

SYSDRILL
Closest Approach + Clearance Factor Report
Wellbore: GP-Dairy #1-20-19 (PWB)
Wellpath: GP-Dairy #1-19-19 (PWP#1)

Ellipse separations are reported ONLY if BOTH wells have uncertainty data
Only Depth and Magnetic Reference Field error terms are correlated across tie points
Proximities beyond 1500.00ft with expansion rate of 0.00ft/1000ft are not reported
Scan limit is calculated on CENTRE to CENTRE distance

Summary data uses Closest Approach clearance calculation for all minima
Hole size/Casings ARE included
Hole size/Casings are NOT subtracted from Centre-Centre distance
Confidence limit of 95.00% / 2.80 SD.

Wellbore

Name	Created	Last Revised
GP-Dairy #1-20-19 (PWB)	6-Aug-2014	6-Aug-2014

Well

Name	Government ID	Last Revised
GP-Dairy #1-20-19		11-Aug-2014

Slot

Name	Grid Northing	Grid Easting	Latitude	Longitude	North	East
Slot #52	1385986.7100	3227710.8120	40.39005392	-104.68250568	508.45S	375.75W

Installation

Name	Easting	Northing	Coord System Name	North Alignment
Greeley Project	3228086.5450	1386495.1419	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Field

Name	Easting	Northing	Coord System Name	North Alignment
Wattenberg	3211772.6087	1400656.3763	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Clearance Summary

Offset WellName	Offset Wellbore	Offset Slot	Offset Structure	Separation [ft]	MD[ft]	Diverging From[ft]	Ellipse Separation [ft]	Ellipse MD[ft]	Clearance Factor	Clearance MD[ft]
Commerce Center 2 #20-7H5	Commerce Center 2 #20-7H5 (AWB)	Commerce Center 2 #20-7H5	MRI Offsets	122.09	4636.72	4636.72	97.74	4642.39	4.99	4658.79

Reference Wellbore Survey Tool Program

Survey Name	MD[ft]	Survey Tool	Error Model
Planned	15144.14	WdW Rate Gyro	Standard

Clearance Data

Reference MD[ft]	Reference TVD[ft]	Offset Well	Offset MD[ft]	Offset TVD[ft]	Offset North[ft]	Offset East[ft]	Closest Approach Distance [ft]	Clearance Factor
2300.00	2233.37	Commerce Center 2 #20-7H5	2527.82	2545.40	1552.29S	901.84W	1451.41	256.75
2400.00	2321.80	Commerce Center 2 #20-7H5	2644.57	2658.76	1534.02S	880.74W	1386.30	234.57
2500.00	2410.23	Commerce Center 2 #20-7H5	2737.03	2747.99	1517.50S	863.02W	1319.24	214.08
2600.00	2498.65	Commerce Center 2 #20-7H5	2813.23	2821.51	1503.47S	848.68W	1252.06	195.54
2700.00	2587.08	Commerce Center 2 #20-7H5	2895.05	2900.36	1487.82S	833.48W	1184.54	177.74
2800.00	2675.51	Commerce Center 2 #20-7H5	2968.49	2971.09	1473.47S	819.91W	1116.81	161.36
2900.00	2763.94	Commerce Center 2 #20-7H5	3043.20	3043.05	1458.69S	806.30W	1049.06	145.91
3000.00	2852.37	Commerce Center 2 #20-7H5	3111.15	3108.55	1445.11S	794.39W	981.50	131.78
3100.00	2940.79	Commerce Center 2 #20-7H5	3173.00	3168.38	1433.09S	784.30W	914.82	118.82
3200.00	3029.22	Commerce Center 2 #20-7H5	3237.57	3231.03	1421.09S	774.28W	849.09	106.65
3300.00	3117.65	Commerce Center 2 #20-7H5	3306.28	3297.82	1408.86S	763.77W	784.05	95.19
3400.00	3206.08	Commerce Center 2 #20-7H5	3367.00	3357.03	1398.65S	755.03W	720.14	84.61
3500.00	3294.50	Commerce Center 2 #20-7H5	3431.67	3420.33	1388.76S	746.26W	657.74	74.73

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Coordinates are from Slot MD's are from Rig and TVD's are from Rig (Planned Datum #1 4672.4ft above Mean Sea Level)
Vertical Section is from 0.00N 0.00E on azimuth 253.110 degrees
Prepared by Integrated Petroleum Technologies, Inc.
Date Printed: 29-Sep-2014

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Clearance Data

Reference MD[ft]	Reference TVD[ft]	Offset Well	Offset MD[ft]	Offset TVD[ft]	Offset North[ft]	Offset East[ft]	Closest Approach Distance [ft]	Clearance Factor
3600.00	3382.93	Commerce Center 2 #20-7H5	3503.48	3490.89	1379.03S	737.09W	596.93	65.51
3700.00	3471.36	Commerce Center 2 #20-7H5	3571.71	3558.12	1370.27S	729.45W	537.53	56.89
3800.00	3559.79	Commerce Center 2 #20-7H5	3648.37	3633.82	1361.26S	721.37W	479.46	48.80
3900.00	3648.22	Commerce Center 2 #20-7H5	3732.44	3716.83	1351.83S	712.06W	421.83	41.10
4000.00	3736.64	Commerce Center 2 #20-7H5	3809.21	3792.62	1343.01S	703.53W	364.55	33.71
4100.00	3825.07	Commerce Center 2 #20-7H5	3884.96	3867.59	1334.73S	696.51W	309.54	26.76
4200.00	3913.50	Commerce Center 2 #20-7H5	3962.70	3944.63	1326.91S	689.74W	256.87	20.29
4300.00	4001.93	Commerce Center 2 #20-7H5	4038.00	4019.52	1321.18S	684.46W	209.08	14.59
4400.00	4090.35	Commerce Center 2 #20-7H5	4115.46	4096.82	1317.73S	680.94W	168.84	10.03
4500.00	4178.78	Commerce Center 2 #20-7H5	4198.94	4180.26	1316.10S	679.07W	138.89	6.87
4600.00	4267.21	Commerce Center 2 #20-7H5	4285.20	4266.51	1315.18S	678.68W	123.31	5.24
4606.72	4273.15	Commerce Center 2 #20-7H5	4283.50	4264.81	1315.20S	678.67W	123.14	5.20
4636.72	4299.69	Commerce Center 2 #20-7H5	4317.56	4298.86	1314.90S	678.80W	122.09	5.03
4642.39	4304.69	Commerce Center 2 #20-7H5	4322.55	4303.85	1314.85S	678.82W	122.11	5.01
4658.79	4319.20	Commerce Center 2 #20-7H5	4336.81	4318.11	1314.74S	678.89W	122.54	4.99
4700.00	4355.64	Commerce Center 2 #20-7H5	4373.16	4354.47	1314.48S	679.12W	125.75	5.09
4800.00	4444.07	Commerce Center 2 #20-7H5	4461.44	4442.74	1313.89S	679.72W	144.47	6.14
4900.00	4532.49	Commerce Center 2 #20-7H5	4550.17	4531.47	1313.43S	680.37W	174.11	8.07
5000.00	4620.92	Commerce Center 2 #20-7H5	4639.71	4621.00	1313.22S	680.91W	209.86	10.57
5100.00	4709.35	Commerce Center 2 #20-7H5	4730.45	4711.74	1313.68S	680.81W	248.52	13.44
5200.00	4797.78	Commerce Center 2 #20-7H5	4819.99	4801.27	1314.58S	679.81W	288.94	16.54
5300.00	4886.21	Commerce Center 2 #20-7H5	4908.73	4889.99	1315.59S	678.23W	330.81	19.79
5400.00	4974.63	Commerce Center 2 #20-7H5	4997.29	4978.53	1316.63S	676.52W	373.71	23.10
5500.00	5063.06	Commerce Center 2 #20-7H5	5085.86	5067.08	1317.68S	674.80W	417.37	26.43
5600.00	5151.49	Commerce Center 2 #20-7H5	5168.34	5149.54	1318.27S	673.02W	462.02	29.72
5700.00	5239.92	Commerce Center 2 #20-7H5	5251.55	5232.71	1317.94S	670.78W	508.11	33.04
5800.00	5328.34	Commerce Center 2 #20-7H5	5333.81	5314.92	1316.75S	668.13W	555.51	36.39
5900.00	5416.77	Commerce Center 2 #20-7H5	5412.17	5393.20	1314.78S	665.21W	604.16	39.77
6000.00	5505.20	Commerce Center 2 #20-7H5	5489.28	5470.18	1311.93S	661.88W	654.13	43.17
6100.00	5593.63	Commerce Center 2 #20-7H5	5568.11	5548.84	1308.21S	658.09W	705.24	46.55
6200.00	5682.06	Commerce Center 2 #20-7H5	5645.93	5626.42	1303.74S	653.96W	757.43	49.93
6300.00	5770.48	Commerce Center 2 #20-7H5	5738.98	5719.17	1298.27S	649.03W	809.87	53.07
6400.00	5858.91	Commerce Center 2 #20-7H5	5841.70	5821.71	1294.00S	644.74W	860.68	55.87
6500.00	5947.34	Commerce Center 2 #20-7H5	5955.91	5935.84	1291.77S	641.55W	909.39	58.23
6600.00	6035.77	Commerce Center 2 #20-7H5	6049.49	6029.41	1291.42S	639.99W	956.57	60.75
6700.00	6124.20	Commerce Center 2 #20-7H5	6139.49	6119.41	1291.23S	638.69W	1003.60	63.26
6800.00	6212.62	Commerce Center 2 #20-7H5	6227.65	6207.56	1291.10S	637.69W	1050.53	65.72
6900.00	6301.05	Commerce Center	6317.98	6297.89	1291.02S	636.91W	1097.35	68.08

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Reference MD[ft]	Reference TVD[ft]	Offset Well	Offset MD[ft]	Offset TVD[ft]	Offset North[ft]	Offset East[ft]	Closest Approach Distance [ft]	Clearance Factor
7000.00	6389.48	2 #20-7H5 Commerce Center	6408.54	6388.44	1290.98S	636.31W	1144.11	70.37
7026.46	6412.88	2 #20-7H5 Commerce Center	6431.92	6411.83	1290.98S	636.22W	1156.45	70.96
7100.00	6477.29	2 #20-7H5 Commerce Center	6496.28	6476.18	1290.99S	635.99W	1191.46	72.76
7200.00	6562.25	2 #20-7H5 Commerce Center	6581.03	6560.93	1290.94S	635.89W	1241.17	75.70
7300.00	6643.04	2 #20-7H5 Commerce Center	6658.97	6638.87	1290.82S	635.92W	1293.09	79.10
7400.00	6718.44	2 #20-7H5 Commerce Center	6734.37	6714.27	1290.47S	636.16W	1347.18	82.77
7500.00	6787.33	2 #20-7H5 Commerce Center	6800.65	6780.55	1290.08S	636.45W	1403.30	86.71
7600.00	6848.68	2 #20-7H5 Commerce Center	6862.23	6842.12	1289.58S	636.84W	1461.41	90.75

Offset Wellbore Survey Tool Programs

Well	Wellbore	Survey Name	MD[ft]	Survey Tool	Error Model
Commerce Center 2 #20-7H5	Commerce Center 2 #20-7H5 (AWB)	Actual	7265.00	ISCWSA MWD	Rev 0