0	4.57	308.59	8,145.6	243.4	-526.4	294.81	579.9	
8,216.0	9.15	307.19	8,177.3	245.7	-529.4	294.90	583.7	
8,247.0	14.33	307.10	8,207.7	249.5	-534.4	295.03	589.8	
8,279.0	17.32	304.90	8,238.4	254.6	-541.5	295.18	598.4	
8,310.0	19.43	301.56	8,267.9	260.0	-549.7	295.31	608.1	
8,342.0	23.04	297.43	8,297.7	265.6	-559.8	295.39	619.6	
8,373.0	26.56	292.33	8,325.8	271.1	-571.6	295.37	632.6	
8,405.0	27.41	286.51	8,354.3	275.9	-585.3	295.24	647.0	
8,436.0	29.02	283.02	8,381.7	279.6	-599.4	295.01	661.4	
8,468.0	32.18	280.38	8,409.2	282.9	-615.4	294.69	677.3	
8,499.0	34.73	279.76	8,435.1	285.9	-632.2	294.33	693.8	
8,531.0	37.90	278.36	8,460.9	288.9	-650.9	293.93	712.1	
8,562.0	41.94	274.75	8,484.6	291.1	-670.7	293.46	731.1	
8,594.0	45.02	270.98	8,507.8	292.2	-692.7	292.87	751.8	
8,625.0	47.40	268.87	8,529.3	292.1	-715.0	292.22	772.4	
8,657.0	50.12	268.78	8,550.4	291.6	-739.1	291.53	794.6	

SDI
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Company:	OCCIDENTAL PERMIAN LTD.	Local Co-ordinate Reference:	Well Cedar Canyon 16 State #6H
Project:	Cedar Canyon	TVD Reference:	Mean Sea Level (System)
Site:	Eddy County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
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Design:	DH - Job #320614-MPH-775	Database:	EDM-Regulatory

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
8,688.0	53.82	269.66	8,569.5	291.3	-763.5	290.88	817.2	
8,720.0	56.72	271.33	8,587.7	291.6	-789.8	290.26	841.9	
8,751.0	58.92	272.91	8,604.2	292.5	-816.0	289.72	866.9	
8,783.0	61.03	274.23	8,620.2	294.3	-843.7	289.23	893.5	
8,814.0	64.28	274.40	8,634.5	296.3	-871.1	288.79	920.1	
8,846.0	67.27	273.88	8,647.6	298.4	-900.2	288.34	948.4	
8,877.0	69.12	273.52	8,659.1	300.3	-928.9	287.91	976.3	
8,909.0	69.38	274.31	8,670.5	302.3	-958.8	287.50	1,005.3	
8,940.0	70.87	273.26	8,681.0	304.3	-987.9	287.12	1,033.7	
8,972.0	72.55	272.38	8,691.0	305.8	-1,018.2	286.71	1,063.1	
9,001.3	74.29	273.21	8,699.4	307.1	-1,046.3	286.36	1,090.4	
9,003.0	74.39	273.26	8,699.9	307.2	-1,047.9	286.34	1,092.0	
9,034.0	75.18	272.73	8,708.0	308.8	-1,077.8	285.99	1,121.1	
9,066.0	78.17	270.10	8,715.4	309.5	-1,108.9	285.60	1,151.3	
9,098.0	82.75	268.87	8,720.7	309.3	-1,140.5	285.17	1,181.6	
9,188.0	92.33	265.79	8,724.5	305.1	-1,230.2	283.93	1,267.4	
9,283.0	93.47	265.88	8,719.7	298.2	-1,324.8	282.68	1,357.9	
9,377.0	93.03	266.93	8,714.4	292.3	-1,418.4	281.64	1,448.2	
9,472.0	90.84	268.60	8,711.2	288.6	-1,513.3	280.80	1,540.6	
9,566.0	92.07	269.13	8,708.8	286.7	-1,607.3	280.11	1,632.6	
9,661.0	89.87	268.34	8,707.2	284.6	-1,702.2	279.49	1,725.8	
9,755.0	90.92	268.95	8,706.5	282.4	-1,796.2	278.94	1,818.2	
9,849.0	92.77	269.13	8,703.5	280.8	-1,890.1	278.45	1,910.9	
9,944.0	91.45	269.22	8,700.0	279.5	-1,985.0	278.01	2,004.6	
10,038.0	89.16	269.04	8,699.5	278.0	-2,079.0	277.62	2,097.5	
10,133.0	89.87	268.51	8,700.3	276.0	-2,174.0	277.24	2,191.4	
10,227.0	90.31	269.48	8,700.2	274.4	-2,268.0	276.90	2,284.5	
10,322.0	92.51	271.50	8,697.8	275.2	-2,362.9	276.64	2,378.9	
10,416.0	92.59	269.74	8,693.7	276.2	-2,456.8	276.41	2,472.3	
10,511.0	91.80	270.10	8,690.0	276.1	-2,551.8	276.17	2,566.7	
10,605.0	92.24	269.74	8,686.7	275.9	-2,645.7	275.95	2,660.1	
10,699.0	93.91	269.48	8,681.7	275.3	-2,739.6	275.74	2,753.4	
10,794.0	92.77	270.45	8,676.1	275.2	-2,834.4	275.55	2,847.7	
10,888.0	89.78	270.62	8,674.0	276.1	-2,928.4	275.39	2,941.4	
10,983.0	89.87	269.83	8,674.3	276.5	-3,023.4	275.22	3,036.0	
11,077.0	91.01	268.87	8,673.6	275.4	-3,117.3	275.05	3,129.5	
11,172.0	92.68	268.87	8,670.5	273.5	-3,212.3	274.87	3,223.9	
11,266.0	91.19	268.87	8,667.4	271.7	-3,306.2	274.70	3,317.3	
11,360.0	91.54	268.87	8,665.1	269.8	-3,400.2	274.54	3,410.8	
11,455.0	90.31	269.66	8,663.6	268.6	-3,495.1	274.39	3,505.4	
11,549.0	91.63	270.45	8,662.0	268.7	-3,589.1	274.28	3,599.2	
11,644.0	92.86	270.18	8,658.3	269.2	-3,684.0	274.18	3,693.9	
11,738.0	91.98	270.18	8,654.3	269.5	-3,778.0	274.08	3,787.6	
11,833.0	91.36	271.50	8,651.5	270.9	-3,872.9	274.00	3,882.4	
11,927.0	92.33	271.44	8,648.5	273.3	-3,966.8	273.94	3,976.2	

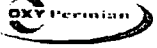
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Well:	Cedar Canyon 16 State #6H	North Reference:	Grid
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Design:	DH - Job #320614-MPH-775	Database:	EDM-Regulatory

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)
12,021.0	91.28	270.45	8,645.6	274.9	-4,060.8	273.87	4,070.1
12,116.0	91.80	270.36	8,643.0	275.5	-4,155.7	273.79	4,164.9
12,210.0	90.92	270.80	8,640.8	276.5	-4,249.7	273.72	4,258.7
12,305.0	90.75	271.33	8,639.4	278.3	-4,344.7	273.66	4,353.6
12,399.0	90.48	271.68	8,638.4	280.7	-4,438.6	273.62	4,447.5
12,493.0	90.92	271.68	8,637.2	283.5	-4,532.6	273.58	4,541.4
12,588.0	88.99	270.54	8,637.3	285.3	-4,627.6	273.53	4,636.3
12,683.0	87.67	270.27	8,640.1	286.0	-4,722.5	273.47	4,731.2
12,777.0	88.99	269.66	8,642.8	285.9	-4,816.5	273.40	4,824.9
12,872.0	90.13	269.13	8,643.5	284.9	-4,911.5	273.32	4,919.7
12,966.0	90.84	268.60	8,642.8	283.1	-5,005.4	273.24	5,013.4
13,060.0	91.80	267.81	8,640.6	280.1	-5,099.4	273.14	5,107.1
13,155.0	93.30	267.37	8,636.4	276.1	-5,194.2	273.04	5,201.5
13,250.0	92.42	269.22	8,631.6	273.3	-5,289.0	272.96	5,296.1
13,344.0	90.84	271.41	8,628.9	273.8	-5,383.0	272.91	5,389.9
13,438.0	91.36	271.50	8,627.1	276.2	-5,476.9	272.89	5,483.9
13,533.0	90.48	270.71	8,625.6	278.1	-5,571.9	272.86	5,578.8
13,627.0	90.57	270.36	8,624.8	278.9	-5,665.9	272.82	5,672.7
13,636.7	90.73	270.39	8,624.6	279.0	-5,675.6	272.81	5,682.4
13,721.0	92.15	270.62	8,622.5	279.7	-5,759.8	272.78	5,766.6
Last MWD Survey							
13,786.0	92.15	270.62	8,620.1	280.4	-5,824.8	272.76	5,831.5
Projection to Bit							

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
13,721.0	8,622.5	279.7	-5,759.8	Last MWD Survey
13,786.0	8,620.1	280.4	-5,824.8	Projection to Bit

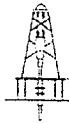


CC 16 S 6H
Eddy County, New Mexico
Northing: 441785.80
Easting: 609864.20
Wellbore #1



To convert Magnetic North to Grid, Add 7.22°
To convert True North to Grid, Subtract 0.12°

Alignments to Grid North
True North: -0.12°
Magnetic North: 7.22°
Magnetic Field
Strength: 48,277 Gauss
Dip Angle: 55.54°
Date: 10/20/2014
Magnet: 102872010



KB @ 2951.0usft
Gr @ 2927.0

SECTION DETAILS:

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	Target
8175.0	4.18	307.16	8136.6	243.0	-525.8	0.00	0.00	535.8	
8303.7	16.00	285.00	8263.1	250.4	-546.8	9.50	-29.41	557.1	
9107.2	90.94	269.63	8709.2	281.0	-1144.6	9.40	-13.89	1155.6	
13639.3	90.94	269.63	8634.8	251.7	-5676.0	0.00	0.00	5681.6	6H LTP
13789.3	90.94	269.63	8632.3	250.7	-5826.0	0.00	0.00	5831.4	

WELL DETAILS: CC 16 S 6H

Ground Level: 2927.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	441785.80	609864.20	32° 12' 50.714 N	103° 58' 41.159 W

DESIGN TARGET DETAILS:

Name	TVD	+N/-S	+E/-W	Northing	Easting
6H BHL	8632.0	250.9	-5826.0	442036.70	604038.19
6H LTP	8634.8	251.7	-5676.0	442037.52	604188.16
6H PP	8721.0	277.0	-1041.3	442062.80	608822.90

PROJECT DETAILS:

Eddy County, New Mexico
Geodetic System: US State Plane 1927
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001

System Datum: Mean Sea Level

SITE DETAILS: Cedar Canyon 16 State 6H

Site Centre Northing: 441785.80
Easting: 609864.20

Positional Uncertainty: 0.0
Convergence: 0.19
Local North: Grid

