

Occidental Petroleum

Weld County, CO (UTM-NAD83)

RAINBOW 24-9HZ PAD

RAINBOW 9-18HZ

OH

Design: OH

Standard Survey Report

21 June, 2023



Project: Weld County, CO (UTM-NAD83)
 Site: RAINBOW 24-9HZ PAD
 Well: RAINBOW 9-18HZ
 Wellbore: OH
 Design: OH
 Lat: 40.414689
 Long: -104.896037
 GL: 4949.00
 KB: PD 461 @ 4969.00usft



Azimuths to True North
 Magnetic North: 7.89°
 Magnetic Field
 Strength: 51799.8nT
 Dip Angle: 66.58°
 Date: 3/19/2023
 Model: HRGM

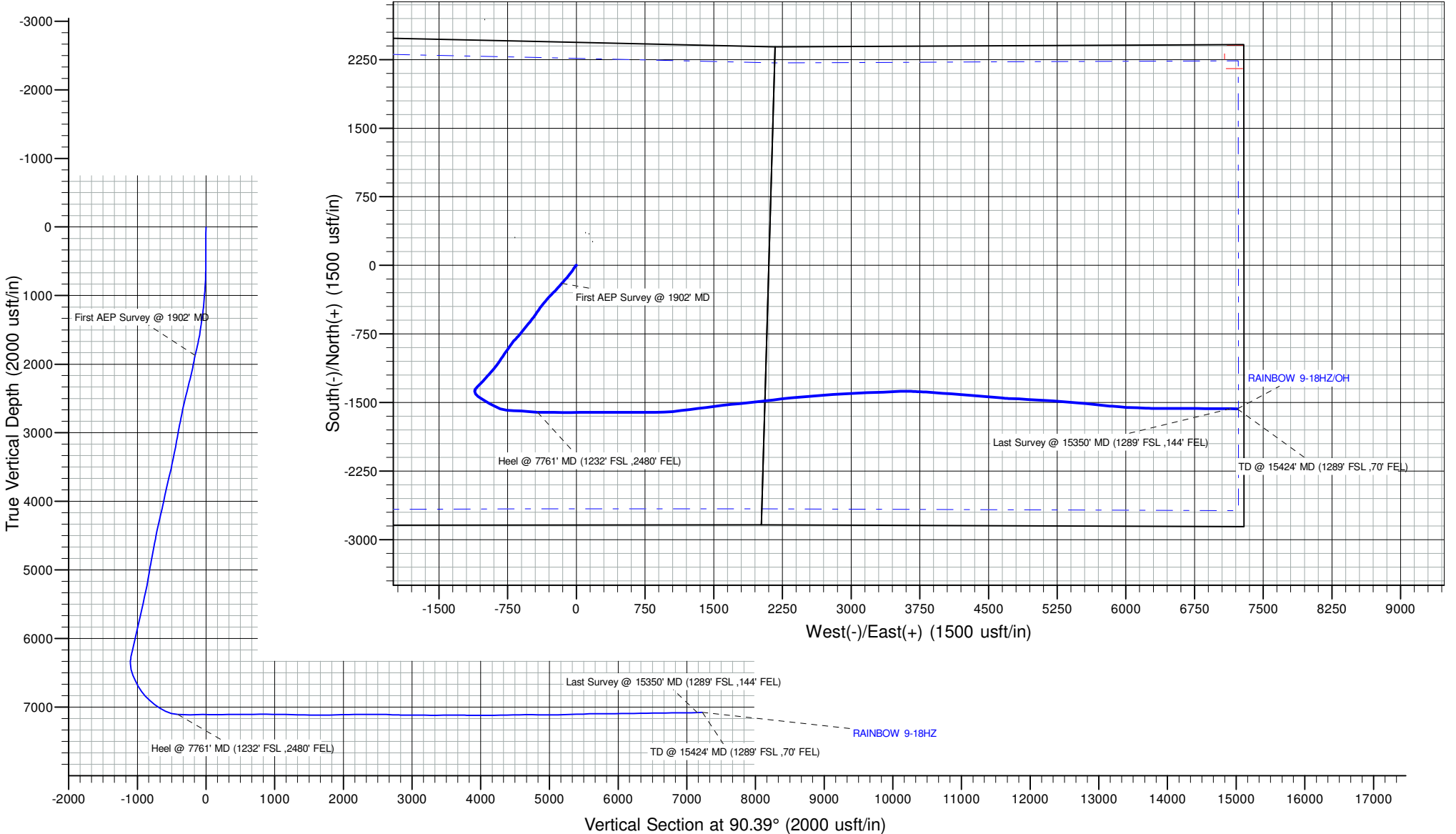
WELL DETAILS: RAINBOW 9-18HZ

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14677760.79	1669354.72	40.414689	-104.896037

SHL: 2439' FNL, 2101' FEL - Sec 9-T5N-R67W
 Heel: 1232' FSL, 2480' FEL - Sec 9-T5N-R67W
 BHL: 1289' FSL, 70' FEL - Sec 10-T5N-R67W

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
1902.00	18.69	221.21	1871.89	-195.89	-158.51	-157.17	254.49	First AEP Survey @ 1902' MD
7761.00	87.67	91.87	7106.68	-1606.85	-424.85	-413.91	2534.60	Heel @ 7761' MD (1232' FSL ,2480' FEL)
15350.00	91.65	90.47	7080.95	-1567.94	7144.41	7154.92	10122.33	Last Survey @ 15350' MD (1289' FSL ,144' FEL)
15424.00	91.65	90.47	7078.82	-1568.54	7218.38	7228.89	10196.30	TD @ 15424' MD (1289' FSL ,70' FEL)



Survey Report

Company: Occidental Petroleum	Local Co-ordinate Reference: Well RAINBOW 9-18HZ
Project: Weld County, CO (UTM-NAD83)	TVD Reference: PD 461 @ 4969.00usft
Site: RAINBOW 24-9HZ PAD	MD Reference: PD 461 @ 4969.00usft
Well: RAINBOW 9-18HZ	North Reference: True
Wellbore: OH	Survey Calculation Method: Minimum Curvature
Design: OH	Database: Fhartmann

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

Site RAINBOW 24-9HZ PAD		
Site Position:	Northing: 14,677,926.65 usft	Latitude: 40.415144
From: Lat/Long	Easting: 1,669,365.10 usft	Longitude: -104.895999
Position Uncertainty: 0.00 usft	Slot Radius: 13-3/16 "	

Well RAINBOW 9-18HZ		
Well Position +N/-S 0.00 usft	Northing: 14,677,760.79 usft	Latitude: 40.414689
+E/-W 0.00 usft	Easting: 1,669,354.72 usft	Longitude: -104.896037
Position Uncertainty 3.28 usft	Wellhead Elevation: usft	Ground Level: 4,949.00 usft
Grid Convergence: 0.07 °		

Wellbore OH					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HRGM	3/19/2023	7.89	66.58	51,799.83093586

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	269.98	

Survey Program		Date 6/21/2023		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
15.00	1,843.00	Surface (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination
1,902.00	15,424.00	MWD (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:Rockies, crustal dec + 3-axis correction

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	0.00
15.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
91.00	0.41	261.64	91.00	-0.04	-0.27	0.27	0.54	0.54	0.00	
179.00	0.90	268.28	178.99	-0.11	-1.27	1.27	0.56	0.56	7.55	
269.00	0.74	282.80	268.98	0.00	-2.54	2.54	0.29	-0.18	16.13	
361.00	0.37	250.07	360.98	0.03	-3.40	3.40	0.51	-0.40	-35.58	
451.00	0.29	182.61	450.98	-0.29	-3.69	3.69	0.41	-0.09	-74.96	
541.00	0.53	149.48	540.98	-0.88	-3.49	3.49	0.36	0.27	-36.81	
631.00	1.70	202.24	630.96	-2.48	-3.78	3.78	1.60	1.30	58.62	

Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well RAINBOW 9-18HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4969.00usft
Site:	RAINBOW 24-9HZ PAD	MD Reference:	PD 461 @ 4969.00usft
Well:	RAINBOW 9-18HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Fhartmann

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)	
721.00	2.78	222.05	720.89	-5.33	-5.75	5.75	1.46	1.20	22.01	
811.00	4.15	225.04	810.72	-9.25	-9.51	9.52	1.53	1.52	3.32	
901.00	5.74	217.10	900.39	-15.14	-14.53	14.54	1.92	1.77	-8.82	
991.00	7.75	218.53	989.76	-23.48	-21.03	21.04	2.24	2.23	1.59	
1,081.00	9.44	213.75	1,078.75	-34.37	-28.91	28.92	2.04	1.88	-5.31	
1,171.00	10.76	213.32	1,167.35	-47.52	-37.63	37.64	1.47	1.47	-0.48	
1,261.00	11.95	215.38	1,255.59	-62.14	-47.64	47.66	1.40	1.32	2.29	
1,351.00	12.63	215.54	1,343.52	-77.75	-58.75	58.78	0.76	0.76	0.18	
1,441.00	13.49	219.22	1,431.20	-93.89	-71.11	71.14	1.33	0.96	4.09	
1,531.00	14.44	219.10	1,518.54	-110.73	-84.82	84.86	1.06	1.06	-0.13	
1,621.00	16.65	218.04	1,605.24	-129.59	-99.85	99.89	2.48	2.46	-1.18	
1,711.00	17.84	221.80	1,691.19	-150.03	-116.98	117.03	1.81	1.32	4.18	
1,801.00	19.57	222.85	1,776.44	-171.36	-136.42	136.48	1.96	1.92	1.17	
1,843.00	19.10	222.07	1,816.07	-181.61	-145.81	145.87	1.28	-1.12	-1.86	
1,902.00	18.69	221.21	1,871.89	-195.89	-158.51	158.58	0.84	-0.69	-1.46	
First AEP Survey @ 1902' MD										
1,995.00	16.89	218.91	1,960.44	-217.62	-176.81	176.89	2.08	-1.94	-2.47	
2,087.00	19.33	222.66	2,047.88	-239.22	-195.53	195.61	2.94	2.65	4.08	
2,179.00	17.68	222.45	2,135.12	-260.72	-215.28	215.37	1.79	-1.79	-0.23	
2,271.00	19.31	225.50	2,222.37	-281.70	-235.56	235.65	2.06	1.77	3.32	
2,363.00	18.29	225.59	2,309.46	-302.46	-256.72	256.82	1.11	-1.11	0.10	
2,455.00	19.76	222.23	2,396.43	-324.08	-277.49	277.60	1.99	1.60	-3.65	
2,548.00	19.72	222.09	2,483.97	-347.36	-298.57	298.69	0.07	-0.04	-0.15	
2,640.00	20.05	221.21	2,570.48	-370.75	-319.36	319.49	0.48	0.36	-0.96	
2,732.00	18.72	220.62	2,657.26	-393.82	-339.37	339.50	1.46	-1.45	-0.64	
2,825.00	18.91	218.82	2,745.30	-416.89	-358.53	358.67	0.66	0.20	-1.94	
2,918.00	17.47	218.59	2,833.65	-439.54	-376.68	376.84	1.55	-1.55	-0.25	
3,032.00	19.04	215.62	2,941.91	-468.03	-398.19	398.35	1.60	1.38	-2.61	
3,125.00	16.40	213.81	3,030.49	-491.28	-414.33	414.50	2.90	-2.84	-1.95	
3,217.00	18.80	213.69	3,118.17	-514.41	-429.78	429.96	2.61	2.61	-0.13	
3,309.00	19.26	213.94	3,205.15	-539.33	-446.48	446.67	0.51	0.50	0.27	
3,403.00	18.44	217.41	3,294.11	-564.00	-464.17	464.36	1.48	-0.87	3.69	
3,497.00	19.27	218.29	3,383.06	-587.98	-482.81	483.02	0.93	0.88	0.94	
3,589.00	18.13	217.63	3,470.20	-611.24	-500.96	501.17	1.26	-1.24	-0.72	
3,681.00	19.85	221.02	3,557.20	-634.36	-519.95	520.17	2.22	1.87	3.68	
3,775.00	20.48	219.83	3,645.43	-659.03	-540.96	541.19	0.80	0.67	-1.27	
3,868.00	20.38	218.81	3,732.59	-684.14	-561.53	561.77	0.40	-0.11	-1.10	
3,962.00	20.29	217.58	3,820.73	-709.81	-581.73	581.97	0.46	-0.10	-1.31	
4,057.00	18.88	217.02	3,910.23	-735.14	-601.03	601.28	1.50	-1.48	-0.59	
4,149.00	17.95	219.79	3,997.52	-757.92	-619.06	619.33	1.39	-1.01	3.01	
4,241.00	17.83	226.78	4,085.08	-778.46	-638.40	638.67	2.34	-0.13	7.60	
4,333.00	21.29	223.52	4,171.76	-800.22	-660.17	660.45	3.94	3.76	-3.54	
4,426.00	20.38	217.30	4,258.69	-825.35	-681.62	681.90	2.57	-0.98	-6.69	

Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well RAINBOW 9-18HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4969.00usft
Site:	RAINBOW 24-9HZ PAD	MD Reference:	PD 461 @ 4969.00usft
Well:	RAINBOW 9-18HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Fhartmann

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)	
4,518.00	19.40	217.55	4,345.20	-850.21	-700.64	700.93	1.07	-1.07	0.27	
4,611.00	19.82	216.87	4,432.81	-875.07	-719.51	719.81	0.51	0.45	-0.73	
4,703.00	19.16	211.87	4,519.54	-900.37	-736.84	737.15	1.95	-0.72	-5.43	
4,795.00	17.59	217.11	4,606.85	-924.28	-753.20	753.52	2.48	-1.71	5.70	
4,888.00	18.43	216.75	4,695.29	-947.27	-770.48	770.81	0.91	0.90	-0.39	
4,982.00	18.71	214.51	4,784.40	-971.60	-787.91	788.25	0.82	0.30	-2.38	
5,075.00	18.69	213.09	4,872.49	-996.37	-804.49	804.84	0.49	-0.02	-1.53	
5,167.00	17.50	212.69	4,959.94	-1,020.36	-820.01	820.37	1.30	-1.29	-0.43	
5,260.00	16.95	211.88	5,048.77	-1,043.64	-834.73	835.09	0.65	-0.59	-0.87	
5,353.00	16.40	216.37	5,137.86	-1,065.73	-849.67	850.04	1.51	-0.59	4.83	
5,445.00	18.56	219.03	5,225.61	-1,087.56	-866.60	866.98	2.50	2.35	2.89	
5,538.00	18.60	219.17	5,313.76	-1,110.56	-885.28	885.67	0.06	0.04	0.15	
5,630.00	18.60	220.51	5,400.96	-1,133.09	-904.08	904.48	0.46	0.00	1.46	
5,722.00	19.21	220.52	5,488.00	-1,155.75	-923.45	923.85	0.66	0.66	0.01	
5,814.00	19.19	219.41	5,574.88	-1,178.94	-942.88	943.29	0.40	-0.02	-1.21	
5,907.00	19.57	224.42	5,662.61	-1,201.87	-963.49	963.91	1.83	0.41	5.39	
5,999.00	18.26	221.94	5,749.65	-1,223.60	-983.91	984.33	1.67	-1.42	-2.70	
6,091.00	18.64	219.98	5,836.92	-1,245.59	-1,002.99	1,003.42	0.79	0.41	-2.13	
6,184.00	17.97	220.62	5,925.21	-1,267.87	-1,021.87	1,022.32	0.75	-0.72	0.69	
6,277.00	18.59	225.97	6,013.52	-1,289.06	-1,041.87	1,042.32	1.92	0.67	5.75	
6,370.00	18.61	224.03	6,101.67	-1,310.03	-1,062.85	1,063.30	0.67	0.02	-2.09	
6,463.00	18.53	224.78	6,189.83	-1,331.19	-1,083.57	1,084.03	0.27	-0.09	0.81	
6,555.00	17.07	215.74	6,277.44	-1,352.53	-1,101.76	1,102.23	3.39	-1.59	-9.83	
6,647.00	19.19	178.21	6,365.16	-1,378.70	-1,109.20	1,109.68	12.68	2.30	-40.79	
6,741.00	20.88	145.63	6,453.74	-1,408.06	-1,099.23	1,099.72	11.86	1.80	-34.66	
6,833.00	26.29	124.79	6,538.17	-1,433.28	-1,073.18	1,073.68	10.72	5.88	-22.65	
6,925.00	29.44	123.54	6,619.49	-1,457.40	-1,037.59	1,038.10	3.48	3.42	-1.36	
7,017.00	33.30	121.94	6,698.03	-1,483.26	-997.30	997.81	4.29	4.20	-1.74	
7,111.00	40.35	118.34	6,773.24	-1,511.40	-948.55	949.08	7.84	7.50	-3.83	
7,203.00	45.99	117.31	6,840.31	-1,540.74	-892.89	893.43	6.18	6.13	-1.12	
7,297.00	47.86	109.79	6,904.55	-1,568.07	-830.01	830.56	6.17	1.99	-8.00	
7,391.00	53.65	95.94	6,964.17	-1,583.85	-759.30	759.86	12.94	6.16	-14.73	
7,483.00	58.85	92.06	7,015.28	-1,589.10	-683.04	683.59	6.65	5.65	-4.22	
7,576.00	62.76	93.85	7,060.63	-1,593.31	-601.98	602.54	4.53	4.20	1.92	
7,669.00	75.80	95.89	7,093.47	-1,600.75	-515.51	516.07	14.17	14.02	2.19	
7,761.00	87.67	91.87	7,106.68	-1,606.85	-424.85	425.41	13.60	12.90	-4.37	
Heel @ 7761' MD (1232' FSL ,2480' FEL)										
7,853.00	87.43	90.04	7,110.61	-1,608.38	-332.95	333.51	2.00	-0.26	-1.99	
7,945.00	90.35	89.96	7,112.39	-1,608.38	-240.98	241.54	3.18	3.17	-0.09	
8,037.00	91.65	90.35	7,110.79	-1,608.63	-149.00	149.56	1.48	1.41	0.42	
8,129.00	89.38	89.75	7,109.96	-1,608.71	-57.01	57.57	2.55	-2.47	-0.65	
8,223.00	89.45	89.69	7,110.92	-1,608.25	36.99	-36.43	0.10	0.07	-0.06	
8,315.00	90.39	90.07	7,111.05	-1,608.06	128.99	-128.42	1.10	1.02	0.41	
8,407.00	90.91	89.83	7,110.00	-1,607.97	220.98	-220.42	0.62	0.57	-0.26	

Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well RAINBOW 9-18HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4969.00usft
Site:	RAINBOW 24-9HZ PAD	MD Reference:	PD 461 @ 4969.00usft
Well:	RAINBOW 9-18HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Fhartmann

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)	
8,499.00	90.32	90.00	7,109.02	-1,607.84	312.97	-312.41	0.67	-0.64	0.18	
8,591.00	90.26	89.50	7,108.55	-1,607.44	404.97	-404.41	0.55	-0.07	-0.54	
8,684.00	91.38	89.11	7,107.22	-1,606.31	497.95	-497.39	1.28	1.20	-0.42	
8,776.00	89.67	91.03	7,106.38	-1,606.42	589.94	-589.38	2.79	-1.86	2.09	
8,869.00	90.36	90.70	7,106.35	-1,607.83	682.93	-682.37	0.82	0.74	-0.35	
8,961.00	91.29	90.09	7,105.03	-1,608.46	774.92	-774.36	1.21	1.01	-0.66	
9,054.00	88.56	88.71	7,105.15	-1,607.49	867.90	-867.34	3.29	-2.94	-1.48	
9,147.00	89.34	87.91	7,106.85	-1,604.74	960.84	-960.28	1.20	0.84	-0.86	
9,239.00	90.02	84.29	7,107.37	-1,598.49	1,052.61	-1,052.05	4.00	0.74	-3.93	
9,331.00	88.91	83.52	7,108.23	-1,588.72	1,144.09	-1,143.53	1.47	-1.21	-0.84	
9,425.00	88.83	82.85	7,110.08	-1,577.57	1,237.40	-1,236.85	0.72	-0.09	-0.71	
9,517.00	88.64	82.86	7,112.11	-1,566.13	1,328.67	-1,328.12	0.21	-0.21	0.01	
9,609.00	88.49	82.22	7,114.41	-1,554.19	1,419.86	-1,419.32	0.71	-0.16	-0.70	
9,701.00	88.32	81.49	7,116.98	-1,541.16	1,510.90	-1,510.36	0.81	-0.18	-0.79	
9,794.00	89.70	84.18	7,118.58	-1,529.56	1,603.14	-1,602.61	3.25	1.48	2.89	
9,887.00	90.84	84.82	7,118.14	-1,520.65	1,695.71	-1,695.18	1.41	1.23	0.69	
9,979.00	91.31	84.40	7,116.42	-1,512.01	1,787.29	-1,786.76	0.69	0.51	-0.46	
10,071.00	92.15	83.80	7,113.64	-1,502.56	1,878.76	-1,878.24	1.12	0.91	-0.65	
10,163.00	90.46	83.69	7,111.55	-1,492.53	1,970.19	-1,969.66	1.84	-1.84	-0.12	
10,255.00	90.62	83.36	7,110.68	-1,482.16	2,061.59	-2,061.08	0.40	0.17	-0.36	
10,347.00	90.77	82.86	7,109.56	-1,471.12	2,152.92	-2,152.41	0.57	0.16	-0.54	
10,441.00	91.46	82.59	7,107.73	-1,459.22	2,246.15	-2,245.64	0.79	0.73	-0.29	
10,534.00	89.61	85.25	7,106.87	-1,449.38	2,338.61	-2,338.10	3.48	-1.99	2.86	
10,626.00	90.53	85.25	7,106.75	-1,441.76	2,430.29	-2,429.79	1.00	1.00	0.00	
10,719.00	88.86	86.12	7,107.25	-1,434.76	2,523.02	-2,522.52	2.02	-1.80	0.94	
10,811.00	88.31	85.78	7,109.52	-1,428.26	2,614.76	-2,614.27	0.70	-0.60	-0.37	
10,903.00	88.11	85.02	7,112.39	-1,420.89	2,706.42	-2,705.93	0.85	-0.22	-0.83	
10,996.00	87.90	84.78	7,115.63	-1,412.63	2,799.00	-2,798.50	0.34	-0.23	-0.26	
11,089.00	89.58	87.40	7,117.68	-1,406.29	2,891.75	-2,891.26	3.35	1.81	2.82	
11,182.00	89.52	87.18	7,118.41	-1,401.89	2,984.64	-2,984.15	0.25	-0.06	-0.24	
11,274.00	89.43	87.39	7,119.25	-1,397.53	3,076.53	-3,076.05	0.25	-0.10	0.23	
11,367.00	89.71	87.99	7,119.95	-1,393.79	3,169.45	-3,168.97	0.71	0.30	0.65	
11,460.00	89.75	87.95	7,120.39	-1,390.49	3,262.40	-3,261.91	0.06	0.04	-0.04	
11,552.00	90.31	87.73	7,120.34	-1,387.02	3,354.33	-3,353.84	0.65	0.61	-0.24	
11,644.00	90.44	87.29	7,119.74	-1,383.03	3,446.24	-3,445.76	0.50	0.14	-0.48	
11,737.00	90.75	87.47	7,118.77	-1,378.78	3,539.14	-3,538.66	0.39	0.33	0.19	
11,830.00	90.80	91.34	7,117.51	-1,377.81	3,632.11	-3,631.63	4.16	0.05	4.16	
11,923.00	87.80	92.41	7,118.65	-1,380.85	3,725.04	-3,724.56	3.42	-3.23	1.15	
12,015.00	90.11	94.16	7,120.33	-1,386.12	3,816.86	-3,816.38	3.15	2.51	1.90	
12,107.00	89.86	93.93	7,120.35	-1,392.61	3,908.63	-3,908.15	0.37	-0.27	-0.25	
12,199.00	89.96	94.17	7,120.49	-1,399.11	4,000.40	-3,999.91	0.28	0.11	0.26	
12,292.00	90.06	94.14	7,120.48	-1,405.85	4,093.16	-4,092.67	0.11	0.11	-0.03	
12,385.00	90.31	93.76	7,120.18	-1,412.26	4,185.94	-4,185.44	0.49	0.27	-0.41	

Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well RAINBOW 9-18HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4969.00usft
Site:	RAINBOW 24-9HZ PAD	MD Reference:	PD 461 @ 4969.00usft
Well:	RAINBOW 9-18HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Fhartmann

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)	
12,479.00	90.34	94.14	7,119.64	-1,418.73	4,279.71	-4,279.22	0.41	0.03	0.40	
12,572.00	91.94	94.56	7,117.79	-1,425.78	4,372.42	-4,371.92	1.78	1.72	0.45	
12,663.00	91.09	94.86	7,115.39	-1,433.25	4,463.08	-4,462.58	0.99	-0.93	0.33	
12,756.00	91.69	95.39	7,113.13	-1,441.56	4,555.68	-4,555.18	0.86	0.65	0.57	
12,848.00	90.91	95.99	7,111.05	-1,450.68	4,647.20	-4,646.70	1.07	-0.85	0.65	
12,940.00	88.49	92.39	7,111.53	-1,457.40	4,738.94	-4,738.43	4.71	-2.63	-3.91	
13,033.00	87.90	92.56	7,114.46	-1,461.41	4,831.80	-4,831.29	0.66	-0.63	0.18	
13,128.00	90.55	93.74	7,115.74	-1,466.63	4,926.64	-4,926.13	3.05	2.79	1.24	
13,221.00	90.80	93.56	7,114.65	-1,472.55	5,019.44	-5,018.93	0.33	0.27	-0.19	
13,314.00	91.12	93.02	7,113.09	-1,477.89	5,112.28	-5,111.76	0.67	0.34	-0.58	
13,406.00	92.56	94.20	7,110.13	-1,483.68	5,204.04	-5,203.53	2.02	1.57	1.28	
13,498.00	91.10	94.44	7,107.20	-1,490.60	5,295.73	-5,295.21	1.61	-1.59	0.26	
13,590.00	91.52	94.56	7,105.09	-1,497.82	5,387.42	-5,386.90	0.47	0.46	0.13	
13,683.00	91.74	94.69	7,102.45	-1,505.32	5,480.08	-5,479.56	0.27	0.24	0.14	
13,776.00	91.97	95.00	7,099.44	-1,513.17	5,572.70	-5,572.17	0.41	0.25	0.33	
13,869.00	90.06	95.83	7,097.79	-1,521.94	5,665.27	-5,664.74	2.24	-2.05	0.89	
13,961.00	90.55	97.02	7,097.30	-1,532.24	5,756.69	-5,756.15	1.40	0.53	1.29	
14,053.00	89.96	93.60	7,096.89	-1,540.75	5,848.28	-5,847.74	3.77	-0.64	-3.72	
14,146.00	91.06	95.59	7,096.06	-1,548.20	5,940.97	-5,940.43	2.44	1.18	2.14	
14,239.00	90.05	91.80	7,095.16	-1,554.19	6,033.75	-6,033.21	4.22	-1.09	-4.08	
14,332.00	90.53	92.29	7,094.69	-1,557.51	6,126.69	-6,126.15	0.74	0.52	0.53	
14,424.00	91.12	92.69	7,093.37	-1,561.50	6,218.60	-6,218.05	0.77	0.64	0.43	
14,517.00	91.06	90.47	7,091.60	-1,564.07	6,311.54	-6,310.99	2.39	-0.06	-2.39	
14,610.00	90.85	90.17	7,090.05	-1,564.59	6,404.52	-6,403.98	0.39	-0.23	-0.32	
14,703.00	91.75	90.52	7,087.94	-1,565.15	6,497.50	-6,496.95	1.04	0.97	0.38	
14,795.00	90.04	90.31	7,086.50	-1,565.81	6,589.48	-6,588.93	1.87	-1.86	-0.23	
14,887.00	90.23	89.90	7,086.28	-1,565.98	6,681.48	-6,680.93	0.49	0.21	-0.45	
14,980.00	90.84	90.69	7,085.41	-1,566.46	6,774.47	-6,773.93	1.07	0.66	0.85	
15,072.00	91.61	90.78	7,083.45	-1,567.64	6,866.44	-6,865.90	0.84	0.84	0.10	
15,165.00	89.42	89.54	7,082.61	-1,567.90	6,959.43	-6,958.88	2.71	-2.35	-1.33	
15,258.00	90.50	90.02	7,082.68	-1,567.54	7,052.43	-7,051.88	1.27	1.16	0.52	
15,350.00	91.65	90.47	7,080.95	-1,567.94	7,144.41	-7,143.86	1.34	1.25	0.49	
Last Survey @ 15350' MD (1289' FSL ,144' FEL)										
15,424.00	91.65	90.47	7,078.82	-1,568.54	7,218.38	-7,217.83	0.00	0.00	0.00	
TD @ 15424' MD (1289' FSL ,70' FEL)										

Survey Report

Company:	Occidental Petroleum	Local Co-ordinate Reference:	Well RAINBOW 9-18HZ
Project:	Weld County, CO (UTM-NAD83)	TVD Reference:	PD 461 @ 4969.00usft
Site:	RAINBOW 24-9HZ PAD	MD Reference:	PD 461 @ 4969.00usft
Well:	RAINBOW 9-18HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Fhartmann

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,902.00	1,871.89	-195.89	-158.51	First AEP Survey @ 1902' MD
7,761.00	7,106.68	-1,606.85	-424.85	Heel @ 7761' MD (1232' FSL ,2480' FEL)
15,350.00	7,080.95	-1,567.94	7,144.41	Last Survey @ 15350' MD (1289' FSL ,144' FEL)
15,424.00	7,078.82	-1,568.54	7,218.38	TD @ 15424' MD (1289' FSL ,70' FEL)

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