



Ursa Operating Company, LLC

Rockies Region

B&V

B&V 14B-07-07-95

Wellbore #1

Design: Actual

End of Well Report

24 February, 2017



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well B&V 14B-07-07-95
Project:	Rockies Region	TVD Reference:	B&V 14B-07-07-95 @ 5101.0usft (Plan KB)
Site:	B&V	MD Reference:	B&V 14B-07-07-95 @ 5101.0usft (Plan KB)
Well:	B&V 14B-07-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Project		Rockies Region	
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		Using geodetic scale factor

Site		B&V							
Site Position:		Northing:		1,598,935.06	usft	Latitude:		39.450164128	
From:	Lat/Long	Easting:		2,280,801.73	usft	Longitude:		-108.047211920	
Position Uncertainty:		0.0	usft	Slot Radius:		13-3/16	"	Grid Convergence:	-1.61 °

Well		B&V 14B-07-07-95, SHL LAT: 39.450212334 LONG: -108.047261680				
Well Position	+N/-S	0.0 usft	Northing:	1,598,953.01 usft	Latitude:	39.450212334
	+E/-W	0.0 usft	Easting:	2,280,788.18 usft	Longitude:	-108.047261680
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,101.0 usft	Ground Level:	5,084.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2/24/2017	9.75	65.55	51,539

Design		Actual			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:		Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
		0.0	0.0	0.0	175.03

Survey Program		Date	2/24/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
80.0	6,386.0	Actual (Wellbore #1)	MWD	MWD - Standard	

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Well:	B&V 14B-07-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
80.0	0.17	35.16	80.0	-0.1	0.1	0.1	0.21	0.21	0.00	
110.0	0.35	105.66	110.0	-0.1	0.1	0.2	1.11	0.60	235.00	
139.0	0.13	19.32	139.0	-0.1	0.1	0.3	1.26	-0.76	-297.72	
169.0	0.35	107.43	169.0	-0.1	0.1	0.4	1.23	0.73	293.70	
199.0	0.66	39.84	199.0	-0.2	0.2	0.6	2.06	1.03	-225.30	
229.0	0.18	87.87	229.0	-0.3	0.4	0.7	1.85	-1.60	160.10	
260.0	0.13	47.31	260.0	-0.3	0.4	0.8	0.38	-0.16	-130.84	
291.0	0.13	32.81	291.0	-0.4	0.4	0.9	0.11	0.00	-46.77	
321.0	0.53	18.91	321.0	-0.5	0.6	0.9	1.35	1.33	-46.33	
352.0	0.59	78.01	352.0	-0.7	0.8	1.1	1.79	0.19	190.65	
382.0	0.57	30.08	382.0	-0.8	0.9	1.3	1.57	-0.07	-159.77	
413.0	0.69	74.03	413.0	-1.0	1.1	1.6	1.56	0.39	141.77	
443.0	0.75	69.59	443.0	-1.1	1.2	2.0	0.27	0.20	-14.80	
474.0	0.04	179.98	474.0	-1.1	1.3	2.1	2.47	-2.29	356.10	
504.0	0.26	261.81	504.0	-1.1	1.3	2.1	0.86	0.73	272.77	
535.0	0.31	229.59	535.0	-1.0	1.2	1.9	0.53	0.16	-103.94	
565.0	0.66	196.02	565.0	-0.8	1.0	1.8	1.46	1.17	-111.90	
596.0	0.70	201.03	596.0	-0.5	0.6	1.7	0.23	0.13	16.16	
626.0	0.81	249.73	626.0	-0.3	0.4	1.5	2.10	0.37	162.33	
657.0	0.97	234.16	657.0	-0.1	0.2	1.0	0.93	0.52	-50.23	
688.0	0.48	206.44	688.0	0.2	-0.1	0.8	1.90	-1.58	-89.42	
718.0	0.53	213.73	718.0	0.4	-0.3	0.6	0.27	0.17	24.30	
749.0	0.44	218.61	749.0	0.6	-0.5	0.5	0.32	-0.29	15.74	
780.0	0.92	242.78	780.0	0.8	-0.8	0.2	1.77	1.55	77.97	
810.0	0.62	241.59	810.0	0.9	-0.9	-0.2	1.00	-1.00	-3.97	
841.0	1.06	215.26	841.0	1.2	-1.3	-0.5	1.85	1.42	-84.94	

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Site:	B&V	MD Reference:	B&V 14B-07-07-95 @ 5101.0usft (Plan KB)
Well:	B&V 14B-07-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
883.0	0.53	220.59	883.0	1.6	-1.7	-0.8	1.27	-1.26	12.69	
926.0	0.62	181.43	926.0	2.0	-2.1	-1.0	0.92	0.21	-91.07	
969.0	0.92	187.98	969.0	2.6	-2.7	-1.0	0.73	0.70	15.23	
1,012.0	1.10	192.90	1,011.9	3.3	-3.4	-1.2	0.46	0.42	11.44	
1,054.0	2.50	177.70	1,053.9	4.6	-4.7	-1.2	3.49	3.33	-36.19	
1,097.0	3.96	175.94	1,096.9	7.0	-7.1	-1.1	3.40	3.40	-4.09	
1,140.0	5.19	168.42	1,139.7	10.4	-10.5	-0.6	3.18	2.86	-17.49	
1,182.0	6.11	172.07	1,181.5	14.6	-14.6	0.1	2.35	2.19	8.69	
1,225.0	7.12	175.19	1,224.2	19.5	-19.5	0.6	2.49	2.35	7.26	
1,268.0	8.34	179.15	1,266.8	25.3	-25.3	0.9	3.09	2.84	9.21	
1,310.0	10.06	178.40	1,308.3	32.0	-32.0	1.1	4.11	4.10	-1.79	
1,353.0	11.47	175.76	1,350.5	40.0	-40.0	1.5	3.47	3.28	-6.14	
1,396.0	13.36	175.98	1,392.5	49.3	-49.3	2.2	4.40	4.40	0.51	
1,438.0	14.94	174.62	1,433.3	59.5	-59.5	3.0	3.84	3.76	-3.24	
1,481.0	16.22	174.66	1,474.7	71.1	-71.0	4.1	2.98	2.98	0.09	
1,524.0	17.84	173.74	1,515.8	83.7	-83.5	5.4	3.82	3.77	-2.14	
1,567.0	19.34	174.36	1,556.5	97.4	-97.1	6.8	3.52	3.49	1.44	
1,609.0	20.51	172.94	1,596.0	111.7	-111.4	8.4	3.01	2.79	-3.38	
1,652.0	21.67	173.96	1,636.1	127.1	-126.7	10.1	2.83	2.70	2.37	
1,700.0	21.93	173.70	1,680.7	145.0	-144.5	12.0	0.58	0.54	-0.54	
Last PZD Surface Survey										
1,758.0	21.53	172.73	1,734.6	166.4	-165.8	14.6	0.93	-0.69	-1.67	
1,840.0	20.52	169.83	1,811.1	195.8	-194.9	19.0	1.77	-1.23	-3.54	
1,929.0	22.06	174.57	1,894.1	228.0	-226.9	23.4	2.59	1.73	5.33	
2,014.0	21.45	178.93	1,973.0	259.5	-258.3	25.2	2.03	-0.72	5.13	
2,099.0	23.03	182.09	2,051.7	291.5	-290.4	24.8	2.33	1.86	3.72	
2,185.0	23.12	176.55	2,130.8	325.1	-324.1	25.2	2.53	0.10	-6.44	

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Site:	B&V	MD Reference:	B&V 14B-07-07-95 @ 5101.0usft (Plan KB)
Well:	B&V 14B-07-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
2,270.0	22.85	176.90	2,209.1	358.3	-357.3	27.1	0.36	-0.32	0.41	
2,356.0	22.54	172.82	2,288.4	391.4	-390.3	30.1	1.87	-0.36	-4.74	
2,441.0	22.10	171.94	2,367.1	423.7	-422.3	34.4	0.65	-0.52	-1.04	
2,527.0	23.42	175.15	2,446.4	456.9	-455.3	38.1	2.11	1.53	3.73	
2,612.0	22.24	175.59	2,524.7	489.9	-488.2	40.8	1.40	-1.39	0.52	
2,698.0	22.68	174.49	2,604.2	522.7	-520.9	43.6	0.71	0.51	-1.28	
2,783.0	22.50	175.28	2,682.7	555.4	-553.4	46.5	0.42	-0.21	0.93	
2,869.0	21.14	173.48	2,762.5	587.4	-585.3	49.6	1.76	-1.58	-2.09	
2,954.0	22.15	173.65	2,841.5	618.7	-616.4	53.1	1.19	1.19	0.20	
3,039.0	22.54	174.00	2,920.1	651.0	-648.5	56.6	0.48	0.46	0.41	
3,125.0	22.28	175.76	2,999.6	683.8	-681.2	59.5	0.84	-0.30	2.05	
3,210.0	22.41	175.50	3,078.2	716.1	-713.4	62.0	0.19	0.15	-0.31	
3,296.0	22.68	174.79	3,157.7	749.1	-746.3	64.8	0.45	0.31	-0.83	
3,381.0	21.05	174.49	3,236.5	780.7	-777.8	67.8	1.92	-1.92	-0.35	
3,466.0	19.51	172.11	3,316.3	810.2	-807.0	71.2	2.05	-1.81	-2.80	
3,552.0	17.67	172.95	3,397.8	837.6	-834.2	74.7	2.16	-2.14	0.98	
3,637.0	16.48	172.91	3,479.0	862.5	-859.0	77.8	1.40	-1.40	-0.05	
3,722.0	15.07	172.25	3,560.8	885.6	-881.9	80.8	1.67	-1.66	-0.78	
3,808.0	13.84	172.42	3,644.1	907.0	-903.2	83.7	1.43	-1.43	0.20	
3,893.0	11.07	173.17	3,727.1	925.3	-921.4	86.0	3.26	-3.26	0.88	
3,978.0	9.37	172.60	3,810.8	940.4	-936.3	87.8	2.00	-2.00	-0.67	
4,063.0	6.37	170.62	3,894.9	952.0	-947.8	89.5	3.54	-3.53	-2.33	
4,149.0	4.53	153.00	3,980.6	959.9	-955.6	91.8	2.87	-2.14	-20.49	
4,229.1	1.84	154.81	4,060.5	964.1	-959.6	93.8	3.37	-3.36	2.26	
B&V 14B-07-07-95 TGT										
4,234.0	1.67	155.11	4,065.4	964.2	-959.7	93.9	3.37	-3.36	6.12	
4,320.0	1.76	164.34	4,151.4	966.7	-962.1	94.7	0.34	0.10	10.73	

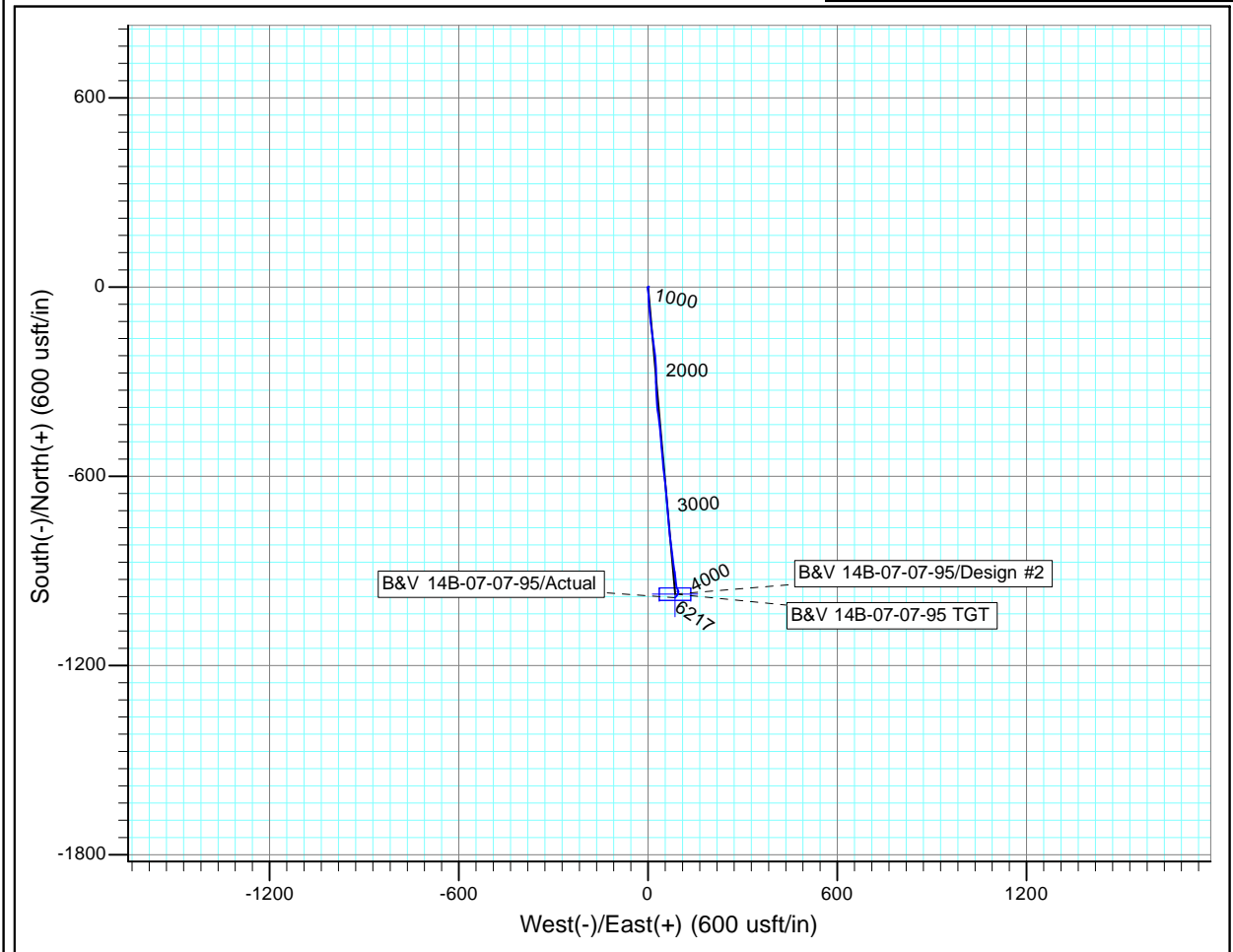
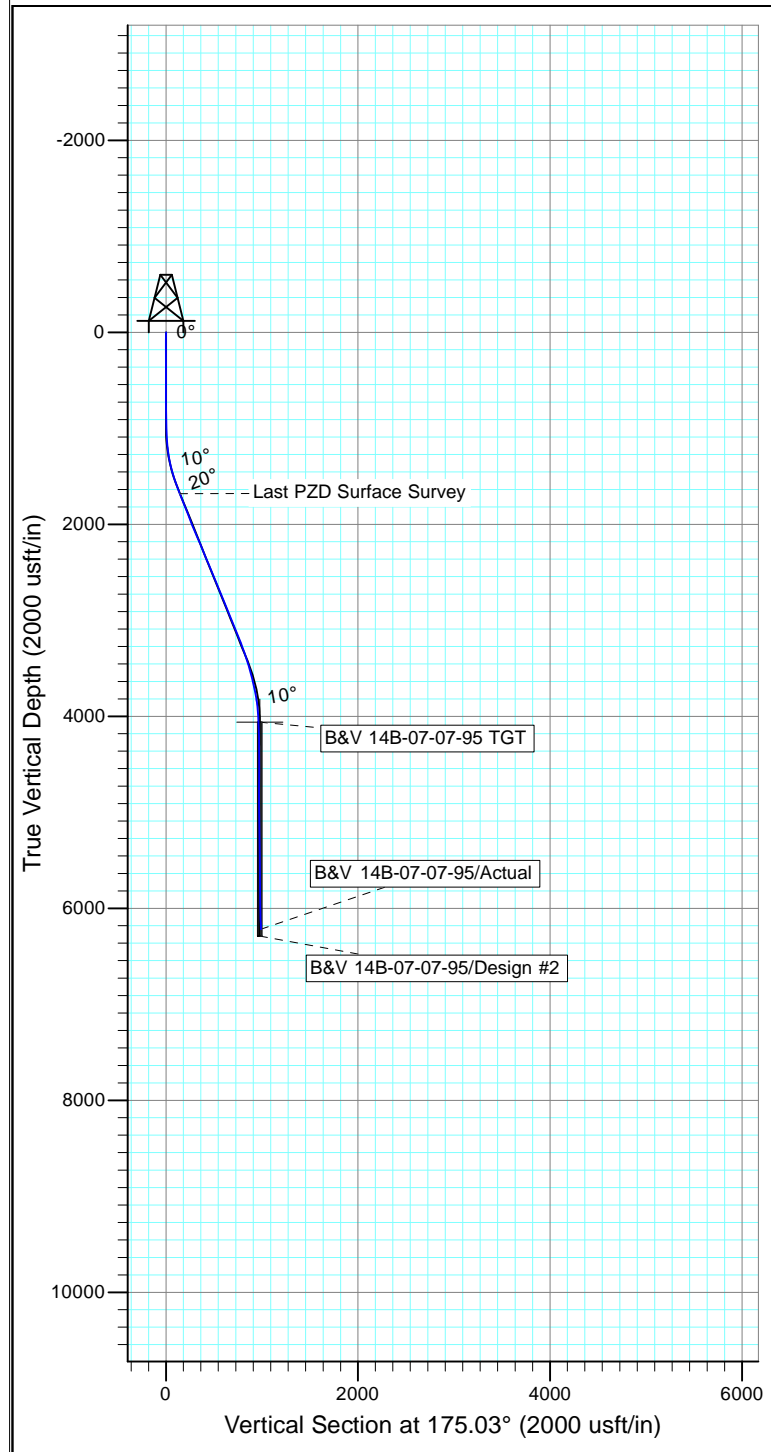
Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well B&V 14B-07-07-95
Project:	Rockies Region	TVD Reference:	B&V 14B-07-07-95 @ 5101.0usft (Plan KB)
Site:	B&V	MD Reference:	B&V 14B-07-07-95 @ 5101.0usft (Plan KB)
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Design:	Actual	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
4,405.0	1.19	163.63	4,236.4	968.8	-964.2	95.3	0.67	-0.67	-0.84	
4,490.0	0.26	139.42	4,321.3	969.9	-965.2	95.7	1.13	-1.09	-28.48	
4,576.0	0.22	84.84	4,407.3	970.0	-965.3	96.0	0.26	-0.05	-63.47	
4,661.0	0.26	178.93	4,492.3	970.2	-965.5	96.2	0.41	0.05	110.69	
4,746.0	0.92	245.77	4,577.3	970.6	-966.0	95.6	1.00	0.78	78.64	
4,832.0	0.75	57.94	4,663.3	970.6	-966.0	95.4	1.94	-0.20	200.20	
4,917.0	0.53	0.02	4,748.3	970.0	-965.3	95.9	0.76	-0.26	-68.14	
5,002.0	0.60	268.42	4,833.3	969.5	-964.9	95.4	0.95	0.08	-107.76	
5,088.0	0.62	252.09	4,919.3	969.6	-965.1	94.5	0.20	0.02	-18.99	
5,174.0	1.01	269.58	5,005.3	969.7	-965.2	93.3	0.53	0.45	20.34	
5,259.0	2.11	125.62	5,090.3	970.6	-966.1	93.9	3.51	1.29	-169.36	
5,345.0	1.23	153.96	5,176.3	972.5	-967.9	95.5	1.37	-1.02	32.95	
5,430.0	1.67	193.47	5,261.2	974.5	-969.9	95.7	1.25	0.52	46.48	
5,515.0	0.92	226.91	5,346.2	976.1	-971.6	94.9	1.22	-0.88	39.34	
5,600.0	0.44	189.87	5,431.2	976.9	-972.4	94.3	0.74	-0.56	-43.58	
5,686.0	0.40	127.95	5,517.2	977.4	-972.9	94.5	0.50	-0.05	-72.00	
5,771.0	0.48	150.27	5,602.2	977.9	-973.4	94.9	0.22	0.09	26.26	
5,857.0	0.31	26.92	5,688.2	978.0	-973.5	95.2	0.81	-0.20	-143.43	
5,942.0	0.79	234.30	5,773.2	978.2	-973.6	94.8	1.26	0.56	-179.55	
6,027.0	0.83	202.08	5,858.2	979.0	-974.5	94.1	0.53	0.05	-37.91	
6,113.0	1.80	225.64	5,944.2	980.4	-976.0	92.9	1.27	1.13	27.40	
6,198.0	2.33	217.64	6,029.1	982.5	-978.3	90.9	0.71	0.62	-9.41	
6,283.0	2.86	220.72	6,114.0	985.3	-981.3	88.5	0.64	0.62	3.62	
6,326.0	2.72	213.73	6,157.0	986.8	-983.0	87.2	0.85	-0.33	-16.26	
Last PZD Survey										
6,386.0	2.72	213.73	6,216.9	989.1	-985.3	85.6	0.00	0.00	0.00	
Straightline Projection to TD										

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Site:	B&V	MD Reference:	B&V 14B-07-07-95 @ 5101.0usft (Plan KB)
Well:	B&V 14B-07-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,700.0	1,680.7	-144.5	12.0	Last PZD Surface Survey
6,326.0	6,157.0	-983.0	87.2	Last PZD Survey
6,386.0	6,216.9	-985.3	85.6	Straightline Projection to TD

Checked By: _____	Approved By: _____	Date: _____
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Design: Actual (B&V 14B-07-07-95/Wellbore #1)

Created By: Derek Stephens Date: 15:43, February 24 2017

THIS SURVEY IS CORRECT TO THE BEST OF
 MY KNOWLEDGE AND IS SUPPORTED
 BY ACTUAL FIELD DATA