

EXTRACTION OIL & GAS

Location: COLORADO Slot: SLOT#07 RANCHO WATER VALLEY 10(475'FNL & 274'FEL,SEC.04)
Field: WELD COUNTY (NAD83/TRUE NORTH) Well: RANCHO WATER VALLEY 10
Facility: SEC.04-T05N-R67W Wellbore: RANCHO WATER VALLEY 10 PWB

Plot reference wellpath is RANCHO WATER VALLEY 10 (REV-B.0) PWP

True vertical depths are referenced to RIG (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to RIG (RKB)	North Reference: True north
RIG (RKB) to Mean Sea Level: 4799 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#07 RANCHO WATER VALLEY 10(475'FNL & 274'FEL,SEC.04)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painsetr on 7/31/2014

Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.04-T05N-R67W			3170424.561	1402077.673	40°26'07.764"N	104°53'15.936"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#07 RANCHO WATER VALLEY 10(475FNL & 274FEL,SEC.04)	-257.57	-74.88	3170351.460	1401819.603	40°26'05.219"N	104°53'16.904"W
RIG (RKB) to Mud line (At Slot: SLOT#07 RANCHO WATER VALLEY 10(475FNL & 274FEL,SEC.04))					4799ft	
Mean Sea Level to Mud line (At Slot: SLOT#07 RANCHO WATER VALLEY 10(475FNL & 274FEL,SEC.04))					0ft	
RIG (RKB) to Mean Sea Level					4799ft	

Targets

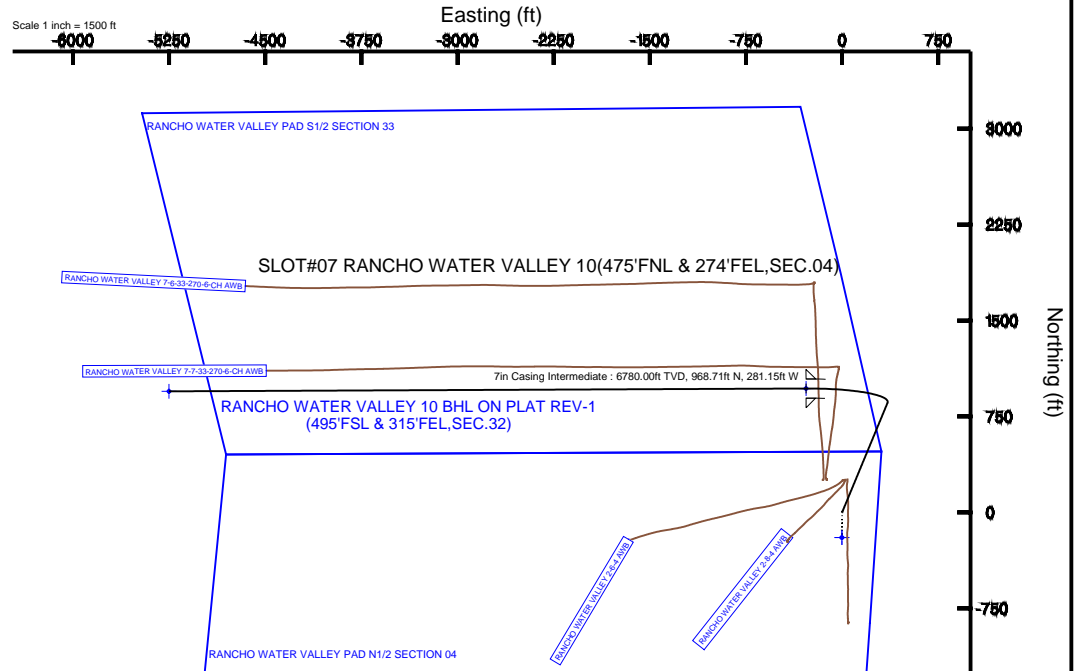
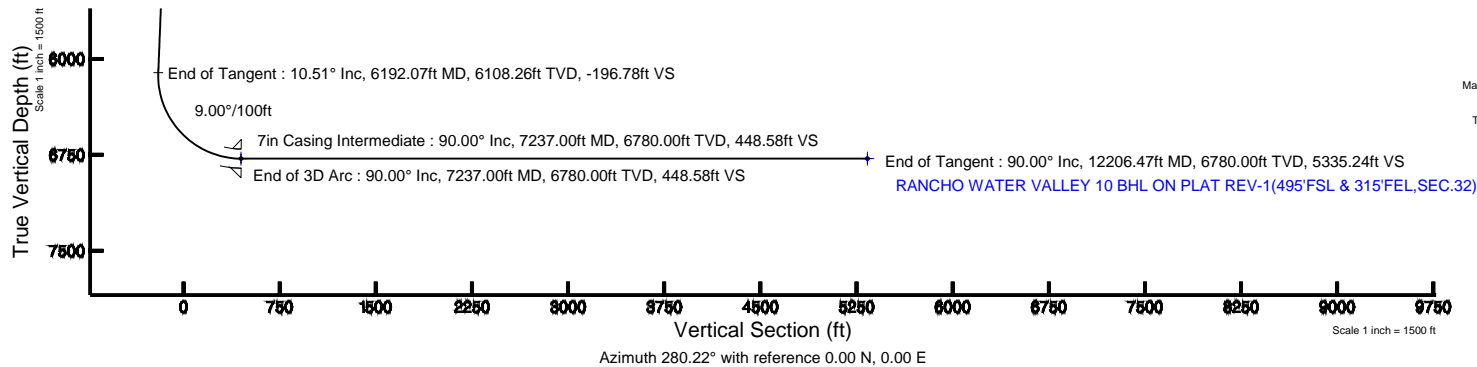
Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
RANCHO WATER VALLEY PAD N1/2 SECTION 04		0.00	-196.00	-1.39	3170351.42	1401623.60	40°28'03.282"N	104°53'16.922"W
RANCHO WATER VALLEY PAD S1/2 SECTION 33		0.00	-196.00	-1.39	3170351.42	1401623.60	40°28'03.282"N	104°53'16.922"W
RANCHO WATER VALLEY 10 BHL ON PLAT REV-1(495'FSL & 315'FEL,SEC.32)	12206.47	6780.00	946.68	-281.15	3165094.69	1402723.99	40°28'14.568"N	104°54'24.808"W
RANCHO WATER VALLEY 10 LANDING	7237.00	6780.00	968.71	-281.15	3170063.64	1402786.31	40°28'14.791"N	104°53'20.540"W

Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
24.00	13000.00	NaviTrak	NaviTrak (Standard)		RANCHO WATER VALLEY 10 PWB

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	24.00	0.000	22.477	24.00	0.00	0.00	0.00	0.00
End of Tangent	850.00	0.000	22.477	850.00	0.00	0.00	0.00	0.00
End of Build	1375.70	10.514	22.477	1372.75	44.44	18.39	2.00	-10.21
End of Tangent	6192.07	10.514	22.477	6108.26	856.55	354.39	0.00	-196.78
End of 3D Arc	7237.00	90.000	269.746	6780.00	968.71	-281.15	9.00	448.58
End of Tangent	12206.47	90.000	269.746	6780.00	946.68	-5250.58	0.00	5335.24



BGGM (1945.0 to 2016.0) Dip: 66.95° Field: 52759.7 nT
Magnetic North is 8.61 degrees East of True North (at 7/2/2014)

To correct azimuth from Magnetic to True add 8.61 degrees



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RANCHO WATER VALLEY 10 (REV-B.0) PWP

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REFERENCE WELLPATH IDENTIFICATION			
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Area	COLORADO	Well	RANCHO WATER VALLEY 10
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	RANCHO WATER VALLEY 10 PWB
Facility	SEC.04-T05N-R67W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.0.0
North Reference	True	User	Painsetr
Scale	0.999962	Report Generated	7/31/2014 at 9:43:22 AM
Convergence at slot	n/a	Database/Source file	WA_Denver/RANCHO_WATER_VALLEY_10_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-257.57	-74.88	3170351.46	1401819.60	40°26'05.219"N	104°53'16.904"W
Facility Reference Pt			3170424.56	1402077.67	40°26'07.764"N	104°53'15.936"W
Field Reference Pt			3185481.27	1419166.81	40°28'55.560"N	104°49'59.556"W

WELLPATH DATUM			
Calculation method	Minimum curvature	RIG (RKB) to Facility Vertical Datum	4799.00ft
Horizontal Reference Pt	Slot	RIG (RKB) to Mean Sea Level	4799.00ft
Vertical Reference Pt	RIG (RKB)	RIG (RKB) to Mud Line at Slot (SLOT#07 RANCHO WATER VALLEY 10(475'FNL & 274'FEL,SEC.04))	4799.00ft
MD Reference Pt	RIG (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	280.22°



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Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	RANCHO WATER VALLEY 10 PWB
Facility	SEC.04-T05N-R67W		

WELLPATH DATA (128 stations) † = interpolated/extrapolated station								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
0.00†	0.000	22.477	0.00	0.00	0.00	0.00	0.00	
24.00	0.000	22.477	24.00	0.00	0.00	0.00	0.00	Tie On
124.00†	0.000	22.477	124.00	0.00	0.00	0.00	0.00	
224.00†	0.000	22.477	224.00	0.00	0.00	0.00	0.00	
324.00†	0.000	22.477	324.00	0.00	0.00	0.00	0.00	
424.00†	0.000	22.477	424.00	0.00	0.00	0.00	0.00	
524.00†	0.000	22.477	524.00	0.00	0.00	0.00	0.00	
624.00†	0.000	22.477	624.00	0.00	0.00	0.00	0.00	
724.00†	0.000	22.477	724.00	0.00	0.00	0.00	0.00	
824.00†	0.000	22.477	824.00	0.00	0.00	0.00	0.00	
850.00	0.000	22.477	850.00	0.00	0.00	0.00	0.00	End of Tangent
924.00†	1.480	22.477	923.99	-0.20	0.88	0.37	2.00	
1024.00†	3.480	22.477	1023.89	-1.12	4.88	2.02	2.00	
1124.00†	5.480	22.477	1123.58	-2.78	12.10	5.01	2.00	
1224.00†	7.480	22.477	1222.94	-5.18	22.53	9.32	2.00	
1324.00†	9.480	22.477	1321.84	-8.31	36.15	14.96	2.00	
1375.70	10.514	22.477	1372.75	-10.21	44.44	18.39	2.00	End of Build
1424.00†	10.514	22.477	1420.24	-12.08	52.59	21.76	0.00	
1524.00†	10.514	22.477	1518.56	-15.96	69.45	28.73	0.00	
1624.00†	10.514	22.477	1616.89	-19.83	86.31	35.71	0.00	
1724.00†	10.514	22.477	1715.21	-23.70	103.17	42.69	0.00	
1824.00†	10.514	22.477	1813.53	-27.58	120.03	49.66	0.00	
1924.00†	10.514	22.477	1911.85	-31.45	136.90	56.64	0.00	
2024.00†	10.514	22.477	2010.17	-35.32	153.76	63.62	0.00	
2124.00†	10.514	22.477	2108.49	-39.20	170.62	70.59	0.00	
2224.00†	10.514	22.477	2206.81	-43.07	187.48	77.57	0.00	
2324.00†	10.514	22.477	2305.13	-46.94	204.34	84.54	0.00	
2424.00†	10.514	22.477	2403.45	-50.82	221.20	91.52	0.00	
2524.00†	10.514	22.477	2501.78	-54.69	238.06	98.50	0.00	
2624.00†	10.514	22.477	2600.10	-58.57	254.92	105.47	0.00	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	EXTRACTION OIL & GAS	Slot	SLOT#07 RANCHO WATER VALLEY 10(475'FNL & 274'FEL,SEC.04)
Area	COLORADO	Well	RANCHO WATER VALLEY 10
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	RANCHO WATER VALLEY 10 PWB
Facility	SEC.04-T05N-R67W		

WELLPATH DATA (128 stations) † = interpolated/extrapolated station								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
2724.00†	10.514	22.477	2698.42	-62.44	271.79	112.45	0.00	
2824.00†	10.514	22.477	2796.74	-66.31	288.65	119.42	0.00	
2924.00†	10.514	22.477	2895.06	-70.19	305.51	126.40	0.00	
3024.00†	10.514	22.477	2993.38	-74.06	322.37	133.38	0.00	
3124.00†	10.514	22.477	3091.70	-77.93	339.23	140.35	0.00	
3224.00†	10.514	22.477	3190.02	-81.81	356.09	147.33	0.00	
3324.00†	10.514	22.477	3288.34	-85.68	372.95	154.31	0.00	
3424.00†	10.514	22.477	3386.66	-89.55	389.81	161.28	0.00	
3524.00†	10.514	22.477	3484.99	-93.43	406.67	168.26	0.00	
3624.00†	10.514	22.477	3583.31	-97.30	423.54	175.23	0.00	
3724.00†	10.514	22.477	3681.63	-101.17	440.40	182.21	0.00	
3824.00†	10.514	22.477	3779.95	-105.05	457.26	189.19	0.00	
3924.00†	10.514	22.477	3878.27	-108.92	474.12	196.16	0.00	
4024.00†	10.514	22.477	3976.59	-112.80	490.98	203.14	0.00	
4124.00†	10.514	22.477	4074.91	-116.67	507.84	210.12	0.00	
4224.00†	10.514	22.477	4173.23	-120.54	524.70	217.09	0.00	
4324.00†	10.514	22.477	4271.55	-124.42	541.56	224.07	0.00	
4424.00†	10.514	22.477	4369.88	-128.29	558.43	231.04	0.00	
4524.00†	10.514	22.477	4468.20	-132.16	575.29	238.02	0.00	
4624.00†	10.514	22.477	4566.52	-136.04	592.15	245.00	0.00	
4724.00†	10.514	22.477	4664.84	-139.91	609.01	251.97	0.00	
4824.00†	10.514	22.477	4763.16	-143.78	625.87	258.95	0.00	
4924.00†	10.514	22.477	4861.48	-147.66	642.73	265.92	0.00	
5024.00†	10.514	22.477	4959.80	-151.53	659.59	272.90	0.00	
5124.00†	10.514	22.477	5058.12	-155.41	676.45	279.88	0.00	
5224.00†	10.514	22.477	5156.44	-159.28	693.32	286.85	0.00	
5324.00†	10.514	22.477	5254.77	-163.15	710.18	293.83	0.00	
5424.00†	10.514	22.477	5353.09	-167.03	727.04	300.81	0.00	
5524.00†	10.514	22.477	5451.41	-170.90	743.90	307.78	0.00	
5624.00†	10.514	22.477	5549.73	-174.77	760.76	314.76	0.00	



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Area	COLORADO	Well	RANCHO WATER VALLEY 10
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	RANCHO WATER VALLEY 10 PWB
Facility	SEC.04-T05N-R67W		

WELLPATH DATA (128 stations) † = interpolated/extrapolated station								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
5724.00†	10.514	22.477	5648.05	-178.65	777.62	321.73	0.00	
5824.00†	10.514	22.477	5746.37	-182.52	794.48	328.71	0.00	
5924.00†	10.514	22.477	5844.69	-186.39	811.34	335.69	0.00	
6024.00†	10.514	22.477	5943.01	-190.27	828.21	342.66	0.00	
6124.00†	10.514	22.477	6041.33	-194.14	845.07	349.64	0.00	
6192.07	10.514	22.477	6108.26	-196.78	856.55	354.39	0.00	End of Tangent
6224.00†	9.783	6.646	6139.70	-197.23	861.93	355.82	9.00	
6324.00†	12.453	320.563	6238.00	-188.46	878.73	349.94	9.00	
6424.00†	19.362	298.897	6334.19	-164.49	895.10	328.53	9.00	
6524.00†	27.478	288.962	6425.91	-125.91	910.64	292.13	9.00	
6624.00†	35.994	283.376	6510.90	-73.66	924.97	241.62	9.00	
6724.00†	44.679	279.714	6587.06	-9.03	937.72	178.24	9.00	
6824.00†	53.451	277.036	6652.52	66.39	948.60	103.57	9.00	
6924.00†	62.269	274.909	6705.68	150.73	957.32	19.44	9.00	
7024.00†	71.116	273.103	6745.21	241.93	963.68	-72.08	9.00	
7124.00†	79.978	271.480	6770.14	337.74	967.52	-168.74	9.00	
7224.00†	88.847	269.943	6779.87	435.79	968.75	-268.16	9.00	
7237.00	90.000	269.746	6780.00 ¹	448.58	968.71	-281.15	9.00	End of 3D Arc
7324.00†	90.000	269.746	6780.00	534.13	968.33	-368.15	0.00	
7424.00†	90.000	269.746	6780.00	632.46	967.88	-468.15	0.00	
7524.00†	90.000	269.746	6780.00	730.80	967.44	-568.15	0.00	
7624.00†	90.000	269.746	6780.00	829.13	967.00	-668.15	0.00	
7724.00†	90.000	269.746	6780.00	927.47	966.55	-768.15	0.00	
7824.00†	90.000	269.746	6780.00	1025.80	966.11	-868.15	0.00	
7924.00†	90.000	269.746	6780.00	1124.13	965.67	-968.15	0.00	
8024.00†	90.000	269.746	6780.00	1222.47	965.22	-1068.15	0.00	
8124.00†	90.000	269.746	6780.00	1320.80	964.78	-1168.15	0.00	
8224.00†	90.000	269.746	6780.00	1419.13	964.34	-1268.14	0.00	
8324.00†	90.000	269.746	6780.00	1517.47	963.89	-1368.14	0.00	
8424.00†	90.000	269.746	6780.00	1615.80	963.45	-1468.14	0.00	



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REFERENCE WELLPATH IDENTIFICATION			
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Area	COLORADO	Well	RANCHO WATER VALLEY 10
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	RANCHO WATER VALLEY 10 PWB
Facility	SEC.04-T05N-R67W		

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MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
8524.00†	90.000	269.746	6780.00	1714.13	963.01	-1568.14	0.00	
8624.00†	90.000	269.746	6780.00	1812.47	962.56	-1668.14	0.00	
8724.00†	90.000	269.746	6780.00	1910.80	962.12	-1768.14	0.00	
8824.00†	90.000	269.746	6780.00	2009.13	961.68	-1868.14	0.00	
8924.00†	90.000	269.746	6780.00	2107.47	961.23	-1968.14	0.00	
9024.00†	90.000	269.746	6780.00	2205.80	960.79	-2068.14	0.00	
9124.00†	90.000	269.746	6780.00	2304.13	960.35	-2168.14	0.00	
9224.00†	90.000	269.746	6780.00	2402.47	959.90	-2268.13	0.00	
9324.00†	90.000	269.746	6780.00	2500.80	959.46	-2368.13	0.00	
9424.00†	90.000	269.746	6780.00	2599.14	959.02	-2468.13	0.00	
9524.00†	90.000	269.746	6780.00	2697.47	958.57	-2568.13	0.00	
9624.00†	90.000	269.746	6780.00	2795.80	958.13	-2668.13	0.00	
9724.00†	90.000	269.746	6780.00	2894.14	957.69	-2768.13	0.00	
9824.00†	90.000	269.746	6780.00	2992.47	957.24	-2868.13	0.00	
9924.00†	90.000	269.746	6780.00	3090.80	956.80	-2968.13	0.00	
10024.00†	90.000	269.746	6780.00	3189.14	956.36	-3068.13	0.00	
10124.00†	90.000	269.746	6780.00	3287.47	955.91	-3168.13	0.00	
10224.00†	90.000	269.746	6780.00	3385.80	955.47	-3268.12	0.00	
10324.00†	90.000	269.746	6780.00	3484.14	955.03	-3368.12	0.00	
10424.00†	90.000	269.746	6780.00	3582.47	954.58	-3468.12	0.00	
10524.00†	90.000	269.746	6780.00	3680.80	954.14	-3568.12	0.00	
10624.00†	90.000	269.746	6780.00	3779.14	953.70	-3668.12	0.00	
10724.00†	90.000	269.746	6780.00	3877.47	953.26	-3768.12	0.00	
10824.00†	90.000	269.746	6780.00	3975.81	952.81	-3868.12	0.00	
10924.00†	90.000	269.746	6780.00	4074.14	952.37	-3968.12	0.00	
11024.00†	90.000	269.746	6780.00	4172.47	951.93	-4068.12	0.00	
11124.00†	90.000	269.746	6780.00	4270.81	951.48	-4168.12	0.00	
11224.00†	90.000	269.746	6780.00	4369.14	951.04	-4268.12	0.00	
11324.00†	90.000	269.746	6780.00	4467.47	950.60	-4368.11	0.00	
11424.00†	90.000	269.746	6780.00	4565.81	950.15	-4468.11	0.00	



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WELLPATH DATA (128 stations) † = interpolated/extrapolated station								
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
11524.00†	90.000	269.746	6780.00	4664.14	949.71	-4568.11	0.00	
11624.00†	90.000	269.746	6780.00	4762.47	949.27	-4668.11	0.00	
11724.00†	90.000	269.746	6780.00	4860.81	948.82	-4768.11	0.00	
11824.00†	90.000	269.746	6780.00	4959.14	948.38	-4868.11	0.00	
11924.00†	90.000	269.746	6780.00	5057.47	947.94	-4968.11	0.00	
12024.00†	90.000	269.746	6780.00	5155.81	947.49	-5068.11	0.00	
12124.00†	90.000	269.746	6780.00	5254.14	947.05	-5168.11	0.00	
12206.47	90.000	269.746	6780.00 ²	5335.24	946.68	-5250.58	0.00	End of Tangent

HOLE & CASING SECTIONS -									
Ref Wellbore: RANCHO WATER VALLEY 10 PWB					Ref Wellpath: RANCHO WATER VALLEY 10 (REV-B.0) PWP				
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
7in Casing Intermediate	24.00	7237.00	7213.00	24.00	6780.00	0.00	0.00	968.71	-281.15



Planned Wellpath Report

RANCHO WATER VALLEY 10 (REV-B.0) PWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	EXTRACTION OIL & GAS	Slot	SLOT#07 RANCHO WATER VALLEY 10(475'FNL & 274'FEL,SEC.04)
Area	COLORADO	Well	RANCHO WATER VALLEY 10
Field	WELD COUNTY (NAD83/TRUE NORTH)	Wellbore	RANCHO WATER VALLEY 10 PWB
Facility	SEC.04-T05N-R67W		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
RANCHO WATER VALLEY PAD N1/2 SECTION 04		0.00	-196.00	-1.39	3170351.42	1401623.60	40°26'03.282"N	104°53'16.922"W	polygon
RANCHO WATER VALLEY PAD S1/2 SECTION 33		0.00	-196.00	-1.39	3170351.42	1401623.60	40°26'03.282"N	104°53'16.922"W	polygon
2) RANCHO WATER VALLEY 10 BHL ON PLAT REV-1(495'FSL & 315'FEL,SEC.32)	12206.47	6780.00	946.68	-5250.58	3165094.69	1402729.99	40°26'14.568"N	104°54'24.808"W	point
1) RANCHO WATER VALLEY 10 LANDING	7237.00	6780.00	968.71	-281.15	3170063.64	1402786.31	40°26'14.791"N	104°53'20.540"W	point

SURVEY PROGRAM - Ref Wellbore: RANCHO WATER VALLEY 10 PWB Ref Wellpath: RANCHO WATER VALLEY 10 (REV-B.0) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.00	13000.00	NaviTrak (Standard)		RANCHO WATER VALLEY 10 PWB