

HOBBS OCD

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DESCRIPTION:



UINTAH
ENGINEERING & LAND SURVEYING



7821 Will Rogers Blvd.
Fort Worth, Texas 76140
817.568.1038 (office)
817.568.1499 (fax)
www.msdir.com

MS Directional Survey Data Certification

MS Directional Job Number: DDMO-180605
Survey Type: MWD
Operating Company: ConocoPhillips Company
Well Name & Number: Peridot 8 Federal 3H
Location: Lea County, NM
API Number: 30-025-44589

Original Wellbore

Tie In Depth: Surface
Surveyed Depths: 121' – 5,205' MD
Projected TD Survey: 5,276' MD

Sidetrack

Tie In Depth: 4,574' MD
Surveyed Depths: 4,758' – 13,178' MD
Projected TD Survey: 13,242' MD

Dates Performed: 06/25/2018 – 07/24/2018

I certify that the data is true, correct and complete and within the limitations of the tool set forth by MS Directional; that I am authorized and qualified to make this report and that I have reviewed this report and find it conforms to the principles and procedures as set forth by MS Directional.

Digitally signed by:

MWD Surveyor Name: Addison Bailey

Date: 08-13-2018

Email: abailey@msdir.com

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Company:	ConocoPhillips Company			
Well Name:	Peridot 8 Federal 3H - Original Wellbore			
Location:	Lea County, NM			
Rig:	Trinidad #417	Magnetic Declination:	6.73	REFERENCED TO GRID NORTH
Job Number:	DDMO-180605			
API #:	30-025-44589			

Vertical Section Azimuth:	269.80	Proposed Direction:	269.80
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Survey Calculation Method:	Minimum Curvature
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PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	5,276	25.5	201	5250.2	-191	329.28	-328.61

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Azm	DLS/ 100	BUR/ 100'
TIE IN	0	0.00	0.00	0.00	0.00	0.00		0.00			
1	121	0.70	234.40	121.00	-0.43	-0.60	0.60	0.74	234.40	0.58	0.58
2	319	0.60	159.00	318.99	-2.10	-1.21	1.22	2.43	209.98	0.40	-0.05
3	512	0.40	96.20	511.98	-3.12	-0.18	0.19	3.12	183.32	0.28	-0.10
4	699	0.20	183.60	698.98	-3.51	0.45	-0.44	3.54	172.75	0.23	-0.11
5	815	0.50	165.40	814.98	-4.21	0.56	-0.55	4.24	172.39	0.27	0.26
6	975	1.00	117.50	974.96	-5.53	1.98	-1.96	5.87	160.32	0.48	0.31
7	1,158	3.80	97.40	1157.79	-7.05	9.41	-9.38	11.75	126.83	1.57	1.53
8	1,347	3.60	95.40	1346.39	-8.41	21.53	-21.50	23.11	111.34	0.13	-0.11
9	1,535	3.50	90.40	1534.03	-9.01	33.14	-33.11	34.34	105.20	0.17	-0.05
10	1,723	4.60	116.20	1721.58	-12.37	45.64	-45.60	47.29	105.17	1.12	0.59
11	1,910	4.70	117.60	1907.96	-19.23	59.16	-59.10	62.21	108.01	0.08	0.05
12	2,099	6.20	115.50	2096.10	-27.22	75.24	-75.14	80.01	109.89	0.80	0.79
13	2,183	6.30	116.00	2179.60	-31.19	83.47	-83.36	89.11	110.49	0.14	0.12
14	2,309	5.80	114.90	2304.90	-36.90	95.46	-95.33	102.35	111.13	0.41	-0.40
15	2,497	5.30	113.00	2492.02	-44.29	112.07	-111.92	120.51	111.57	0.28	-0.27
16	2,685	4.90	113.80	2679.27	-50.93	127.41	-127.23	137.21	111.79	0.22	-0.21
17	2,873	5.10	116.60	2866.56	-57.91	142.23	-142.03	153.56	112.15	0.17	0.11
18	3,060	4.80	117.30	3052.86	-65.22	156.61	-156.38	169.65	112.61	0.16	-0.16
19	3,244	5.50	117.30	3236.12	-72.79	171.29	-171.03	186.12	113.02	0.38	0.38
20	3,439	6.00	108.40	3430.14	-80.30	189.26	-188.98	205.59	112.99	0.52	0.26
21	3,628	5.40	109.00	3618.20	-86.31	207.05	-206.74	224.32	112.63	0.32	-0.32
22	3,817	5.30	108.50	3806.38	-91.97	223.73	-223.41	241.90	112.35	0.06	-0.05
23	4,006	5.00	107.80	3994.62	-97.26	239.85	-239.51	258.82	112.07	0.16	-0.16
24	4,195	4.60	107.40	4182.95	-102.05	254.93	-254.57	274.59	111.82	0.21	-0.21
25	4,385	4.80	107.70	4372.31	-106.74	269.77	-269.40	290.12	111.59	0.11	0.11
26	4,574	5.00	109.20	4560.62	-111.85	285.08	-284.69	306.24	111.42	0.13	0.11
27	4,763	4.80	107.70	4748.93	-116.97	300.39	-299.98	322.36	111.27	0.13	-0.11
28	4,952	4.90	108.20	4937.26	-121.89	315.59	-315.17	338.32	111.12	0.06	0.05
29	5,016	7.50	125.70	5000.88	-125.18	321.58	-321.15	345.09	111.27	4.98	4.06
30	5,079	12.00	148.10	5062.98	-133.15	328.39	-327.92	354.36	112.07	9.22	7.14
31	5,142	15.80	165.50	5124.15	-147.03	334.00	-333.49	364.93	113.76	8.90	6.03
32	5,205	18.60	183.70	5184.37	-165.37	335.50	-334.92	374.05	116.24	9.58	4.44
PTB:	5,276	25.50	201.00	5250.20	-191.00	329.28	-328.61	380.67	120.12	13.25	9.72

Company:	ConocoPhillips Company
Well Name:	Peridot 8 Federal 3H - Sidetrack
Location:	Lea County, NM
Rig:	Trinidad #417
Job Number:	DDMO-180605
API #:	30-025-44589

Magnetic Declination: 6.73 REFERENCED TO GRID NORTH ▼

Vertical Section Azimuth: 269.80 Proposed Direction: 269.80

Survey Calculation Method: Minimum Curvature

PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	13,242	91.1	272.3	5461.56	-447.49	-7593.01	7594.52

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Azm	DLS/ 100	BUR/ 100'
TIE IN	4,574	5.00	109.20	4560.62	-111.85	285.08		306.24	111.42		
1	4,758	4.10	113.20	4744.04	-117.08	298.70	-298.29	320.82	111.40	0.52	-0.49
2	4,789	0.70	136.30	4775.01	-117.65	299.85	-299.44	322.10	111.42	11.18	-10.97
3	4,821	3.40	279.60	4806.99	-117.64	299.05	-298.63	321.35	111.47	12.45	8.44
4	4,853	6.30	290.50	4838.87	-116.86	296.47	-296.06	318.67	111.51	9.47	9.06
5	4,890	6.80	288.40	4875.63	-115.46	292.49	-292.08	314.45	111.54	1.50	1.35
6	4,922	7.60	276.20	4907.38	-114.63	288.58	-288.18	310.52	111.66	5.38	2.50
7	4,953	8.30	271.50	4938.08	-114.35	284.31	-283.91	306.45	111.91	3.08	2.26
8	4,985	8.30	271.30	4969.75	-114.24	279.69	-279.29	302.12	112.22	0.09	0.00
9	5,016	8.40	270.40	5000.42	-114.17	275.19	-274.79	297.94	112.53	0.53	0.32
10	5,080	10.20	270.20	5063.58	-114.12	264.85	-264.45	288.39	113.31	2.81	2.81
11	5,111	12.90	272.80	5093.95	-113.94	258.65	-258.25	282.63	113.78	8.87	8.71
12	5,143	15.30	271.90	5124.98	-113.63	250.86	-250.46	275.39	114.37	7.53	7.50
13	5,174	17.90	268.90	5154.69	-113.58	242.01	-241.61	267.33	115.14	8.83	8.39
14	5,206	20.60	268.40	5184.89	-113.84	231.46	-231.06	257.94	116.19	8.45	8.44
15	5,237	23.20	267.60	5213.65	-114.24	219.91	-219.51	247.81	117.45	8.44	8.39
16	5,269	26.00	266.40	5242.75	-114.95	206.60	-206.20	236.43	119.09	8.89	8.75
17	5,300	29.10	264.30	5270.23	-116.12	192.32	-191.91	224.66	121.12	10.48	10.00
18	5,332	31.20	260.70	5297.90	-118.24	176.39	-175.98	212.35	123.83	8.66	6.56
19	5,364	34.00	257.40	5324.86	-121.53	159.48	-159.05	200.50	127.31	10.36	8.75
20	5,395	36.50	254.80	5350.17	-125.84	142.12	-141.68	189.82	131.52	9.40	8.06
21	5,427	39.40	255.20	5375.40	-130.93	123.11	-122.65	179.72	136.76	9.10	9.06
22	5,458	42.00	255.60	5398.90	-136.02	103.55	-103.07	170.95	142.72	8.43	8.39
23	5,490	44.60	256.60	5422.19	-141.29	82.25	-81.75	163.48	149.80	8.40	8.13
24	5,521	47.50	257.00	5443.70	-146.38	60.52	-60.01	158.40	157.54	9.40	9.35
25	5,553	51.00	257.70	5464.59	-151.69	36.87	-36.34	156.10	166.34	11.06	10.94
26	5,584	54.10	258.40	5483.44	-156.78	12.80	-12.25	157.30	175.33	10.16	10.00
27	5,616	57.50	259.00	5501.42	-161.96	-13.15	13.72	162.49	184.64	10.74	10.63
28	5,647	60.50	259.20	5517.39	-166.98	-39.24	39.83	171.53	193.23	9.69	9.68
29	5,678	63.60	258.50	5531.91	-172.28	-66.11	66.71	184.53	200.99	10.20	10.00
30	5,710	66.40	258.10	5545.44	-178.16	-94.50	95.12	201.68	207.94	8.82	8.75
31	5,742	69.90	257.70	5557.34	-184.39	-123.54	124.18	221.95	213.82	11.00	10.94
32	5,773	72.50	257.70	5567.33	-190.64	-152.21	152.87	243.95	218.60	8.39	8.39
	5,805	76.00	258.00	5576.02	-197.12	-182.31	183.00	268.51	222.77	10.97	10.94

Company:		ConocoPhillips Company										
Well Name:		Peridot 8 Federal 3H - Sidetrack										
Location:		Lea County, NM										
Rig:		Trinidad #417					Magnetic Declination:		6.73		REFERENCED TO GRID NORTH ▼	
Job Number:		DDMO-180605										
API #:		30-025-44589										
Vertical Section Azimuth:			269.80			Proposed Direction:		269.80				
Survey Calculation Method:			Minimum Curvature									
PTB:	MD	INC		AZM		TVD	N/S	E/W		VS		
	13,242	91.1		272.3		5461.56	-447.49	-7593.01		7594.52		
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance Azm		DLS/ 100	BUR/ 100'	
1	5,836	79.20	258.40	5582.67	-203.31	-211.95	212.66	293.70	226.19	10.40	10.32	
2	5,868	82.90	259.20	5587.65	-209.45	-242.95	243.68	320.77	229.24	11.82	11.56	
3	5,899	85.30	259.80	5590.84	-215.07	-273.27	274.02	347.75	231.80	7.98	7.74	
4	5,931	88.40	260.20	5592.60	-220.61	-304.73	305.50	376.21	234.10	9.77	9.69	
5	5,962	89.30	260.50	5593.22	-225.81	-335.28	336.07	404.24	236.04	3.06	2.90	
6	6,088	91.80	258.20	5592.01	-249.09	-459.09	459.96	522.31	241.52	2.70	1.98	
7	6,214	92.80	257.70	5586.95	-275.37	-582.21	583.17	644.05	244.69	0.89	0.79	
8	6,340	91.60	257.30	5582.12	-302.62	-705.13	706.19	767.33	246.77	1.00	-0.95	
9	6,466	92.80	257.00	5577.28	-330.63	-827.88	829.03	891.46	248.23	0.98	0.95	
10	6,592	89.60	259.00	5574.64	-356.81	-951.08	952.32	1015.81	249.44	2.99	-2.54	
11	6,718	90.70	259.10	5574.31	-380.74	-1074.79	1076.11	1140.23	250.49	0.88	0.87	
12	6,845	90.80	261.10	5572.65	-402.58	-1199.88	1201.28	1265.61	251.45	1.58	0.08	
13	6,970	88.60	264.60	5573.30	-418.13	-1323.88	1325.33	1388.34	252.47	3.31	-1.76	
14	7,096	89.20	267.00	5575.72	-427.36	-1449.51	1450.99	1511.19	253.57	1.96	0.48	
15	7,223	90.40	269.00	5576.17	-431.79	-1576.42	1577.92	1634.48	254.68	1.84	0.94	
16	7,349	91.70	268.60	5573.86	-434.43	-1702.37	1703.87	1756.92	255.68	1.08	1.03	
17	7,475	90.90	269.50	5571.00	-436.52	-1828.31	1829.83	1879.70	256.57	0.96	-0.63	
18	7,601	91.60	269.70	5568.25	-437.39	-1954.28	1955.80	2002.63	257.38	0.58	0.56	
19	7,727	90.70	269.30	5565.72	-438.49	-2080.25	2081.77	2125.96	258.10	0.78	-0.71	
20	7,853	92.00	268.50	5562.75	-440.91	-2206.19	2207.71	2249.81	258.70	1.21	1.03	
21	7,976	90.70	269.00	5559.85	-443.59	-2329.12	2330.66	2370.99	259.22	1.13	-1.06	
22	8,098	91.40	267.90	5557.62	-446.89	-2451.05	2452.60	2491.46	259.67	1.07	0.57	
23	8,222	91.70	270.10	5554.26	-449.06	-2574.98	2576.53	2613.84	260.11	1.79	0.24	
24	8,344	90.70	270.10	5551.71	-448.84	-2696.95	2698.50	2734.05	260.55	0.82	-0.82	
25	8,466	91.70	269.50	5549.15	-449.27	-2818.92	2820.47	2854.50	260.94	0.96	0.82	
26	8,590	90.30	269.80	5546.99	-450.03	-2942.90	2944.45	2977.11	261.31	1.15	-1.13	
27	8,716	91.80	269.00	5544.68	-451.35	-3068.87	3070.42	3101.88	261.63	1.35	1.19	
28	8,812	90.10	269.40	5543.09	-452.69	-3164.84	3166.40	3197.05	261.86	1.82	-1.77	
29	8,938	90.60	268.20	5542.32	-455.32	-3290.81	3292.38	3322.16	262.12	1.03	0.40	
30	9,064	91.30	269.10	5540.23	-458.29	-3416.75	3418.33	3447.35	262.36	0.90	0.56	
31	9,190	90.40	269.80	5538.36	-459.50	-3542.73	3544.31	3572.41	262.61	0.90	-0.71	
32	9,316	90.80	271.20	5537.04	-458.40	-3668.72	3670.29	3697.24	262.88	1.16	0.32	
33	9,443	91.60	270.70	5534.38	-456.30	-3795.67	3797.24	3823.00	263.15	0.74	0.63	
34	9,569	92.40	270.10	5529.98	-455.42	-3921.59	3923.15	3947.94	263.38	0.79	0.63	

Company:	ConocoPhillips Company		
Well Name:	Peridot 8 Federal 3H - Sidetrack		
Location:	Lea County, NM		
Rig:	Trinidad #417	Magnetic Declination:	6.73
Job Number:	DDMO-180605		
API #:	30-025-44589		

Vertical Section Azimuth:	269.80	Proposed Direction:	269.80
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Survey Calculation Method:	Minimum Curvature
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PTB:	MD	INC	AZM	TVD	N/S	E/W	VS				
	13,242	91.1	272.3	5461.56	-447.49	-7593.01	7594.52				
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure		DLS/ 100	BUR/ 100'
35	9,695	91.10	271.20	5526.14	-453.99	-4047.52	4049.08	4072.90	263.60	1.35	-1.03
36	9,821	91.30	271.40	5523.50	-451.13	-4173.46	4175.01	4197.77	263.83	0.22	0.16
37	9,948	90.80	271.50	5521.17	-447.92	-4300.39	4301.93	4323.66	264.05	0.40	-0.39
38	10,074	92.00	270.10	5518.09	-446.16	-4426.34	4427.87	4448.77	264.24	1.46	0.95
39	10,200	90.90	270.70	5514.90	-445.28	-4552.29	4553.82	4574.02	264.41	0.99	-0.87
40	10,326	90.10	270.90	5513.80	-443.52	-4678.27	4679.79	4699.25	264.58	0.65	-0.63
41	10,452	91.70	270.10	5511.83	-442.42	-4804.25	4805.76	4824.58	264.74	1.42	1.27
42	10,578	90.10	269.50	5509.85	-442.86	-4930.23	4931.74	4950.08	264.87	1.36	-1.27
43	10,704	91.70	269.30	5507.87	-444.18	-5056.20	5057.72	5075.67	264.98	1.28	1.27
44	10,830	89.70	270.10	5506.33	-444.84	-5182.18	5183.70	5201.24	265.09	1.71	-1.59
45	10,956	91.70	270.70	5504.79	-443.96	-5308.16	5309.68	5326.70	265.22	1.66	1.59
46	11,082	90.30	269.10	5502.59	-444.18	-5434.14	5435.65	5452.26	265.33	1.69	-1.11
47	11,208	91.50	269.20	5500.61	-446.05	-5560.10	5561.63	5577.97	265.41	0.96	0.95
48	11,334	89.50	269.70	5499.51	-447.26	-5686.09	5687.61	5703.65	265.50	1.64	-1.59
49	11,460	91.10	269.90	5498.85	-447.70	-5812.08	5813.61	5829.30	265.60	1.28	1.27
50	11,587	91.10	268.50	5496.41	-449.47	-5939.04	5940.57	5956.03	265.67	1.10	0.00
51	11,714	92.80	268.50	5492.09	-452.79	-6065.92	6067.46	6082.80	265.73	1.34	1.34
52	11,839	89.70	269.30	5489.37	-455.19	-6190.85	6192.40	6207.56	265.79	2.56	-2.48
53	11,965	89.70	269.30	5490.02	-456.73	-6316.84	6318.40	6333.33	265.86	0.00	0.00
54	12,091	90.40	268.40	5489.91	-459.26	-6442.81	6444.38	6459.16	265.92	0.90	0.56
55	12,217	91.20	268.90	5488.16	-462.23	-6568.76	6570.34	6585.01	265.97	0.75	0.63
56	12,344	91.20	269.50	5485.50	-464.00	-6695.72	6697.30	6711.78	266.04	0.47	0.00
57	12,470	92.20	269.20	5481.76	-465.43	-6821.66	6823.24	6837.52	266.10	0.83	0.79
58	12,596	90.90	269.30	5478.35	-467.08	-6947.60	6949.19	6963.28	266.15	1.03	-1.03
59	12,722	91.20	272.20	5476.04	-465.43	-7073.55	7075.13	7088.85	266.24	2.31	0.24
60	12,848	91.90	271.90	5472.63	-460.92	-7199.42	7200.99	7214.16	266.34	0.60	0.56
61	12,974	92.70	271.50	5467.58	-457.19	-7325.27	7326.82	7339.52	266.43	0.71	0.63
62	13,100	90.60	272.20	5463.95	-453.12	-7451.14	7452.68	7464.91	266.52	1.76	-1.67
63	13,178	91.10	272.30	5462.79	-450.06	-7529.07	7530.60	7542.51	266.58	0.65	0.64
PTB:	13,242	91.10	272.30	5461.56	-447.49	-7593.01	7594.52	7606.18	266.63	0.00	0.00