

DATE: _____ DESCRIPTION: _____



UINTAH
ENGINEERING & LAND SURVEYING



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Fort Worth, Texas 76140
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MS Directional Survey Data Certification

MS Directional Job Number: DDMO-180497
Survey Type: MWD
Operating Company: ConocoPhillips Company
Well Name & Number: Peridot 8 Federal 1H
Location: Lea County, NM
API Number: 30-025-44528
Tie In Depth: Surface
Surveyed Depths: 110' – 13,087' MD
Projected TD Survey: 13,151' MD
Dates Performed: 05/16/2018 – 06/02/2018

HOBBS OCD
JUN 03 2019
RECEIVED

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: 07-16-2018

Email: abailey@msdir.com

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V08.04.02

Company:	ConocoPhillips Company			
Well Name:	Peridot 8 Federal 1H			
Location:	Lea County, NM			
Rig:	Trinidad #417	Magnetic Declination:	6.76	REFERENCED TO GRID NORTH
Job Number:	DDMO-180497			
API #:	30-025-44528			

Vertical Section Azimuth:	269.73	Proposed Direction:	269.73
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Survey Calculation Method:	Minimum Curvature
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PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	13,151	93	268.3	5466.15	-320.45	-7822.79	7824.21

#	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	110	0.10	356.30	110.00	0.10	-0.01	0.01	0.10	356.30	0.09	0.09
2	264	0.40	285.20	264.00	0.37	-0.53	0.53	0.65	304.80	0.25	0.19
3	453	0.50	287.30	452.99	0.79	-1.96	1.95	2.11	291.95	0.05	0.05
4	653	0.40	245.90	652.99	0.76	-3.43	3.42	3.51	282.56	0.17	-0.05
5	832	0.50	288.70	831.98	0.76	-4.74	4.73	4.80	279.10	0.19	0.06
6	909	0.20	154.20	908.98	0.75	-5.00	4.99	5.05	278.48	0.85	-0.39
7	972	0.70	247.60	971.98	0.50	-5.31	5.30	5.33	275.38	1.17	0.79
8	1,031	1.60	213.50	1030.97	-0.32	-6.09	6.10	6.10	266.95	1.85	1.53
9	1,094	3.10	203.30	1093.91	-2.62	-7.25	7.27	7.71	250.12	2.46	2.38
10	1,157	4.10	203.10	1156.79	-6.26	-8.81	8.84	10.81	234.61	1.59	1.59
11	1,282	5.40	185.60	1281.36	-16.22	-11.14	11.21	19.68	214.47	1.55	1.04
12	1,407	5.70	174.60	1405.78	-28.26	-11.13	11.26	30.37	201.49	0.88	0.24
13	1,533	5.10	172.50	1531.22	-40.04	-9.81	10.00	41.22	193.76	0.50	-0.48
14	1,658	4.40	168.80	1655.79	-50.25	-8.15	8.39	50.91	189.21	0.61	-0.56
15	1,784	3.70	176.70	1781.48	-59.05	-6.98	7.26	59.46	186.74	0.71	-0.56
16	1,909	3.60	177.00	1906.22	-67.00	-6.54	6.86	67.32	185.58	0.08	-0.08
17	2,034	3.80	175.30	2030.96	-75.04	-6.00	6.35	75.28	184.57	0.18	0.16
18	2,160	3.80	174.90	2156.68	-83.36	-5.28	5.68	83.53	183.63	0.02	0.00
19	2,187	3.70	176.70	2183.63	-85.13	-5.15	5.55	85.28	183.46	0.57	-0.37
20	2,357	3.40	175.20	2353.30	-95.63	-4.42	4.87	95.73	182.64	0.18	-0.18
21	2,545	2.50	162.10	2541.05	-105.08	-2.69	3.18	105.12	181.47	0.60	-0.48
22	2,733	3.30	177.90	2728.81	-114.39	-1.23	1.77	114.40	180.62	0.60	0.43
23	2,922	5.00	183.90	2917.31	-128.05	-1.59	2.19	128.06	180.71	0.93	0.90
24	3,110	4.20	186.30	3104.70	-143.06	-2.90	3.58	143.09	181.16	0.44	-0.43
25	3,298	4.00	185.00	3292.22	-156.44	-4.23	4.97	156.50	181.55	0.12	-0.11
26	3,486	5.30	178.60	3479.60	-171.65	-4.59	5.40	171.71	181.53	0.74	0.69
27	3,674	5.00	176.00	3666.84	-188.50	-3.81	4.69	188.54	181.16	0.20	-0.16
28	3,862	5.00	178.10	3854.13	-204.87	-2.96	3.93	204.89	180.83	0.10	0.00
29	4,052	4.80	182.20	4043.43	-221.08	-2.99	4.04	221.10	180.78	0.21	-0.11
30	4,241	4.70	188.50	4231.79	-236.64	-4.44	5.56	236.69	181.08	0.28	-0.05
31	4,304	3.30	190.50	4294.63	-240.98	-5.15	6.29	241.03	181.23	2.23	-2.22
32	4,430	0.90	108.60	4420.55	-244.86	-4.88	6.03	244.91	181.14	2.62	-1.90
33	4,619	1.10	90.70	4609.52	-245.36	-1.66	2.81	245.36	180.39	0.20	0.11

Company:	ConocoPhillips Company		
Well Name:	Peridot 8 Federal 1H		
Location:	Lea County, NM		
Rig:	Trinidad #417	Magnetic Declination:	6.76 REFERENCED TO GRID NORTH ▼
Job Number:	DDMO-180497		
API #:	30-025-44528		

Vertical Section Azimuth:	269.73	Proposed Direction:	269.73
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Survey Calculation Method:	Minimum Curvature
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PTB:	MD	INC	AZM	TVD	N/S	E/W	VS
	13,151	93	268.3	5466.15	-320.45	-7822.79	7824.21

#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Azm	DLS/ 100	BUR/ 100'
34	4,808	0.40	117.20	4798.51	-245.68	0.74	0.41	245.68	179.83	0.40	-0.37
35	4,840	0.80	279.60	4830.51	-245.70	0.62	0.53	245.70	179.85	3.71	1.25
36	4,987	2.20	279.00	4977.45	-245.08	-3.18	4.33	245.10	180.74	0.95	0.95
37	4,997	2.80	276.50	4987.44	-245.03	-3.61	4.76	245.05	180.84	6.10	6.00
38	5,060	8.70	275.00	5050.10	-244.44	-9.89	11.04	244.64	182.32	9.37	9.37
39	5,123	15.20	273.80	5111.70	-243.47	-22.89	24.04	244.55	185.37	10.32	10.32
40	5,186	21.80	273.50	5171.41	-242.21	-42.83	43.97	245.97	190.03	10.48	10.48
41	5,248	27.50	273.10	5227.74	-240.73	-68.63	69.77	250.32	195.91	9.20	9.19
42	5,312	33.00	272.50	5283.00	-239.17	-100.83	101.95	259.55	202.86	8.61	8.59
43	5,376	38.30	273.60	5334.99	-237.16	-138.06	139.17	274.42	210.20	8.34	8.28
44	5,439	43.20	272.70	5382.70	-234.92	-179.11	180.21	295.41	217.32	7.83	7.78
45	5,502	46.40	270.30	5427.40	-233.78	-223.47	224.57	323.41	223.71	5.74	5.08
46	5,565	51.70	267.90	5468.68	-234.57	-271.03	272.13	358.44	229.12	8.89	8.41
47	5,627	58.30	267.10	5504.22	-236.80	-321.73	322.85	399.48	233.65	10.70	10.65
48	5,690	64.30	266.90	5534.47	-239.69	-376.89	378.02	446.66	237.54	9.53	9.52
49	5,754	70.30	267.60	5559.15	-242.52	-435.84	436.98	498.77	240.91	9.43	9.38
50	5,817	76.50	267.60	5577.14	-245.04	-496.13	497.28	553.35	243.71	9.84	9.84
51	5,880	81.30	267.90	5589.27	-247.47	-557.89	559.05	610.31	246.08	7.63	7.62
52	5,943	86.20	268.10	5596.12	-249.65	-620.46	621.63	668.80	248.08	7.78	7.78
53	6,128	93.70	267.40	5596.28	-256.91	-805.18	806.38	845.17	252.30	4.07	4.05
54	6,313	91.10	268.90	5588.54	-262.88	-989.90	991.13	1024.21	255.13	1.62	-1.41
55	6,502	90.20	268.50	5586.39	-267.16	-1178.84	1180.08	1208.73	257.23	0.52	-0.48
56	6,686	92.90	268.10	5581.42	-272.62	-1362.67	1363.94	1389.68	258.69	1.48	1.47
57	6,881	93.20	269.90	5571.04	-276.02	-1557.36	1558.64	1581.63	259.95	0.93	0.15
58	7,070	91.20	271.40	5563.79	-273.87	-1746.19	1747.46	1767.54	261.09	1.32	-1.06
59	7,259	87.60	271.90	5565.76	-268.43	-1935.07	1936.32	1953.60	262.10	1.92	-1.90
60	7,445	90.10	271.60	5569.50	-262.75	-2120.93	2122.15	2137.15	262.94	1.35	1.34
61	7,627	88.70	270.10	5571.40	-260.05	-2302.89	2304.09	2317.53	263.56	1.13	-0.77
62	7,826	89.70	268.50	5574.18	-262.49	-2501.85	2503.06	2515.58	264.01	0.95	0.50
63	8,015	92.60	267.60	5570.39	-268.91	-2690.68	2691.92	2704.08	264.29	1.61	1.53
64	8,204	89.50	271.20	5566.92	-270.89	-2879.58	2880.83	2892.30	264.63	2.51	-1.64
65	8,391	92.10	271.40	5564.31	-266.65	-3066.50	3067.72	3078.07	265.03	1.39	1.39
66	8,574	90.30	270.00	5560.48	-264.41	-3249.44	3250.65	3260.18	265.35	1.25	-0.98
67	8,755	92.30	267.70	5556.37	-268.04	-3430.33	3431.56	3440.79	265.53	1.68	1.10

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Job Number:	DDMO-180497		
API #:	30-025-44528		
Vertical Section Azimuth:	269.73	Proposed Direction:	269.73
Survey Calculation Method:	Minimum Curvature		

Survey Calculation Worksheet											
PTB:	MD	INC	AZM	TVD	N/S	E/W	VS				
	13,151	93	268.3	5466.15	-320.45	-7822.79	7824.21				
#	Depth Feet	Inc Degrees	Azm Degrees	TVD Feet	N/S Feet	E/W Feet	Surface Vert Sec	Closure Distance	Azm	DLS/ 100	BUR/ 100'
68	8,940	89.40	267.20	5553.63	-276.27	-3615.11	3616.37	3625.65	265.63	1.59	-1.57
69	9,129	90.90	267.70	5553.14	-284.68	-3803.91	3805.21	3814.55	265.72	0.84	0.79
70	9,318	92.20	269.10	5548.02	-289.96	-3992.76	3994.08	4003.28	265.85	1.01	0.69
71	9,507	92.20	270.00	5540.77	-291.44	-4181.62	4182.94	4191.76	266.01	0.48	0.00
72	9,696	91.20	269.50	5535.16	-292.26	-4370.53	4371.86	4380.29	266.17	0.59	-0.53
73	9,884	89.60	270.90	5533.85	-291.61	-4558.51	4559.83	4567.83	266.34	1.13	-0.85
74	10,073	92.20	270.20	5530.88	-289.79	-4747.46	4748.77	4756.30	266.51	1.42	1.38
75	10,261	93.30	271.70	5521.86	-286.68	-4935.21	4936.51	4943.53	266.68	0.99	0.59
76	10,450	90.80	271.90	5515.10	-280.75	-5123.98	5125.25	5131.67	266.86	1.33	-1.32
77	10,639	91.30	270.70	5511.64	-276.46	-5312.90	5314.14	5320.08	267.02	0.69	0.26
78	10,828	92.70	268.70	5505.04	-277.45	-5501.76	5503.01	5508.76	267.11	1.29	0.74
79	11,018	90.60	269.60	5499.57	-280.27	-5691.65	5692.91	5698.55	267.18	1.20	-1.11
80	11,207	90.70	270.80	5497.42	-279.61	-5880.64	5881.89	5887.28	267.28	0.64	0.05
81	11,395	92.30	270.80	5492.50	-276.98	-6068.55	6069.78	6074.86	267.39	0.85	0.85
82	11,584	90.90	270.40	5487.23	-275.00	-6257.46	6258.68	6263.50	267.48	0.77	-0.74
83	11,774	89.10	270.80	5487.23	-273.01	-6447.44	6448.65	6453.22	267.58	0.97	-0.95
84	11,963	89.50	269.50	5489.54	-272.52	-6636.42	6637.63	6642.01	267.65	0.72	0.21
85	12,152	91.80	269.30	5487.39	-274.50	-6825.38	6826.60	6830.90	267.70	1.22	1.22
86	12,341	89.60	267.50	5485.08	-279.78	-7014.28	7015.52	7019.85	267.72	1.50	-1.16
87	12,530	90.20	267.00	5485.41	-288.84	-7203.06	7204.34	7208.85	267.70	0.41	0.32
88	12,720	90.40	266.70	5484.42	-299.28	-7392.77	7394.10	7398.82	267.68	0.19	0.11
89	12,909	93.00	266.50	5478.81	-310.49	-7581.34	7582.72	7587.69	267.65	1.38	1.38
90	13,087	93.00	268.30	5469.49	-318.55	-7758.90	7760.32	7765.44	267.65	1.01	0.00
PTB:	13,151	93.00	268.30	5466.15	-320.45	-7822.79	7824.21	7829.35	267.65	0.00	0.00