



Occidental Petroleum

Weld County, CO (UTM-NAD83)

Prowant 4-18HZ

Prowant 18-5HZ

OH

Design: OH

Standard Survey Report

03 March, 2020





Total Directional Services

Survey Report



Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well Prowant 18-5HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	4939' GE + 8' KB @ 4947.00usft
Site:	Prowant 4-18HZ	MD Reference:	4939' GE + 8' KB @ 4947.00usft
Well:	Prowant 18-5HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.15 Single User Db

Project	Weld County, CO (UTM-NAD83)		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site	Prowant 4-18HZ				
Site Position:		Northing:	14,674,247.77 usft	Latitude:	40.405074
From:	Map	Easting:	1,656,579.10 usft	Longitude:	-104.941943
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.04 °

Well	Prowant 18-5HZ					
Well Position	+N/-S	0.00 usft	Northing:	14,674,223.70 usft	Latitude:	40.405008
	+E/-W	0.00 usft	Easting:	1,656,524.27 usft	Longitude:	-104.942140
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,939.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	2/20/2020	8.08	66.68	52,075.84569972

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	270.03	

Survey Program	Date	3/3/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
118.00	1,790.00	Survey #1 - Surface MWD+IFR (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,858.00	1,858.00	Survey #2 - Surface Proj to TD (OH)	BLIND	OWSG BLIND	

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (Prowant 18-5HZ)									
118.00	0.20	319.64	118.00	0.16	-0.13	0.13	0.17	0.17	0.00
213.00	0.38	253.31	213.00	0.19	-0.54	0.54	0.37	0.19	-69.82
308.00	0.95	274.02	307.99	0.16	-1.63	1.63	0.64	0.60	21.80
403.00	2.38	253.67	402.95	-0.34	-4.31	4.31	1.61	1.51	-21.42
498.00	3.31	259.73	497.83	-1.39	-8.90	8.90	1.03	0.98	6.38
593.00	3.41	265.79	592.67	-2.08	-14.42	14.42	0.39	0.11	6.38
688.00	5.41	273.40	687.38	-2.02	-21.71	21.70	2.19	2.11	8.01
784.00	7.66	272.12	782.75	-1.52	-32.62	32.62	2.35	2.34	-1.33



Total Directional Services

Survey Report



Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well Prowant 18-5HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	4939' GE + 8' KB @ 4947.00usft
Site:	Prowant 4-18HZ	MD Reference:	4939' GE + 8' KB @ 4947.00usft
Well:	Prowant 18-5HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.15 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
879.00	9.00	269.48	876.75	-1.35	-46.38	46.38	1.47	1.41	-2.78
974.00	8.00	274.03	970.71	-0.95	-60.40	60.40	1.27	-1.05	4.79
1,069.00	7.09	274.67	1,064.88	-0.01	-72.84	72.84	0.96	-0.96	0.67
1,164.00	5.52	269.48	1,159.31	0.42	-83.25	83.25	1.76	-1.65	-5.46
1,259.00	4.09	267.72	1,253.97	0.25	-91.21	91.21	1.51	-1.51	-1.85
1,354.00	2.31	301.61	1,348.83	1.12	-96.22	96.22	2.66	-1.87	35.67
1,449.00	1.41	358.71	1,443.78	3.29	-97.88	97.88	2.05	-0.95	60.11
1,543.00	0.51	50.62	1,537.77	4.71	-97.58	97.59	1.24	-0.96	55.22
1,638.00	1.89	215.49	1,632.75	3.70	-98.17	98.17	2.51	1.45	173.55
1,733.00	1.45	198.58	1,727.71	1.29	-99.46	99.46	0.69	-0.46	-17.80
1,790.00	0.98	137.46	1,784.70	0.24	-99.36	99.36	2.28	-0.82	-107.23
1,858.00	0.98	137.46	1,852.69	-0.61	-98.57	98.57	0.00	0.00	0.00
Heel (Prowant 18-5HZ) - PBHL (Prowant 18-5HZ)									

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------