



## Schlumberger Survey Report

Saturday, December 14, 2019 4:57 PM, Report by DrillOps

General Information	
Client:	SWN Production Company, LLC
Field:	Panhandle
Well Name:	Charles Frye OHI 605H

Job Location & Elevation	
Latitude:	40°3'10" N
Longitude:	80°34'37" W
Permanent Datum:	SeaLevel
Elevation of Drill Floor:	1292.90 ft
Depth Source:	1292.90 DrillersDepth

### MWD Survey Reference Criteria

Run1

Geomag Model:	HDGM 2019	Calculation Date:	08-Dec-2019
Location G:	999.35 mgn		
Location B:	52488.55 nT		
Magnetic Dip:	67.16 deg		
Magnetic dec (+E/W-):	'-8.31 deg		
Grid convergence (+E/W-):	0.27 deg		
GTtotal az corr (+E/W-):	'-8.58 deg		

Survey List								
MD (ft)	Incl (deg)	Azim (deg)	TVD (ft)	V Sec (ft)	N/-S (ft)	E/-W (ft)	DLS JRE_DISTANCE (ft)	JRE_AZIMUTH (deg)
							(deg/100ft)	(deg)

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2932	35.61	57.54	2792.52	180.67	329.52	590.32	2.49	676.07	60.83
3020	35.85	57.23	2863.96	197.36	357.22	633.61	0.34	727.37	60.59
3113	36.44	58.7	2939.06	214.63	386.31	680.11	1.13	782.17	60.4
3206	37.86	60.34	3013.19	230.86	414.78	728.51	1.86	838.32	60.34
3299	36.96	56.1	3087.07	248.39	444.5	776.53	2.93	894.75	60.21
3391	36.9	57.38	3160.61	266.93	474.82	822.75	0.84	949.93	60.01
3481	36.39	59.39	3232.83	283.48	502.98	868.48	1.45	1003.62	59.92
3574	37.63	58.93	3307.09	300.01	531.68	916.55	1.37	1059.59	59.88
3666	38.14	61.97	3379.7	315.46	559.53	965.69	2.1	1116.07	59.91
3759	37.9	61.72	3452.97	329.78	586.55	1016.19	0.31	1173.32	60.01
3852	37.13	61.62	3526.74	344.12	613.43	1066.04	0.83	1229.93	60.08
3945	36.72	60.93	3601.08	358.63	640.28	1115.04	0.63	1285.79	60.13
4037	36.36	62.62	3675	372.39	666.19	1163.29	1.16	1340.54	60.2
4130	36.47	60.51	3749.84	386.46	692.47	1211.83	1.35	1395.73	60.26
4223	35.95	59.46	3824.88	401.92	719.95	1259.4	0.87	1450.66	60.25
4312	35.89	58.93	3896.96	417.3	746.69	1304.25	0.36	1502.87	60.21
4402	35.04	59.65	3970.26	432.61	773.36	1349.14	1.05	1555.08	60.18
4495	35.2	59.43	4046.33	448.06	800.48	1395.26	0.22	1608.58	60.16
4587	35.99	61.77	4121.14	462.57	826.75	1441.91	1.71	1662.12	60.17
4680	38.68	63.38	4195.08	475.95	852.71	1491.98	3.08	1718.46	60.25
4773	40.13	62.42	4266.94	489.67	879.61	1544.53	1.69	1777.43	60.34
4865	37.68	58.95	4338.54	505.2	907.84	1594.91	3.56	1835.19	60.35
4958	37.49	57.95	4412.23	522.62	937.52	1643.25	0.69	1891.88	60.29
5051	38.12	57.85	4485.71	540.64	967.81	1691.54	0.68	1948.84	60.22
5144	36.3	58.89	4559.78	557.99	997.32	1739.41	2.07	2005.04	60.17
5234	35.45	56.65	4632.71	574.77	1025.43	1784.03	1.74	2057.73	60.11
5323	34.89	57.72	4705.46	591.58	1053.21	1827.11	0.94	2108.93	60.04
5415	34.88	59.57	4780.93	607.56	1080.59	1872.04	1.15	2161.53	60.01
5508	36.4	62.43	4856.51	621.86	1106.83	1919.43	2.42	2215.69	60.03
5601	38.35	62.78	4930.42	635.25	1132.8	1969.55	2.11	2272.09	60.09
5693	39.55	63.61	5001.96	648.39	1158.88	2021.17	1.42	2329.84	60.17
5782	39.14	60.97	5070.8	662.07	1185.11	2071.12	1.94	2386.21	60.22

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5875	38.19	61.79	5143.41	677.06	1212.94	2122.12	1.16	2444.3	60.25
5965	37.28	62.09	5214.59	690.75	1238.85	2170.73	1.03	2499.36	60.29
6058	36.92	59.75	5288.77	705.65	1266.11	2219.75	1.57	2555.45	60.3
6150	36.1	56.92	5362.72	722.55	1294.82	2266.33	2.04	2610.14	60.26
6243	35.65	57.1	5438.07	740.58	1324.5	2312.04	0.5	2664.55	60.19
6336	35.22	58.17	5513.85	757.86	1353.36	2357.58	0.81	2718.42	60.14
6425	34.23	56	5587	774.56	1380.9	2400.14	1.78	2769.04	60.09
6514	35.52	57.26	5660.01	791.7	1408.88	2442.64	1.66	2819.83	60.02
6557	35.65	57.19	5694.98	799.89	1422.43	2463.68	0.33	2844.83	60
6616	35.13	48.52	5743.11	813.46	1443	2490.87	8.55	2878.66	59.92
6705	34.18	28.42	5816.57	844.06	1482.07	2522.06	12.84	2925.29	59.56
6798	34.18	23.27	5893.52	884.33	1529.06	2544.81	3.11	2968.85	59
6891	32	23.27	5971.43	924.91	1575.7	2564.87	2.35	3010.21	58.44
6983	32.17	21.22	6049.38	964.48	1620.92	2583.37	1.2	3049.78	57.89
7076	33.66	18.27	6127.46	1006.66	1668.48	2600.41	2.35	3089.65	57.31
7169	39.05	10.66	6202.37	1055.28	1721.8	2613.93	7.55	3130.05	56.63
7261	46.37	6.17	6269.95	1113.1	1783.48	2622.88	8.61	3171.79	55.79
7354	54.51	1.27	6329.15	1181.48	1854.94	2627.34	9.65	3216.16	54.78
7447	61.81	351.81	6378.26	1259.09	1933.59	2622.32	11.66	3258.12	53.6
7539	66.07	342.42	6418.74	1341.58	2013.99	2603.8	10.27	3291.79	52.28
7632	69.28	334.54	6454.11	1426.7	2093.9	2572.21	8.56	3316.73	50.85
7725	72.41	336.32	6484.62	1512.95	2173.79	2535.7	3.81	3339.93	49.39
7818	80.2	338.23	6506.63	1602.11	2257.07	2500.85	8.62	3368.77	47.93
7910	89.61	338.85	6514.79	1692.8	2342.26	2467.37	10.25	3402.07	46.49
8003	90.28	332.42	6514.88	1784.14	2426.93	2429.02	6.95	3433.68	45.02
8093	90.45	330.14	6514.31	1871.04	2505.86	2385.78	2.54	3459.95	43.59
8186	90.06	331.26	6513.9	1960.6	2586.96	2340.27	1.27	3488.44	42.13
8278	90.73	331.91	6513.27	2049.57	2667.87	2296.49	1.02	3520.14	40.72
8371	90.95	331.57	6511.91	2139.56	2749.78	2252.47	0.44	3554.56	39.32
8461	89.89	332.99	6511.25	2226.86	2829.45	2210.61	1.97	3590.62	38
8551	90	333.71	6511.33	2314.56	2909.89	2170.25	0.81	3630.07	36.72
8643	89.66	332.76	6511.6	2404.17	2992.03	2128.82	1.1	3672.07	35.43

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8736	89.72	333.14	6512.1	2494.65	3074.85	2086.53	0.41	3715.95	34.16
8829	90	333.73	6512.33	2585.3	3158.04	2044.94	0.71	3762.31	32.92
8921	89.66	332.99	6512.6	2674.95	3240.27	2003.69	0.88	3809.74	31.73
9010	89.38	333.03	6513.34	2761.55	3319.57	1963.3	0.32	3856.7	30.6
9103	90	332.88	6513.84	2852.03	3402.4	1921.01	0.68	3907.25	29.45
9192	90.06	333.54	6513.8	2938.71	3481.85	1880.9	0.74	3957.41	28.38
9285	90.06	333.6	6513.71	3029.41	3565.13	1839.5	0.06	4011.72	27.29
9378	90.5	334.2	6513.25	3120.23	3648.64	1798.59	0.81	4067.87	26.24
9470	90.62	333.33	6512.35	3210.02	3731.16	1757.93	0.96	4124.55	25.23
9563	90.39	333.81	6511.54	3300.72	3814.44	1716.53	0.57	4182.87	24.23
9653	90.39	334.68	6510.92	3388.72	3895.49	1677.42	0.96	4241.3	23.3
9745	90.34	334.64	6510.33	3478.82	3978.64	1638.05	0.07	4302.64	22.38
9838	90.39	334.03	6509.74	3569.78	4062.46	1597.77	0.67	4365.37	21.47
9931	90.56	334.05	6508.97	3660.65	4146.07	1557.06	0.18	4428.81	20.58
10023	90.5	333.88	6508.12	3750.51	4228.73	1516.68	0.2	4492.49	19.73
10116	90.5	333.8	6507.3	3841.31	4312.2	1475.68	0.08	4557.71	18.89
10209	90.67	333.79	6506.34	3932.09	4395.64	1434.62	0.18	4623.83	18.08
10298	90.67	333.75	6505.3	4018.95	4475.47	1395.28	0.05	4687.93	17.32
10391	91.01	333.56	6503.94	4109.67	4558.8	1354.01	0.41	4755.63	16.54
10484	90.73	335.08	6502.53	4200.62	4642.61	1313.72	1.66	4824.9	15.8
10576	90.62	334.83	6501.45	4290.81	4725.95	1274.77	0.3	4894.86	15.1
10669	90.95	334.36	6500.18	4381.86	4809.95	1234.88	0.62	4965.93	14.4
10762	90.84	334.08	6498.72	4472.78	4893.68	1194.43	0.33	5037.33	13.72
10853	90.95	333.84	6497.3	4561.65	4975.43	1154.48	0.29	5107.61	13.06
10946	90.84	330.68	6495.84	4651.84	5057.72	1111.2	3.39	5178.35	12.39
11039	90.95	333.95	6494.39	4742.05	5140.05	1068.01	3.51	5249.83	11.74
11131	90.84	333.49	6492.95	4831.82	5222.53	1027.28	0.51	5322.6	11.13
11221	91.06	334.28	6491.45	4919.69	5303.33	987.67	0.92	5394.52	10.55
11313	91.18	333.56	6489.65	5009.52	5385.95	947.23	0.8	5468.61	9.97
11406	91.01	334.42	6487.88	5100.36	5469.51	906.46	0.95	5544.12	9.41
11499	90.95	333.59	6486.29	5191.2	5553.09	865.71	0.9	5620.17	8.86
11592	90.5	331.39	6485.11	5281.49	5635.57	822.76	2.42	5695.31	8.31

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11684	90.73	333.23	6484.12	5370.74	5717.02	780.01	2.01	5769.99	7.77
11777	90.28	332.44	6483.3	5461.17	5799.76	737.56	0.98	5846.47	7.25
11870	90.45	333.61	6482.71	5551.67	5882.64	695.37	1.27	5923.6	6.74
11963	90.56	333.9	6481.89	5642.43	5966.05	654.25	0.33	6001.82	6.26
12052	90.45	333.72	6481.11	5729.31	6045.91	614.97	0.23	6077.11	5.81
12145	90.56	333.95	6480.29	5820.11	6129.38	573.97	0.27	6156.19	5.35
12238	90.62	333.53	6479.34	5910.87	6212.78	532.82	0.45	6235.58	4.9
12330	90.45	333.82	6478.48	6000.63	6295.23	492.03	0.36	6314.43	4.47
12423	90.56	334.23	6477.67	6091.49	6378.83	451.3	0.46	6394.78	4.05
12516	90.78	335.54	6476.57	6182.63	6463.03	411.83	1.43	6476.14	3.65
12608	90.45	333.15	6475.59	6272.61	6545.95	372	2.62	6556.52	3.25
12701	90.39	334.13	6474.9	6363.34	6629.28	330.71	1.06	6637.53	2.86
12794	90.56	334.1	6474.13	6454.23	6712.95	290.12	0.18	6719.22	2.47
12886	90.62	334.47	6473.19	6544.2	6795.84	250.21	0.41	6800.44	2.11
12979	90.5	334.19	6472.28	6635.16	6879.65	209.92	0.33	6882.86	1.75
13072	90.62	333.54	6471.37	6725.97	6963.14	168.96	0.7	6965.19	1.39
13164	90.67	333.72	6470.33	6815.71	7045.57	128.1	0.2	7046.73	1.04
13257	90.45	334.67	6469.42	6906.63	7129.29	87.62	1.05	7129.82	0.7
13350	90.45	334.09	6468.7	6997.61	7213.14	47.41	0.63	7213.29	0.38
13443	90.62	333.66	6467.83	7088.42	7296.63	6.46	0.49	7296.64	0.05
13535	90.39	334.04	6467.02	7178.24	7379.22	-34.08	0.48	7379.29	359.74
13628	90.22	333.84	6466.52	7269.07	7462.76	-74.93	0.28	7463.14	359.42
13721	90.39	333.46	6466.02	7359.8	7546.1	-116.21	0.45	7546.99	359.12
13813	90.5	334.07	6465.3	7449.6	7628.62	-156.88	0.67	7630.23	358.82
13906	90.39	333.97	6464.58	7540.45	7712.21	-197.62	0.16	7714.75	358.53
13999	90.28	334.37	6464.03	7631.36	7795.92	-238.14	0.45	7799.56	358.25
14092	90	334.35	6463.81	7722.34	7879.76	-278.39	0.3	7884.68	357.98
14184	89.83	333.9	6463.94	7812.26	7962.53	-318.54	0.53	7968.9	357.71
14277	90	333.98	6464.08	7903.09	8046.08	-359.4	0.2	8054.1	357.44
14370	90.56	333.57	6463.62	7993.87	8129.5	-400.5	0.75	8139.36	357.18
14462	90.62	333.87	6462.68	8083.64	8211.99	-441.23	0.33	8223.83	356.92
14555	90.45	333.01	6461.81	8174.29	8295.17	-482.82	0.94	8309.21	356.67

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14648	90.45	333.08	6461.09	8264.8	8378.06	-524.97	0.08	8394.5	356.41
14740	90.28	333.35	6460.5	8354.4	8460.19	-566.42	0.35	8479.13	356.17
14833	90.34	333.33	6460	8445.02	8543.31	-608.14	0.07	8564.92	355.93
14926	90.28	333.26	6459.5	8535.62	8626.38	-649.94	0.1	8650.83	355.69
15018	89.66	332.02	6459.55	8625.01	8708.09	-692.22	1.5	8735.56	355.46
15111	90.28	333.08	6459.59	8715.33	8790.62	-735.09	1.31	8821.3	355.22
15204	90.11	333.01	6459.27	8805.84	8873.52	-777.25	0.2	8907.49	354.99
15297	90.11	333.06	6459.09	8896.35	8956.4	-819.42	0.05	8993.81	354.77
15389	90.22	333.26	6458.82	8985.93	9038.49	-860.96	0.25	9079.4	354.56
15482	90.22	333.21	6458.46	9076.51	9121.53	-902.84	0.05	9166.1	354.35
15575	90.28	332.86	6458.05	9167.01	9204.41	-945.01	0.38	9252.8	354.14
15667	90.34	333.19	6457.55	9256.54	9286.4	-986.74	0.36	9338.68	353.93
15760	90.34	333.17	6457.01	9347.1	9369.4	-1028.7	0.02	9425.7	353.73
15853	90.28	333.13	6456.51	9437.65	9452.37	-1070.7	0.08	9512.82	353.54
15945	90.95	333.93	6455.52	9527.36	9534.72	-1111.7	1.14	9599.32	353.35
16038	89.89	332.99	6454.84	9618.02	9617.92	-1153.25	1.53	9686.82	353.16
16131	90.22	333.36	6454.75	9708.58	9700.91	-1195.22	0.54	9774.26	352.98
16223	90.34	332.52	6454.3	9798.08	9782.84	-1237.07	0.91	9860.74	352.79
16316	90.39	333.05	6453.71	9888.49	9865.54	-1279.6	0.57	9948.18	352.61
16409	90.06	332.47	6453.34	9978.89	9948.23	-1322.17	0.73	10035.7	352.43
16501	90.56	333.86	6452.85	10068.47	10030.32	-1363.7	1.61	10122.59	352.26
16594	90.5	333.46	6451.99	10159.2	10113.66	-1404.96	0.44	10210.78	352.09
16684	90.45	333.39	6451.24	10246.92	10194.15	-1445.22	0.1	10296.08	351.93
16775	90.39	333.27	6450.57	10335.59	10275.46	-1486.07	0.15	10382.36	351.77
16865	90.45	333.32	6449.91	10423.27	10355.86	-1526.52	0.09	10467.76	351.61
16956	90	332.37	6449.55	10511.76	10436.83	-1568.04	1.15	10553.96	351.46
17046	90.67	333.37	6449.03	10599.28	10516.92	-1609.08	1.33	10639.3	351.3
17137	90.84	333.14	6447.83	10687.91	10598.18	-1650.03	0.31	10725.86	351.15
17227	90.73	332.49	6446.59	10775.41	10678.23	-1691.15	0.74	10811.32	351
17320	90.67	332.85	6445.46	10865.78	10760.84	-1733.84	0.39	10899.63	350.85
17413	91.06	333.57	6444.05	10956.34	10843.85	-1775.75	0.88	10988.28	350.7
17506	91.06	333.76	6442.32	11047.06	10927.18	-1817	0.2	11077.22	350.56

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17598	90.78	333.22	6440.84	11136.75	11009.5	-1858.07	0.67	11165.19	350.42
17691	90.84	333.3	6439.52	11227.33	11092.54	-1899.91	0.11	11254.07	350.28
17782	91.18	333.68	6437.92	11316.03	11173.96	-1940.53	0.56	11341.21	350.15
17875	90.84	333.22	6436.28	11406.68	11257.14	-1982.09	0.61	11430.3	350.01
17967	91.01	333.6	6434.8	11496.34	11339.39	-2023.27	0.45	11518.48	349.88
18060	90.9	333.28	6433.25	11586.98	11422.57	-2064.84	0.36	11607.7	349.75
18153	90.84	333.26	6431.84	11677.57	11505.62	-2106.67	0.06	11696.89	349.62
18244	91.06	333.57	6430.33	11766.25	11586.99	-2147.38	0.42	11784.29	349.5
18337	91.06	333.45	6428.6	11856.92	11670.21	-2188.85	0.13	11873.71	349.38
18428	90.95	333.26	6427	11945.59	11751.54	-2229.65	0.24	11961.19	349.26
18521	90.78	333.84	6425.59	12036.27	11834.79	-2271.07	0.64	12050.73	349.14
18614	90.95	333.34	6424.18	12126.97	11918.08	-2312.43	0.56	12140.34	349.02
18707	91.06	333.75	6422.54	12217.65	12001.33	-2353.85	0.46	12229.98	348.9
18799	91.01	333.57	6420.88	12307.4	12083.76	-2394.66	0.21	12318.76	348.79
18892	90.95	333.12	6419.29	12398	12166.87	-2436.38	0.48	12408.41	348.68
18983	91.01	333.61	6417.73	12486.67	12248.2	-2477.17	0.54	12496.19	348.57
19075	90.78	334.07	6416.3	12576.48	12330.76	-2517.73	0.55	12585.18	348.46
19166	90.78	333.18	6415.05	12665.24	12412.28	-2558.15	0.97	12673.16	348.35
19259	91.12	333.14	6413.5	12755.79	12495.25	-2600.13	0.36	12762.91	348.25
19351	90.95	333.91	6411.84	12845.48	12577.59	-2641.14	0.86	12851.9	348.14
19444	90.9	334.1	6410.34	12936.33	12661.17	-2681.9	0.21	12942.09	348.04
19537	91.01	333.44	6408.79	13027.09	12744.58	-2723	0.72	13032.23	347.94
19628	91.01	333.85	6407.19	13115.85	12826.11	-2763.39	0.45	13120.42	347.84
19721	90.95	333.3	6405.6	13206.54	12909.38	-2804.77	0.6	13210.56	347.74
19813	90.73	333.24	6404.25	13296.15	12991.53	-2846.15	0.25	13299.65	347.64
19906	90.95	333.61	6402.89	13386.79	13074.7	-2887.76	0.47	13389.81	347.55
19999	90.9	334.05	6401.39	13477.58	13158.16	-2928.77	0.48	13480.16	347.45
20091	91.01	334.02	6399.86	13567.46	13240.86	-2969.04	0.13	13569.65	347.36
20184	90.9	333.69	6398.32	13658.25	13324.33	-3010.02	0.37	13660.09	347.27
20276	90.84	334.03	6396.92	13748.06	13406.91	-3050.55	0.37	13749.58	347.18
20369	91.06	333.86	6395.38	13838.89	13490.44	-3091.39	0.3	13840.12	347.09
20460	90.5	333.42	6394.13	13927.66	13571.97	-3131.79	0.79	13928.63	347.01

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20553	90.5	331.31	6393.31	14017.9	13654.35	-3174.93	2.27	14018.61	346.91
20646	90.39	333.92	6392.58	14108.23	13736.92	-3217.7	2.82	14108.74	346.82
20738	90.45	331.38	6391.91	14197.62	13818.63	-3259.96	2.76	14197.95	346.73
20831	90.39	334.24	6391.23	14288.03	13901.34	-3302.45	3.07	14288.23	346.64
20923	90.39	333.54	6390.6	14377.86	13983.95	-3342.95	0.76	14377.97	346.56
21016	90.34	332.2	6390.01	14468.3	14066.71	-3385.36	1.44	14468.35	346.47
21109	90.34	333.45	6389.46	14558.73	14149.44	-3427.83	1.34	14558.73	346.38
21201	90.39	331.77	6388.88	14648.1	14231.12	-3470.15	1.82	14648.1	346.3
21231	90.39	331.77	6388.67	14677.13	14257.56	-3484.34	0.01	14677.14	346.27

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