

# Occidental Petroleum

Project: Weld County, CO (UTM-NAD83)  
 Site: 4N-68W-13 SBJ 22-13HZ PAD  
 Well: SBJ 13-5HZ  
 Wellbore: Plan C  
 Design: Surveys

PROJECT DETAILS: Weld County, CO (UTM-NAD83)  
 Geodetic System: Universal Transverse Mercator (US Survey Feet)  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: Zone 13N (108 W to 102 W)

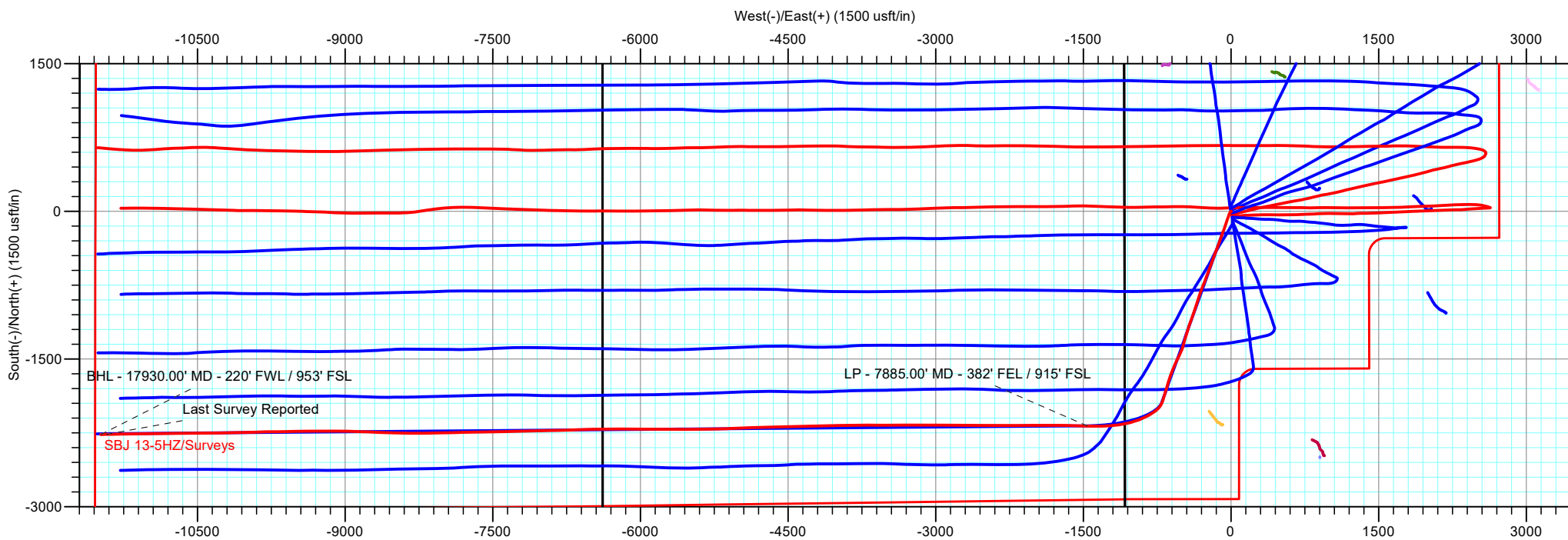


**ACTUAL LINE CALLS**  
**SHL: 2203' FNL, 1076' FWL**  
**LP: 915' FSL, 382' FEL**  
**TOE: 953' FSL, 220' FWL**

**SHL: Sec 13-T4N-R68W**  
**Heel: Sec 14-T4N-R68W**  
**BHL: Sec 15-T4N-R68W**

### ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
7885.00	93.76	270.67	6974.76	-2179.15	-1459.35	1476.79	2904.20	LP - 7885.00' MD - 382' FEL / 915' FSL
17870.00	94.27	269.30	6407.26	-2264.80	-11423.89	11441.70	12870.82	Last Survey Reported
17930.00	94.27	269.30	6402.80	-2265.53	-11483.72	11501.54	12930.66	BHL - 17930.00' MD - 220' FWL / 953' FSL



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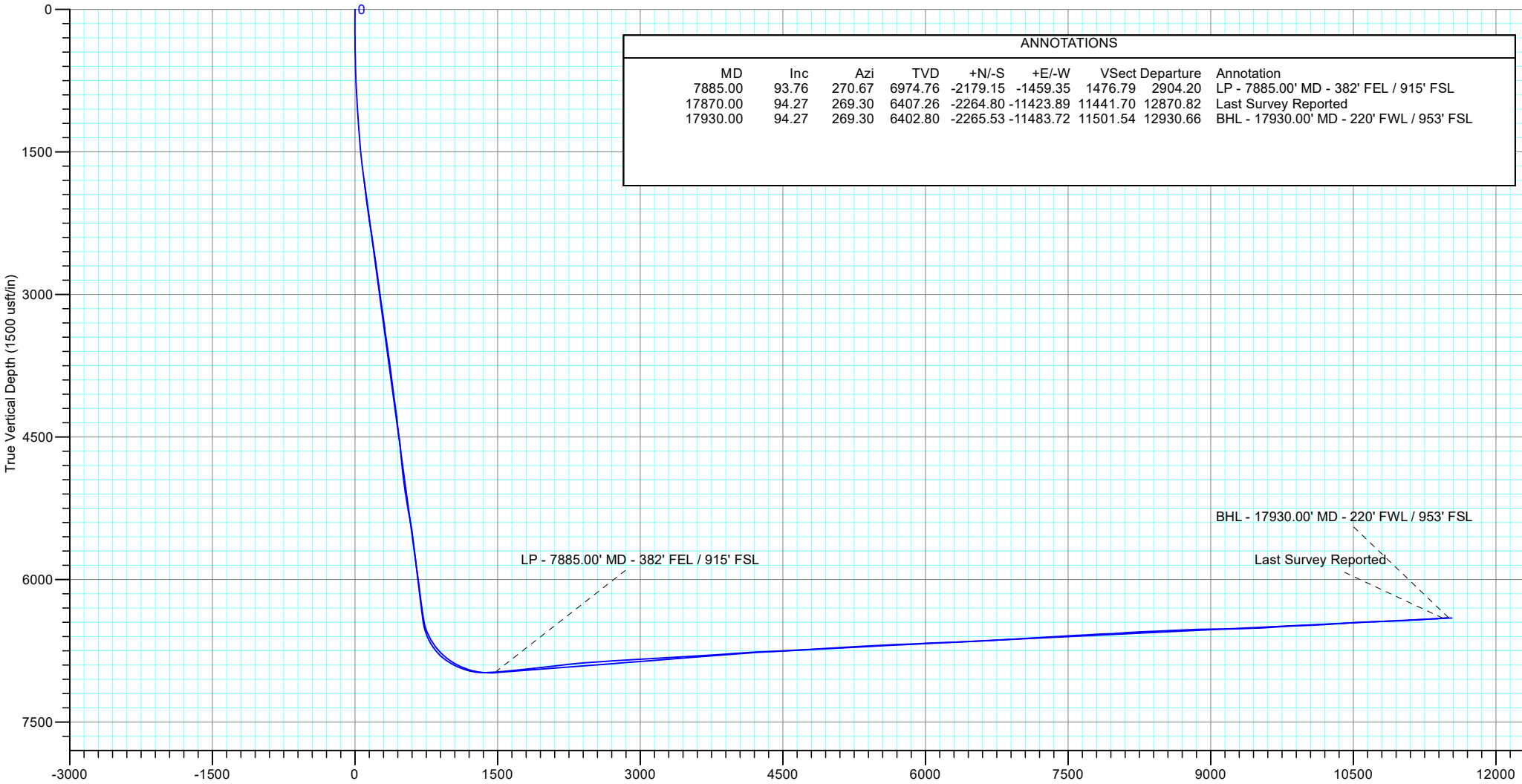
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**Weld County, CO (UTM-NAD83)**

**4N-68W-13 SBJ 22-13HZ PAD**

**SBJ 13-5HZ**

**Plan C**

**Design: Surveys**

## **Standard Survey Report**

**24 January, 2022**

## Survey Report

<b>Company:</b> Occidental Petroleum	<b>Local Co-ordinate Reference:</b> Well SBJ 13-5HZ
<b>Project:</b> Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b> RKB = 20' @ 4879.00usft (PD 461)
<b>Site:</b> 4N-68W-13 SBJ 22-13HZ PAD	<b>MD Reference:</b> RKB = 20' @ 4879.00usft (PD 461)
<b>Well:</b> SBJ 13-5HZ	<b>North Reference:</b> True
<b>Wellbore:</b> Plan C	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> Surveys	<b>Database:</b> EDM 5000.1 Single User Db

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

<b>Site</b> 4N-68W-13 SBJ 22-13HZ PAD		
<b>Site Position:</b>	<b>Northing:</b> 14,641,145.55 usft	<b>Latitude:</b> 40.314181
<b>From:</b> Lat/Long	<b>Easting:</b> 1,652,517.50 usft	<b>Longitude:</b> -104.956591
<b>Position Uncertainty:</b> 0.00 usft	<b>Slot Radius:</b> 13.200 in	

<b>Well</b> SBJ 13-5HZ			
<b>Well Position</b> +N/-S	0.00 usft	<b>Northing:</b> 14,641,445.94 usft	<b>Latitude:</b> 40.315006
+E/-W	0.00 usft	<b>Easting:</b> 1,652,441.81 usft	<b>Longitude:</b> -104.956862
<b>Position Uncertainty</b>	3.28 usft	<b>Wellhead Elevation:</b> usft	<b>Ground Level:</b> 4,859.00 usft
<b>Grid Convergence:</b>	0.03 °		

<b>Wellbore</b> Plan C					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IFR	10/6/2021	7.86	66.48	51,858.90000000

<b>Design</b> Surveys					
<b>Audit Notes:</b>					
<b>Version:</b> 1.0	<b>Phase:</b> ACTUAL	<b>Tie On Depth:</b> 0.00			
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	269.54	

<b>Survey Program</b>		<b>Date</b> 1/24/2022		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
115.00	1,831.00	Survey #1 (Plan C)	APC_ISCWSA REV 2 MM Fixed:v2:crustal field declination	
1,922.00	17,930.00	Survey #2 (Plan C)	APC_ISCWSA REV 2 MM Fixed:v2:Rockies, crustal dec + 3-axis correction	

<b>Survey</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>SBJ 13-5HZ_SHL</b>										
115.00	0.63	99.20	115.00	-0.10	0.63	-0.63	0.55	0.55	0.00	
215.00	0.99	331.69	214.99	0.57	0.76	-0.77	1.47	0.36	-127.51	
315.00	0.74	236.93	314.99	0.98	-0.19	0.18	1.29	-0.25	-94.76	
415.00	1.69	208.08	414.96	-0.67	-1.42	1.43	1.10	0.95	-28.85	
515.00	1.88	217.89	514.91	-3.27	-3.12	3.15	0.36	0.19	9.81	
615.00	2.47	217.12	614.84	-6.28	-5.43	5.48	0.59	0.59	-0.77	
715.00	3.91	216.11	714.68	-10.75	-8.74	8.83	1.45	1.44	-1.01	

## Survey Report

<b>Company:</b>	Occidental Petroleum	<b>Local Co-ordinate Reference:</b>	Well SBJ 13-5HZ
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<b>Site:</b>	4N-68W-13 SBJ 22-13HZ PAD	<b>MD Reference:</b>	RKB = 20' @ 4879.00usft (PD 461)
<b>Well:</b>	SBJ 13-5HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
815.00	5.40	209.82	814.35	-17.59	-13.09	13.23	1.57	1.49	-6.29	
915.00	7.75	201.96	913.69	-27.93	-17.96	18.18	2.51	2.35	-7.86	
1,015.00	10.28	199.33	1,012.45	-42.61	-23.43	23.77	2.56	2.52	-2.63	
1,115.00	11.75	198.34	1,110.60	-60.69	-29.59	30.07	1.49	1.47	-0.99	
1,215.00	12.96	198.81	1,208.28	-80.97	-36.41	37.06	1.22	1.21	0.47	
1,315.00	13.74	198.30	1,305.58	-102.86	-43.75	44.58	0.79	0.78	-0.50	
1,415.00	13.73	197.40	1,402.72	-125.46	-51.03	52.03	0.22	-0.01	-0.91	
1,515.00	15.15	198.89	1,499.56	-149.15	-58.81	60.00	1.47	1.42	1.49	
1,615.00	17.77	199.60	1,595.45	-175.89	-68.16	69.57	2.63	2.62	0.71	
1,715.00	20.00	201.33	1,690.06	-206.21	-79.50	81.15	2.30	2.23	1.72	
1,815.00	21.11	200.04	1,783.70	-239.06	-91.89	93.81	1.20	1.11	-1.29	
1,831.00	21.07	200.00	1,798.62	-244.47	-93.86	95.82	0.27	-0.26	-0.22	
1,922.00	18.84	198.50	1,884.15	-273.78	-104.12	106.32	2.51	-2.45	-1.65	
2,015.00	19.34	200.78	1,972.04	-302.42	-114.35	116.77	0.97	0.54	2.45	
2,108.00	21.07	200.31	2,059.32	-332.49	-125.62	128.28	1.87	1.86	-0.51	
2,200.00	21.98	199.72	2,144.90	-364.21	-137.17	140.09	1.02	0.99	-0.64	
2,292.00	23.62	201.34	2,229.71	-397.59	-149.68	152.87	1.91	1.78	1.76	
2,384.00	23.39	201.12	2,314.07	-431.79	-162.97	166.43	0.27	-0.25	-0.24	
2,477.00	23.24	200.59	2,399.48	-466.19	-176.07	179.81	0.28	-0.16	-0.57	
2,569.00	21.77	200.37	2,484.47	-499.17	-188.40	192.40	1.60	-1.60	-0.24	
2,662.00	21.92	199.62	2,570.79	-531.69	-200.23	204.49	0.34	0.16	-0.81	
2,754.00	22.91	200.35	2,655.84	-564.66	-212.22	216.75	1.12	1.08	0.79	
2,846.00	21.04	199.41	2,741.15	-597.03	-223.94	228.73	2.07	-2.03	-1.02	
2,939.00	20.53	199.91	2,828.10	-628.11	-235.04	240.08	0.58	-0.55	0.54	
3,031.00	20.64	200.33	2,914.23	-658.48	-246.17	251.45	0.20	0.12	0.46	
3,123.00	21.25	200.86	3,000.15	-689.26	-257.74	263.26	0.69	0.66	0.58	
3,310.00	20.18	203.84	3,175.06	-750.44	-282.84	288.86	0.80	-0.57	1.59	
3,403.00	19.14	201.98	3,262.64	-779.25	-295.03	301.28	1.30	-1.12	-2.00	
3,496.00	20.07	198.36	3,350.25	-808.53	-305.77	312.25	1.64	1.00	-3.89	
3,590.00	23.15	197.21	3,437.63	-841.50	-316.32	323.06	3.31	3.28	-1.22	
3,682.00	25.13	199.22	3,521.58	-877.22	-328.10	335.13	2.33	2.15	2.18	
3,775.00	25.17	198.22	3,605.77	-914.65	-340.78	348.12	0.46	0.04	-1.08	
3,868.00	24.30	197.66	3,690.24	-951.67	-352.77	360.40	0.97	-0.94	-0.60	
3,961.00	21.40	197.28	3,775.93	-986.12	-363.62	371.53	3.12	-3.12	-0.41	
4,146.00	20.49	199.51	3,948.71	-1,048.87	-384.46	392.87	0.65	-0.49	1.21	
4,238.00	19.74	201.14	4,035.09	-1,078.54	-395.44	404.09	1.02	-0.82	1.77	
4,330.00	21.35	200.10	4,121.24	-1,108.76	-406.80	415.69	1.79	1.75	-1.13	
4,423.00	21.07	200.11	4,207.94	-1,140.35	-418.37	427.51	0.30	-0.30	0.01	
4,516.00	20.64	196.58	4,294.85	-1,171.76	-428.79	438.19	1.43	-0.46	-3.80	
4,609.00	20.98	196.82	4,381.78	-1,203.41	-438.29	447.93	0.38	0.37	0.26	
4,702.00	22.74	197.13	4,468.09	-1,236.52	-448.40	458.31	1.90	1.89	0.33	
4,795.00	23.31	197.94	4,553.68	-1,271.21	-459.36	469.55	0.70	0.61	0.87	
4,912.00	19.50	197.21	4,662.59	-1,311.90	-472.27	482.79	3.26	-3.26	-0.62	

## Survey Report

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<b>Project:</b>	Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b>	RKB = 20' @ 4879.00usft (PD 461)
<b>Site:</b>	4N-68W-13 SBJ 22-13HZ PAD	<b>MD Reference:</b>	RKB = 20' @ 4879.00usft (PD 461)
<b>Well:</b>	SBJ 13-5HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
5,006.00	17.31	191.18	4,751.79	-1,340.61	-479.63	490.38	3.08	-2.33	-6.41	
5,099.00	18.39	195.65	4,840.31	-1,368.31	-486.27	497.24	1.88	1.16	4.81	
5,192.00	19.32	202.83	4,928.33	-1,396.62	-496.20	507.39	2.69	1.00	7.72	
5,285.00	19.18	201.87	5,016.14	-1,424.98	-507.86	519.28	0.37	-0.15	-1.03	
5,378.00	20.70	202.73	5,103.56	-1,454.32	-519.90	531.56	1.66	1.63	0.92	
5,473.00	20.54	207.97	5,192.48	-1,484.52	-534.21	546.11	1.95	-0.17	5.52	
5,566.00	22.55	206.87	5,278.98	-1,514.84	-549.92	562.06	2.20	2.16	-1.18	
5,660.00	22.22	205.59	5,365.89	-1,546.95	-565.74	578.14	0.63	-0.35	-1.36	
5,753.00	21.61	204.15	5,452.17	-1,578.44	-580.34	593.00	0.87	-0.66	-1.55	
5,845.00	19.64	198.00	5,538.28	-1,608.61	-592.06	604.95	3.18	-2.14	-6.68	
5,939.00	20.03	201.68	5,626.71	-1,638.59	-602.88	616.02	1.39	0.41	3.91	
6,031.00	20.09	200.72	5,713.13	-1,668.01	-614.29	627.67	0.36	0.07	-1.04	
6,123.00	19.93	199.39	5,799.58	-1,697.58	-625.09	638.70	0.52	-0.17	-1.45	
6,215.00	20.29	195.81	5,885.97	-1,727.72	-634.64	648.49	1.39	0.39	-3.89	
6,308.00	21.62	194.64	5,972.82	-1,759.82	-643.37	657.47	1.50	1.43	-1.26	
6,400.00	23.48	198.42	6,057.78	-1,793.61	-653.44	667.82	2.56	2.02	4.11	
6,493.00	23.21	197.46	6,143.17	-1,828.67	-664.80	679.46	0.50	-0.29	-1.03	
6,585.00	22.96	194.16	6,227.81	-1,863.36	-674.63	689.56	1.43	-0.27	-3.59	
6,677.00	22.53	198.29	6,312.66	-1,897.50	-684.55	699.76	1.80	-0.47	4.49	
6,769.00	19.62	198.95	6,398.50	-1,928.85	-695.10	710.56	3.17	-3.16	0.72	
6,863.00	23.59	207.61	6,485.90	-1,960.46	-708.95	724.66	5.41	4.22	9.21	
6,956.00	28.19	220.78	6,569.61	-1,993.63	-731.95	747.93	7.89	4.95	14.16	
7,049.00	33.47	232.66	6,649.51	-2,025.87	-766.74	782.98	8.64	5.68	12.77	
7,143.00	40.49	239.09	6,724.59	-2,057.32	-813.61	830.10	8.52	7.47	6.84	
7,235.00	48.12	243.46	6,790.39	-2,088.02	-869.98	886.71	8.93	8.29	4.75	
7,328.00	56.09	249.85	6,847.51	-2,116.85	-937.33	954.29	10.13	8.57	6.87	
7,421.00	62.36	254.41	6,895.09	-2,141.25	-1,013.34	1,030.50	7.95	6.74	4.90	
7,515.00	69.01	259.95	6,933.79	-2,160.13	-1,096.80	1,114.11	8.88	7.07	5.89	
7,607.00	76.00	263.58	6,961.44	-2,172.63	-1,183.58	1,200.98	8.48	7.60	3.95	
7,700.00	83.21	267.97	6,978.22	-2,179.33	-1,274.72	1,292.18	9.03	7.75	4.72	
7,792.00	93.63	270.78	6,980.75	-2,180.32	-1,366.55	1,384.01	11.73	11.33	3.05	
7,885.00	93.76	270.67	6,974.76	-2,179.15	-1,459.35	1,476.79	0.18	0.14	-0.12	
7,888.05	93.82	270.70	6,974.56	-2,179.11	-1,462.38	1,479.83	2.13	1.87	1.02	
<b>SBJ 13-5HZ LP</b>										
7,978.00	95.50	271.62	6,967.25	-2,177.30	-1,552.02	1,569.45	2.13	1.87	1.02	
8,071.00	95.74	271.12	6,958.14	-2,175.08	-1,644.54	1,661.95	0.59	0.26	-0.54	
8,163.00	96.11	270.97	6,948.65	-2,173.42	-1,736.04	1,753.43	0.43	0.40	-0.16	
8,256.00	95.96	270.52	6,938.87	-2,172.21	-1,828.51	1,845.90	0.51	-0.16	-0.48	
8,349.00	96.45	269.53	6,928.82	-2,172.17	-1,920.97	1,938.35	1.18	0.53	-1.06	
8,441.00	96.33	269.46	6,918.58	-2,172.98	-2,012.39	2,029.77	0.15	-0.13	-0.08	
8,531.00	96.37	269.64	6,908.62	-2,173.68	-2,101.84	2,119.22	0.20	0.04	0.20	
8,625.00	96.96	270.03	6,897.71	-2,173.95	-2,195.20	2,212.58	0.75	0.63	0.41	
8,719.00	95.58	269.68	6,887.45	-2,174.19	-2,288.64	2,306.02	1.51	-1.47	-0.37	
8,811.00	95.37	269.81	6,878.67	-2,174.59	-2,380.22	2,397.60	0.27	-0.23	0.14	

## Survey Report

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<b>Well:</b>	SBJ 13-5HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,904.00	93.78	270.54	6,871.25	-2,174.31	-2,472.92	2,490.29	1.88	-1.71	0.78	
8,997.00	94.24	269.89	6,864.75	-2,173.96	-2,565.69	2,583.06	0.85	0.49	-0.70	
9,091.00	92.82	271.11	6,858.96	-2,173.14	-2,659.50	2,676.86	1.99	-1.51	1.30	
9,183.00	93.29	271.02	6,854.06	-2,171.43	-2,751.35	2,768.70	0.52	0.51	-0.10	
9,276.00	93.60	270.67	6,848.47	-2,170.07	-2,844.18	2,861.51	0.50	0.33	-0.38	
9,370.00	94.20	270.43	6,842.08	-2,169.17	-2,937.95	2,955.27	0.69	0.64	-0.26	
9,464.00	92.81	269.81	6,836.33	-2,168.97	-3,031.77	3,049.09	1.62	-1.48	-0.66	
9,557.00	93.66	269.60	6,831.08	-2,169.45	-3,124.62	3,141.94	0.94	0.91	-0.23	
9,649.00	93.16	269.05	6,825.61	-2,170.53	-3,216.45	3,233.78	0.81	-0.54	-0.60	
9,743.00	94.24	270.00	6,819.54	-2,171.31	-3,310.25	3,327.58	1.53	1.15	1.01	
9,835.00	91.97	270.11	6,814.56	-2,171.22	-3,402.11	3,419.43	2.47	-2.47	0.12	
9,928.00	92.83	270.01	6,810.67	-2,171.12	-3,495.03	3,512.35	0.93	0.92	-0.11	
10,021.00	93.61	270.43	6,805.44	-2,170.77	-3,587.88	3,605.19	0.95	0.84	0.45	
10,115.00	94.58	270.10	6,798.73	-2,170.33	-3,681.64	3,698.94	1.09	1.03	-0.35	
10,207.00	93.44	268.91	6,792.30	-2,171.12	-3,773.41	3,790.72	1.79	-1.24	-1.29	
10,299.00	94.11	268.68	6,786.24	-2,173.06	-3,865.19	3,882.51	0.77	0.73	-0.25	
10,392.00	93.74	269.25	6,779.87	-2,174.73	-3,957.95	3,975.28	0.73	-0.40	0.61	
10,487.00	94.17	268.98	6,773.32	-2,176.19	-4,052.71	4,070.05	0.53	0.45	-0.28	
10,579.00	93.02	268.73	6,767.55	-2,178.03	-4,144.51	4,161.87	1.28	-1.25	-0.27	
10,671.00	92.64	269.75	6,763.01	-2,179.25	-4,236.39	4,253.75	1.18	-0.41	1.11	
10,763.00	92.51	268.70	6,758.88	-2,180.49	-4,328.29	4,345.66	1.15	-0.14	-1.14	
10,856.00	92.21	268.08	6,755.05	-2,183.10	-4,421.17	4,438.56	0.74	-0.32	-0.67	
10,951.00	92.65	267.76	6,751.02	-2,186.55	-4,516.02	4,533.43	0.57	0.46	-0.34	
11,043.00	93.85	268.01	6,745.80	-2,189.94	-4,607.81	4,625.25	1.33	1.30	0.27	
11,135.00	94.13	269.48	6,739.40	-2,191.95	-4,699.56	4,717.01	1.62	0.30	1.60	
11,228.00	93.06	268.60	6,733.57	-2,193.50	-4,792.37	4,809.82	1.49	-1.15	-0.95	
11,321.00	93.75	268.10	6,728.05	-2,196.18	-4,885.16	4,902.64	0.92	0.74	-0.54	
11,413.00	92.92	267.79	6,722.69	-2,199.47	-4,976.95	4,994.44	0.96	-0.90	-0.34	
11,506.00	93.61	266.97	6,717.40	-2,203.71	-5,069.70	5,087.23	1.15	0.74	-0.88	
11,598.00	93.14	268.30	6,711.98	-2,207.50	-5,161.46	5,179.01	1.53	-0.51	1.45	
11,691.00	92.68	268.87	6,707.26	-2,209.80	-5,254.31	5,271.88	0.79	-0.49	0.61	
11,783.00	93.50	268.40	6,702.30	-2,211.98	-5,346.15	5,363.73	1.03	0.89	-0.51	
11,876.00	92.76	269.53	6,697.22	-2,213.66	-5,438.99	5,456.59	1.45	-0.80	1.22	
11,968.00	92.53	269.66	6,692.98	-2,214.31	-5,530.89	5,548.49	0.29	-0.25	0.14	
12,061.00	93.59	270.58	6,688.01	-2,214.12	-5,623.76	5,641.35	1.51	1.14	0.99	
12,153.00	91.58	270.91	6,683.86	-2,212.92	-5,715.65	5,733.23	2.21	-2.18	0.36	
12,245.00	92.06	270.65	6,680.94	-2,211.67	-5,807.59	5,825.16	0.59	0.52	-0.28	
12,338.00	92.91	270.65	6,676.91	-2,210.62	-5,900.50	5,918.06	0.91	0.91	0.00	
12,432.00	93.99	270.95	6,671.25	-2,209.31	-5,994.32	6,011.86	1.19	1.15	0.32	
12,525.00	91.77	270.28	6,666.58	-2,208.31	-6,087.19	6,104.72	2.49	-2.39	-0.72	
12,620.00	91.88	269.35	6,663.55	-2,208.62	-6,182.14	6,199.67	0.99	0.12	-0.98	
12,714.00	91.84	269.18	6,660.50	-2,209.82	-6,276.08	6,293.62	0.19	-0.04	-0.18	
12,807.00	92.35	268.72	6,657.10	-2,211.52	-6,369.00	6,386.55	0.74	0.55	-0.49	

## Survey Report

<b>Company:</b>	Occidental Petroleum	<b>Local Co-ordinate Reference:</b>	Well SBJ 13-5HZ
<b>Project:</b>	Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b>	RKB = 20' @ 4879.00usft (PD 461)
<b>Site:</b>	4N-68W-13 SBJ 22-13HZ PAD	<b>MD Reference:</b>	RKB = 20' @ 4879.00usft (PD 461)
<b>Well:</b>	SBJ 13-5HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
12,900.00	92.95	268.64	6,652.80	-2,213.66	-6,461.88	6,479.44	0.65	0.65	-0.09	
12,992.00	93.00	268.28	6,648.03	-2,216.13	-6,553.72	6,571.30	0.39	0.05	-0.39	
13,085.00	92.53	268.37	6,643.54	-2,218.85	-6,646.57	6,664.17	0.51	-0.51	0.10	
13,177.00	93.34	268.42	6,638.83	-2,221.42	-6,738.42	6,756.03	0.88	0.88	0.05	
13,270.00	93.99	268.95	6,632.89	-2,223.55	-6,831.20	6,848.83	0.90	0.70	0.57	
13,363.00	93.36	268.73	6,626.93	-2,225.43	-6,923.99	6,941.63	0.72	-0.68	-0.24	
13,455.00	92.86	267.71	6,621.93	-2,228.28	-7,015.81	7,033.47	1.23	-0.54	-1.11	
13,547.00	93.20	269.27	6,617.07	-2,230.71	-7,107.65	7,125.33	1.73	0.37	1.70	
13,639.00	94.06	269.40	6,611.25	-2,231.77	-7,199.45	7,217.14	0.95	0.93	0.14	
13,733.00	93.28	268.26	6,605.23	-2,233.69	-7,293.24	7,310.94	1.47	-0.83	-1.21	
13,826.00	93.59	268.90	6,599.66	-2,235.99	-7,386.04	7,403.76	0.76	0.33	0.69	
13,920.00	93.43	269.43	6,593.90	-2,237.36	-7,479.86	7,497.58	0.59	-0.17	0.56	
14,012.00	93.28	269.16	6,588.52	-2,238.49	-7,571.69	7,589.42	0.34	-0.16	-0.29	
14,104.00	92.69	267.49	6,583.73	-2,241.17	-7,663.52	7,681.27	1.92	-0.64	-1.82	
14,196.00	93.33	269.98	6,578.90	-2,243.20	-7,755.37	7,773.13	2.79	0.70	2.71	
14,290.00	92.12	268.15	6,574.43	-2,244.73	-7,849.24	7,867.01	2.33	-1.29	-1.95	
14,382.00	93.07	268.96	6,570.26	-2,247.05	-7,941.12	7,958.90	1.36	1.03	0.88	
14,474.00	93.73	268.95	6,564.80	-2,248.73	-8,032.94	8,050.73	0.72	0.72	-0.01	
14,567.00	94.18	268.85	6,558.39	-2,250.51	-8,125.70	8,143.51	0.50	0.48	-0.11	
14,659.00	93.05	269.65	6,552.59	-2,251.71	-8,217.51	8,235.32	1.50	-1.23	0.87	
14,753.00	92.43	269.32	6,548.10	-2,252.55	-8,311.40	8,329.21	0.75	-0.66	-0.35	
14,846.00	91.66	270.95	6,544.78	-2,252.33	-8,404.33	8,422.14	1.94	-0.83	1.75	
14,939.00	93.01	272.15	6,540.99	-2,249.82	-8,497.22	8,515.01	1.94	1.45	1.29	
15,033.00	93.55	271.39	6,535.61	-2,246.92	-8,591.02	8,608.78	0.99	0.57	-0.81	
15,126.00	91.97	272.69	6,531.13	-2,243.61	-8,683.85	8,701.58	2.20	-1.70	1.40	
15,219.00	91.46	272.55	6,528.35	-2,239.36	-8,776.71	8,794.40	0.57	-0.55	-0.15	
15,311.00	92.07	272.40	6,525.51	-2,235.39	-8,868.58	8,886.24	0.68	0.66	-0.16	
15,403.00	91.45	271.71	6,522.69	-2,232.10	-8,960.47	8,978.10	1.01	-0.67	-0.75	
15,496.00	89.29	269.32	6,522.09	-2,231.26	-9,053.46	9,071.08	3.46	-2.32	-2.57	
15,590.00	90.44	270.34	6,522.31	-2,231.54	-9,147.45	9,165.07	1.64	1.22	1.09	
15,683.00	91.89	269.68	6,520.42	-2,231.52	-9,240.43	9,258.05	1.71	1.56	-0.71	
15,776.00	92.62	269.90	6,516.76	-2,231.86	-9,333.36	9,350.97	0.82	0.78	0.24	
15,869.00	90.94	268.93	6,513.87	-2,232.81	-9,426.30	9,443.92	2.09	-1.81	-1.04	
15,962.00	93.05	269.39	6,510.63	-2,234.18	-9,519.23	9,536.86	2.32	2.27	0.49	
16,055.00	93.68	269.10	6,505.17	-2,235.40	-9,612.06	9,629.70	0.75	0.68	-0.31	
16,148.00	94.55	269.29	6,498.50	-2,236.70	-9,704.81	9,722.46	0.96	0.94	0.20	
16,240.00	93.08	269.40	6,492.38	-2,237.75	-9,796.60	9,814.25	1.60	-1.60	0.12	
16,333.00	92.11	267.83	6,488.17	-2,240.00	-9,889.47	9,907.14	1.98	-1.04	-1.69	
16,425.00	91.35	267.27	6,485.39	-2,243.93	-9,981.35	9,999.04	1.03	-0.83	-0.61	
16,517.00	93.50	269.05	6,481.50	-2,246.88	-10,073.21	10,090.92	3.03	2.34	1.93	
16,610.00	93.12	269.19	6,476.13	-2,248.31	-10,166.04	10,183.76	0.44	-0.41	0.15	
16,703.00	93.77	268.99	6,470.54	-2,249.78	-10,258.86	10,276.59	0.73	0.70	-0.22	
16,795.00	94.50	269.33	6,463.91	-2,251.13	-10,350.61	10,368.35	0.87	0.79	0.37	

## Survey Report

<b>Company:</b>	Occidental Petroleum	<b>Local Co-ordinate Reference:</b>	Well SBJ 13-5HZ
<b>Project:</b>	Weld County, CO (UTM-NAD83)	<b>TVD Reference:</b>	RKB = 20' @ 4879.00usft (PD 461)
<b>Site:</b>	4N-68W-13 SBJ 22-13HZ PAD	<b>MD Reference:</b>	RKB = 20' @ 4879.00usft (PD 461)
<b>Well:</b>	SBJ 13-5HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
16,887.00	94.08	270.13	6,457.03	-2,251.56	-10,442.35	10,460.09	0.98	-0.46	0.87
16,979.00	92.05	269.19	6,452.11	-2,252.10	-10,534.21	10,551.95	2.43	-2.21	-1.02
17,071.00	92.72	269.49	6,448.28	-2,253.16	-10,626.12	10,643.87	0.80	0.73	0.33
17,164.00	92.11	269.30	6,444.36	-2,254.14	-10,719.04	10,736.79	0.69	-0.66	-0.20
17,259.00	92.02	269.00	6,440.94	-2,255.55	-10,813.96	10,831.72	0.33	-0.09	-0.32
17,351.00	91.44	269.41	6,438.16	-2,256.83	-10,905.91	10,923.68	0.77	-0.63	0.45
17,445.00	93.48	269.75	6,434.12	-2,257.52	-10,999.82	11,017.59	2.20	2.17	0.36
17,537.00	93.52	269.15	6,428.51	-2,258.40	-11,091.64	11,109.42	0.65	0.04	-0.65
17,632.00	93.12	268.94	6,423.01	-2,259.98	-11,186.47	11,204.25	0.48	-0.42	-0.22
17,724.00	93.40	268.76	6,417.77	-2,261.82	-11,278.30	11,296.10	0.36	0.30	-0.20
17,817.00	94.54	268.70	6,411.34	-2,263.88	-11,371.05	11,388.86	1.23	1.23	-0.06
17,870.00	94.27	269.30	6,407.26	-2,264.80	-11,423.89	11,441.70	1.24	-0.51	1.13
<b>Last Survey Reported</b>									
17,930.00	94.27	269.30	6,402.80	-2,265.53	-11,483.72	11,501.54	0.00	0.00	0.00
<b>BHL - 17930.00' MD - 220' FWL / 953' FSL - SBJ 13-5HZ BHL</b>									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
17,870.00	6,407.26	-2,264.80	-11,423.89	Last Survey Reported	
17,930.00	6,402.80	-2,265.53	-11,483.72	BHL - 17930.00' MD - 220' FWL / 953' FSL	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_