

30-015-38117

Weatherford International Ltd.

WFT Survey Report X & Y's



Weatherford

Company: BOPCO, L.P.		Date: 1/31/2011		Time: 07:29:45		Page: 1	
Field: Eddy County, NM (Nad 83)		Co-ordinate(NE) Reference: Well: JRU #119H, Grid North					
Site: JRU #119H		Vertical (TVD) Reference: SITE 3345.0					
Well: JRU #119H		Section (VS) Reference: Well (0.00N,0.00E,271.91Azi)					
Wellpath: 1		Survey Calculation Method: Minimum Curvature		Db: Sybase			

Survey: Wff Svy	Start Date: 1/4/2011
Company: Weatherford International Ltd.	Engineer: Russell W. Joyner
Tool: MWD;MWD - Standard	Tied-to: User Defined

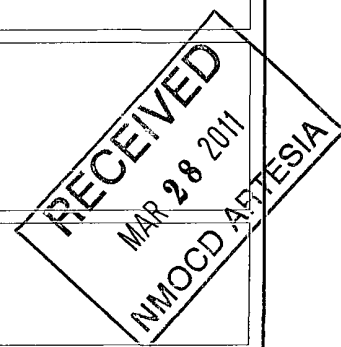
Field: Eddy County, NM (Nad 83)	
Map System: US State Plane Coordinate System 1983	Map Zone: New Mexico, Eastern Zone
Geo Datum: GRS 1980	Coordinate System: Well Centre
Sys Datum: Mean Sea Level	Geomagnetic Model: IGRF2010

Site: JRU #119H	
Site Position:	Northing: 479197.16 ft
From: Map	Easting: 706941.96 ft
Position Uncertainty: 0.00 ft	Latitude: 32 18 58.480 N
Ground Level: 3325.00 ft	Longitude: 103 47 50.153 W
	North Reference: Grid
	Grid Convergence: 0.29 deg

Well: JRU #119H		Slot Name:	
Well Position:	Northing: 479197.16 ft	Latitude: 32 18 58.480 N	
+N/-S 0.00 ft	Easting : 706941.96 ft	Longitude: 103 47 50.153 W	
+E/-W 0.00 ft			
Position Uncertainty: 0.00 ft			

Wellpath: 1		Drilled From: Surface	
Current Datum: SITE	Height 3345.00 ft	Tie-on Depth: 0.00 ft	
Magnetic Data: 1/15/2011		Above System Datum: Mean Sea Level	
Field Strength: 48714 nT		Declination: 7.75 deg	
Vertical Section: Depth From (TVD)	+N/-S	Mag Dip Angle: 60.24 deg	
ft	ft	+E/-W	Direction
		ft	deg
0.00	0.00	0.00	271.91

Survey										
MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
4078.00	0.55	95.17	4077.17	-41.58	-21.73	0.00	20.33	479155.58	706920.23	Csg
7200.00	0.54	200.33	7199.10	-46.68	-15.61	0.03	14.04	479150.48	706926.35	Tie On SDI
7319.00	0.62	198.52	7318.09	-47.82	-16.01	0.07	14.40	479149.35	706925.95	First Wft Svy
7355.00	0.73	211.85	7354.09	-48.20	-16.19	0.53	14.57	479148.97	706925.77	
7448.00	7.72	271.96	7446.79	-48.49	-22.76	7.94	21.13	479148.68	706919.20	
7512.00	15.27	272.03	7509.46	-48.04	-35.49	11.80	33.87	479149.12	706906.47	
7543.00	18.20	272.68	7539.14	-47.67	-44.41	9.47	42.80	479149.49	706897.55	
7575.00	21.42	274.63	7569.25	-46.96	-55.23	10.27	53.63	479150.20	706886.73	
7606.00	24.93	275.00	7597.74	-45.94	-67.38	11.33	65.81	479151.23	706874.57	
7641.00	28.40	273.78	7629.01	-44.74	-83.04	10.04	81.50	479152.42	706858.92	
7673.00	31.89	272.32	7656.68	-43.90	-99.09	11.14	97.57	479153.26	706842.87	
7705.00	35.79	271.35	7683.26	-43.34	-116.89	12.30	115.38	479153.83	706825.06	
7736.00	39.67	270.04	7707.77	-43.12	-135.86	12.78	134.34	479154.05	706806.10	
7768.00	43.99	269.92	7731.61	-43.13	-157.20	13.50	155.67	479154.04	706784.76	
7799.00	48.16	270.15	7753.11	-43.11	-179.52	13.46	177.98	479154.05	706762.44	
7830.00	52.25	270.32	7772.95	-43.01	-203.33	13.20	201.78	479154.15	706738.63	
7862.00	56.63	270.30	7791.55	-42.87	-229.36	13.69	227.80	479154.29	706712.60	
7894.00	60.97	270.37	7808.12	-42.71	-256.72	13.56	255.15	479154.45	706685.24	
7925.00	64.83	270.68	7822.24	-42.46	-284.31	12.48	282.74	479154.71	706657.65	
7957.00	69.61	271.30	7834.63	-41.94	-313.80	15.04	312.23	479155.22	706628.16	
7988.00	73.74	271.11	7844.38	-41.33	-343.22	13.34	341.65	479155.84	706598.74	
8020.00	78.49	271.70	7852.05	-40.56	-374.26	14.95	372.70	479156.60	706567.69	
8051.00	83.17	271.68	7856.99	-39.66	-404.85	15.10	403.30	479157.50	706537.11	
8082.00	87.66	271.01	7859.47	-38.94	-435.73	14.64	434.19	479158.23	706506.23	



Weatherford International Ltd.

WFT Survey Report X & Y's



Weatherford

Company: BOPCO, L.P. Field: Eddy County, NM (Nad 83) Site: JRU #119H Well: JRU #119H Wellpath: 1	Date: 1/31/2011 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Survey Calculation Method:	Time: 07:29:45 Well: JRU #119H, Grid North SITE 3345.0 Well (0.00N,0.00E,271.91Azi) Minimum Curvature	Page: 2 Db: Sybase
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Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
8113.00	90.87	271.82	7859.87	-38.17	-466.71	10.68	465.18	479158.99	706475.24	
8144.00	90.87	272.48	7859.40	-37.01	-497.69	2.13	496.18	479160.16	706444.27	
8175.00	91.08	272.20	7858.87	-35.74	-528.66	1.13	527.17	479161.42	706413.30	
8207.00	91.22	271.59	7858.23	-34.68	-560.63	1.96	559.16	479162.48	706381.32	
8238.00	91.36	272.38	7857.53	-33.61	-591.61	2.59	590.16	479163.55	706350.35	
8270.00	90.94	272.28	7856.89	-32.31	-623.57	1.35	622.15	479164.85	706318.38	
8301.00	90.87	272.83	7856.40	-30.93	-654.54	1.79	653.14	479166.24	706287.42	
8395.00	91.29	272.89	7854.62	-26.24	-748.41	0.45	747.11	479170.92	706193.55	
8488.00	89.97	272.52	7853.60	-21.85	-841.29	1.47	840.10	479175.31	706100.66	
8583.00	91.78	272.60	7852.15	-17.61	-936.18	1.91	935.08	479179.56	706005.77	
8676.00	90.03	272.00	7850.68	-13.88	-1029.09	1.99	1028.06	479183.29	705912.87	
8777.00	89.97	271.07	7850.68	-11.17	-1130.06	0.92	1129.05	479185.99	705811.90	
8840.00	93.04	271.38	7849.03	-9.83	-1193.01	4.89	1192.02	479187.34	705748.95	Int. Casing Pt
8883.00	95.13	271.59	7845.97	-8.71	-1235.89	4.89	1234.91	479188.45	705706.07	
8962.00	97.62	271.08	7837.20	-6.88	-1314.37	3.22	1313.41	479190.28	705627.59	
9043.00	92.16	269.92	7830.29	-6.18	-1395.04	6.89	1394.06	479190.98	705546.92	
9075.00	90.53	270.32	7829.54	-6.12	-1427.03	5.24	1426.03	479191.05	705514.93	
9171.00	89.38	273.60	7829.62	-2.83	-1522.96	3.62	1522.02	479194.33	705419.00	
9267.00	92.41	275.39	7828.12	4.69	-1618.64	3.67	1617.89	479201.85	705323.32	
9364.00	88.83	269.80	7827.07	9.07	-1715.48	6.84	1714.83	479206.24	705226.48	
9461.00	88.40	270.93	7829.41	9.69	-1812.45	1.25	1811.76	479206.86	705129.51	
9556.00	93.09	273.97	7828.18	13.75	-1907.31	5.88	1906.71	479210.91	705034.64	
9653.00	90.68	273.27	7824.99	19.87	-2004.06	2.59	2003.61	479217.03	704937.90	
9748.00	90.25	273.99	7824.22	25.88	-2098.87	0.88	2098.56	479223.05	704843.09	
9844.00	90.37	274.41	7823.70	32.92	-2194.61	0.46	2194.48	479230.08	704747.35	
9941.00	89.94	274.58	7823.44	40.52	-2291.31	0.48	2291.38	479237.68	704650.65	
10036.00	91.17	272.10	7822.51	46.05	-2386.13	2.91	2386.34	479243.21	704555.83	
10133.00	90.25	271.42	7821.31	49.03	-2483.08	1.18	2483.33	479246.19	704458.88	
10228.00	90.06	271.65	7821.06	51.58	-2578.04	0.31	2578.33	479248.74	704363.92	
10324.00	91.85	273.11	7819.46	55.56	-2673.94	2.41	2674.31	479252.72	704268.02	
10419.00	93.77	273.81	7814.80	61.29	-2768.65	2.15	2769.15	479258.45	704173.31	
10515.00	91.05	272.43	7810.76	66.51	-2864.41	3.18	2865.03	479263.67	704077.55	
10612.00	89.94	272.37	7809.92	70.57	-2961.32	1.15	2962.03	479267.73	703980.64	
10708.00	89.51	271.17	7810.38	73.53	-3057.27	1.33	3058.02	479270.69	703884.69	
10804.00	89.38	270.67	7811.31	75.07	-3153.25	0.54	3154.00	479272.24	703788.71	
10900.00	90.37	270.93	7811.52	76.41	-3249.24	1.07	3249.98	479273.58	703692.72	
10995.00	91.30	270.48	7810.14	77.58	-3344.22	1.09	3344.95	479274.75	703597.73	
11090.00	91.85	270.32	7807.53	78.25	-3439.19	0.60	3439.88	479275.41	703502.77	
11187.00	91.85	270.32	7804.40	78.79	-3536.13	0.00	3536.79	479275.95	703405.83	
11282.00	91.67	270.58	7801.48	79.53	-3631.09	0.33	3631.72	479276.70	703310.87	
11378.00	91.67	272.57	7798.68	82.17	-3727.00	2.07	3727.67	479279.33	703214.96	
11473.00	90.99	272.74	7796.48	86.57	-3821.88	0.74	3822.64	479283.73	703120.08	
11569.00	91.97	272.60	7794.00	91.04	-3917.74	1.03	3918.59	479288.20	703024.22	
11665.00	90.06	273.30	7792.30	95.98	-4013.59	2.12	4014.56	479293.14	702928.37	
11761.00	89.63	275.15	7792.56	103.05	-4109.33	1.98	4110.48	479300.21	702832.63	
11857.00	89.81	275.84	7793.03	112.24	-4204.88	0.74	4206.29	479309.41	702737.08	
11953.00	90.19	276.31	7793.03	122.40	-4300.34	0.63	4302.03	479319.57	702641.62	
12048.00	89.75	272.57	7793.08	129.76	-4395.04	3.96	4396.92	479326.92	702546.92	
12144.00	90.62	271.31	7792.77	133.01	-4490.98	1.59	4492.92	479330.17	702450.98	
12236.00	89.07	270.64	7793.01	134.57	-4582.97	1.84	4584.90	479331.74	702358.99	
12331.00	91.05	271.12	7792.91	136.03	-4677.95	2.14	4679.88	479333.19	702264.01	
12427.00	90.19	269.79	7791.88	136.79	-4773.94	1.65	4775.84	479333.96	702168.02	

Weatherford International Ltd.

WFT Survey Report X & Y's



Weatherford

Company: BOPCO, L.P.	Date: 1/31/2011	Time: 07:29:45	Page: 3
Field: Eddy County, NM (Nad 83)	Co-ordinate(NE) Reference: Well: JRU #119H, Grid North		
Site: JRU #119H	Vertical (TVD) Reference: SITE 3345.0		
Well: JRU #119H	Section (VS) Reference: Well (0.00N,0.00E,271.91Azi)		
Wellpath: 1	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
12522.00	89.51	269.72	7792.12	136.39	-4868.94	0.72	4870.78	479333.55	702073.02	
12617.00	89.82	270.47	7792.68	136.54	-4963.93	0.85	4965.72	479333.71	701978.03	
12709.00	90.00	271.36	7792.82	138.01	-5055.92	0.99	5057.71	479335.18	701886.04	
12801.00	91.42	274.03	7791.68	142.34	-5147.80	3.29	5149.68	479339.50	701794.16	
12893.00	91.54	276.46	7789.31	150.75	-5239.38	2.64	5241.49	479347.91	701702.58	
12985.00	91.29	277.50	7787.04	161.92	-5330.67	1.16	5333.10	479359.08	701611.29	
13077.00	91.91	278.59	7784.47	174.79	-5421.72	1.36	5424.54	479371.95	701520.23	
13169.00	91.60	277.12	7781.65	187.36	-5512.82	1.63	5516.00	479384.52	701429.14	
13261.00	90.80	275.53	7779.72	197.49	-5604.23	1.93	5607.70	479394.65	701337.73	
13352.00	91.17	273.23	7778.16	204.44	-5694.95	2.56	5698.60	479401.60	701247.01	
13444.00	91.17	272.47	7776.28	209.01	-5786.81	0.83	5790.57	479406.18	701155.15	
13536.00	91.11	271.44	7774.45	212.15	-5878.74	1.12	5882.55	479409.31	701063.22	
13628.00	91.15	272.79	7772.63	215.55	-5970.66	1.47	5974.52	479412.71	700971.30	
13720.00	91.23	272.78	7770.72	220.01	-6062.53	0.09	6066.49	479417.18	700879.43	
13812.00	91.48	274.50	7768.55	225.85	-6154.31	1.89	6158.42	479423.02	700787.64	
13904.00	91.66	276.85	7766.03	234.95	-6245.82	2.56	6250.18	479432.11	700696.14	
13997.00	91.54	275.35	7763.43	244.83	-6338.26	1.62	6342.90	479441.99	700603.70	
14089.00	91.29	276.21	7761.16	254.09	-6429.76	0.97	6434.66	479451.25	700512.20	
14185.00	91.48	275.79	7758.84	264.12	-6525.21	0.48	6530.39	479461.28	700416.75	
14281.00	91.73	277.52	7756.15	275.24	-6620.52	1.82	6626.02	479472.40	700321.44	
14377.00	90.99	274.20	7753.87	285.04	-6715.98	3.54	6721.75	479482.20	700225.98	
14472.00	90.62	272.62	7752.53	290.69	-6810.80	1.71	6816.70	479487.85	700131.16	
14568.00	90.86	273.24	7751.30	295.59	-6906.66	0.69	6912.68	479492.76	700035.30	
14665.00	91.29	272.13	7749.48	300.14	-7003.54	1.23	7009.65	479497.30	699938.42	
14761.00	91.85	274.22	7746.84	305.45	-7099.35	2.25	7105.59	479502.61	699842.61	
14858.00	92.71	275.36	7742.99	313.54	-7195.93	1.47	7202.38	479510.71	699746.03	
14954.00	90.55	270.81	7740.25	318.70	-7291.72	5.24	7298.29	479515.87	699650.24	
15050.00	91.48	266.50	7738.55	316.45	-7387.66	4.59	7394.10	479513.62	699554.30	
15146.00	91.23	265.10	7736.28	309.42	-7483.37	1.48	7489.53	479506.59	699458.59	
15243.00	90.00	260.23	7735.24	297.04	-7579.54	5.18	7585.23	479494.21	699362.42	
15339.00	91.97	263.25	7733.59	283.26	-7674.51	3.76	7679.69	479480.42	699267.45	
15436.00	91.54	266.61	7730.62	274.69	-7771.07	3.49	7775.91	479471.85	699170.89	
15532.00	91.54	268.66	7728.04	270.73	-7866.95	2.13	7871.60	479467.89	699075.01	
15627.00	89.38	270.14	7727.28	269.73	-7961.94	2.76	7966.50	479466.90	698980.02	
15722.00	89.81	273.25	7727.95	272.54	-8056.88	3.30	8061.49	479469.71	698885.08	
15819.00	91.15	276.84	7727.13	281.07	-8153.48	3.95	8158.32	479478.24	698788.48	
15915.00	90.43	274.89	7725.81	290.88	-8248.97	2.17	8254.08	479488.04	698692.99	
16012.00	92.71	270.33	7723.15	295.30	-8345.80	5.25	8351.00	479492.46	698596.16	
16042.00	91.60	270.08	7722.02	295.40	-8375.77	3.79	8380.97	479492.57	698566.18	Last Wft Svy
16064.00	91.60	270.08	7721.41	295.43	-8397.77	0.00	8402.95	479492.60	698544.19	Proj. To Bit

Annotation

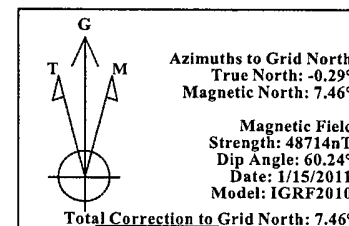
MD ft	TVD ft	
7200.00	7199.10	Tie On SDI
7319.00	7318.09	First Wft Svy
16042.00	7722.02	Last Wft Svy
16064.00	7721.41	Proj. To Bit

BOPCO, L.P.

JRU #119H
Eddy Co., New Mexico

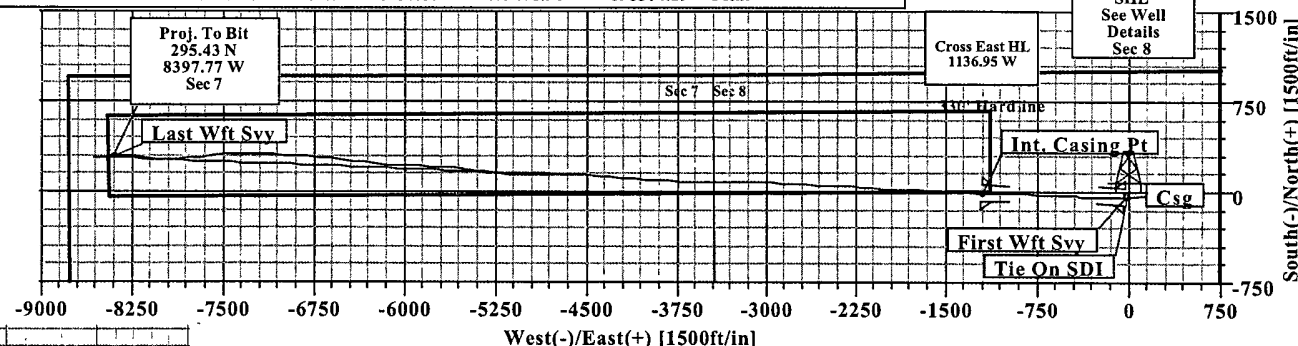
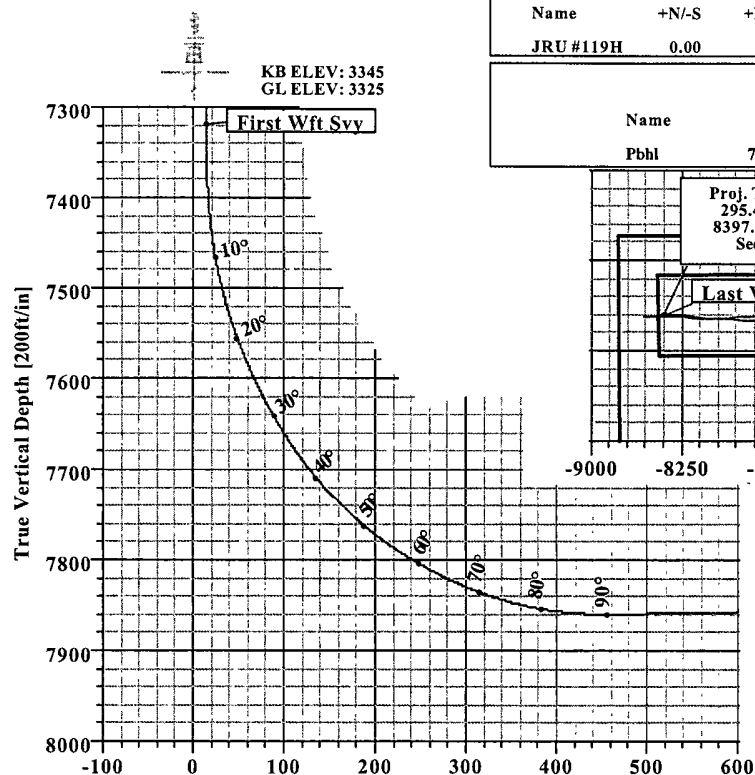


Weatherford



WELL DETAILS						
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
JRU #119H	0.00	0.00	479197.16	706941.96	32°18'58.480N	103°47'50.153W

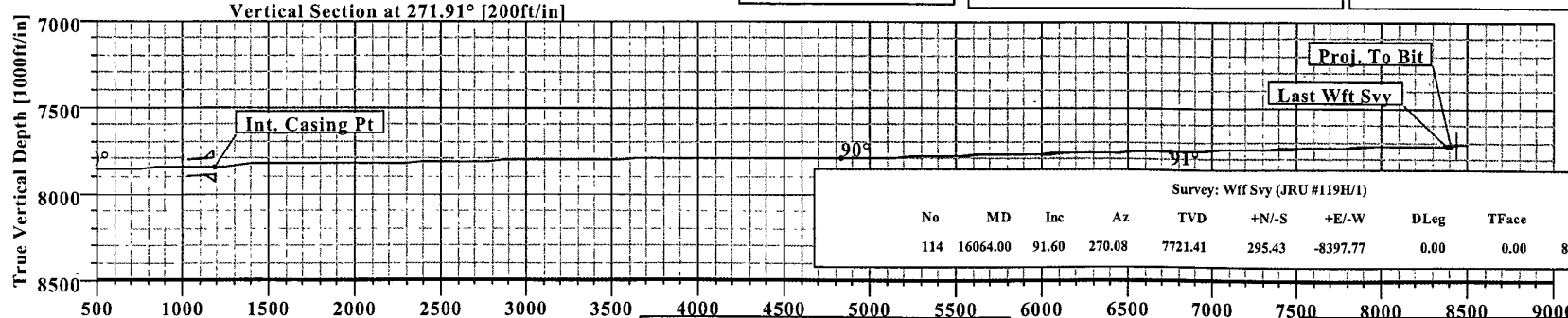
TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Pbhl	7717.00	281.74	-8437.67	479478.90	698504.29	Point



LEGEND	
—	JRU #119H, 1, Plan #7
—	JRU #119H, 1, Gyro
—	Wft Svy

SITE DETAILS	
JRU #119H	
Site Centre Northing:	479197.16
Easting:	706941.96
Ground Level:	3325.00
Positional Uncertainty:	0.00
Convergence:	0.29

FIELD DETAILS	
Eddy County, NM (Nad 83)	
Geodetic System:	US State Plane Coordinate System 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico, Eastern Zone
Magnetic Model:	IGRF2010
System Datum:	Mean Sea Level
Local North:	Grid North



Survey: Wft Svy (JRU #119H/1)									
No	MD	Inc	Az	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
114	16064.00	91.60	270.08	7721.41	295.43	-8397.77	0.00	0.00	8402.95

Survey: Wft Svy (JRU #119H/1)
Created By: Russell W. Joyner
Date: 1/31/2011

BOPCO, L.P.

JRU #119H
Eddy Co., New Mexico

Geodetic Calculator Results

Map System ☐ US State Plane Coordinate System 1983
Ellipsoid ☐ GRS 1980
Zone Name ☐ New Mexico, Eastern Zone

Latitude ☐ 32°18'58.480N
Longitude ☐ 103°47'50.153W

Grid East ☐ 706941.96
Grid North ☐ 479197.16
Local East ☐ 0.00
Local North ☐ 0.00
Convergence ☐ 0.286557° from True to Grid North
Scale Factor ☐ 0.99994659

Magnetic Calculator Results

Geomagnetic Model ☐ IGRF2010

Latitude ☐ 32°18'58.480N
Longitude (Greenwich) ☐ 103°47'50.153W
Sample Date ☐ 2011-04-16
Vertical Depth ☐ 0.00

Azimuth of Magnetic North ☐ 7.747° True
Magnetic Declination ☐ -7.747°(E) from True North
Dip Angle from Horizontal ☐ 66.244°
Magnetic Field Strength ☐ 48.689 nT
Magnetic Field X value ☐ 23.944 nT
Magnetic Field Y value ☐ 33.157 nT
Magnetic Field Z value ☐ 42.169 nT
Magnetic Field Horizontal ☐ 24.164 nT

Magnetic Azimuth Apply ☐ 7.7461 to convert to Grid North
Gyroscopic Azimuth Apply ☐ -4.287 to convert to Grid North
Geodetic System ☐ US State Plane Coordinate System 1983
Geodetic Zone ☐ New Mexico, Eastern Zone
Geodetic Datum ☐ GRS 1980

SECTION DETAILS

Sec	MD	Inc	Ad	TVD	+N-S	+E-W	DLog	TFace	VSec	Target
1	12144.00	90.61	271.31	7792.77	136.51	-4493.78	0.00	0.00	4492.83	
2	12197.17	89.24	272.11	7792.83	138.99	-4543.93	3.00	149.90	4544.80	
3	12222.50	90.00	272.11	7793.00	139.03	-4569.24	3.00	0.00	4571.34	
4	12751.17	90.00	272.11	7793.50	158.49	-5097.55	0.00	0.00	5100.00	
5	12794.88	91.31	272.11	7792.50	160.10	-5141.22	3.00	8.14	5143.70	
6	16094.43	91.31	272.11	7717.00	281.74	-8437.67	0.00	0.00	8442.37	Pbhl

WELL DETAILS

Name	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot
JRU #119H	0.00	0.00	479197.16	706941.96	32°18'58.480N	103°47'50.153W	N/A

TARGET DETAILS

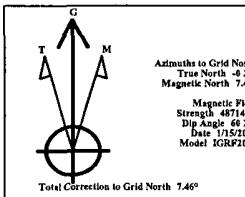
Name	TVD	+N-S	+E-W	Northing	Easting	Shape
Pbhl	7717.00	281.74	-8437.67	479478.90	698504.29	Point

Survey: WIT Svy (JRU #119H/1)

No	MD	Inc	Az	TVD	+N-S	+E-W	DLog	TFace	VSec
114	16064.00	91.60	270.08	7721.41	295.43	-8397.77	0.00	0.00	8402.95

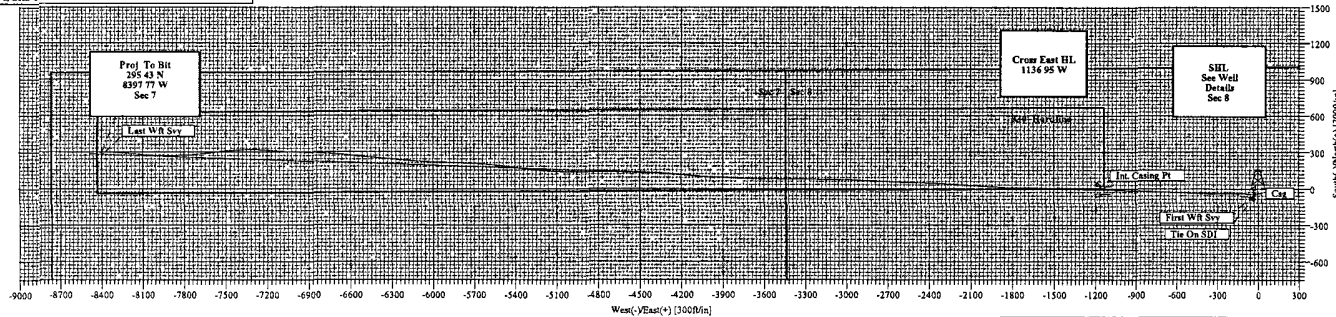


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LEGEND

— JRU #119H.1, Plan #7
— JRU #119H.1, Gyro
— WIT Svy



FIELD DETAILS

Eddy County, NM (Nad 83)

Geodetic System: US State Plane Coordinate System 1983
Ellipsoid: GRS 1980
Zone: New Mexico, Eastern Zone
Magnetic Model: IGRF2010

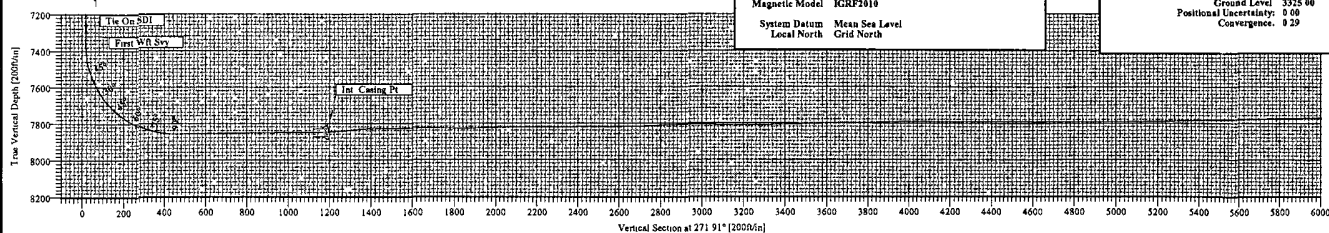
System Datum: Mean Sea Level
Local North: Grid North

SITE DETAILS

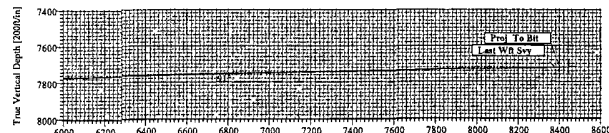
JRU #119H

Site Centre Northing: 479197.16
Easting: 706941.96
Ground Level: 3325.00
Positional Uncertainty: 0.00
Convergence: 0.29

KB ELEV 3345
GL ELEV 3325



Vertical Section at 271.91° [2000ft]



Vertical Section at 271.91° [2000ft]

Survey: WIT Svy (JRU #119H/1)

Created By: Russell W. Joyner

Date: 1/31/2011

BOPCO, L.P.

JRU #119H

Eddy Co., New Mexico

Geodetic Calculator Results

Map System : US State Plane Coordinate System 1983

Ellipsoid : GRS 1980

Zone Name : New Mexico, Eastern Zone

Latitude : 32°18'58.480N

Longitude : 103°47'50.153W

Grid East : 786941.96

Grid North : 479197.16

Local East : 0.00

Local North : 0.00

Convergence : 0.286667° from True to Grid North

Scale Factor : 0.99994850

Magnetic Calculator Results

Geomagnetic Model : IGRF2010

Latitude : 32°18'58.480N

Longitude (Greenwich) : 103°47'50.153W

Sample Date : 2011-01-15

Vertical Depth : 0.00

Azimuth of Magnetic North : 74.7° True

Magnetic Declination : 17.747°(E) from True North

Dip Angle from Horizontal : 50.24°

Magnetic Field Strength : 48689 aT

Magnetic Field X value : 33944 aT

Magnetic Field Y value : 3357 aT

Magnetic Field Z value : 48260 aT

Magnetic Field Horizontal : 24464 aT

Magnetic Azimuth Apply : 17.461 to convert to Grid North

Cyanometer Azimuth Apply : 0.287 to convert to Grid North

Geodetic System : US State Plane Coordinate System 1983

Geodetic Zone : New Mexico, Eastern Zone

Geodetic Datum : NAD 83

Geodetic Datum : NAD 83

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	DLeg	TFace	VSec	Target
1	12144.00	90.62	271.31	7792.77	136.51	-4499.78	0.00	0.00	4492.83	
2	12197.17	89.24	272.11	7792.83	138.09	-4543.93	3.00	149.90	4546.00	
3	12222.50	90.00	273.11	7793.00	139.03	-4589.24	3.00	0.00	4571.34	
4	12751.17	90.00	272.11	7793.00	158.49	-5097.55	0.00	0.00	5100.00	
5	12794.88	91.31	272.11	7792.50	160.10	-5141.22	3.00	0.14	5143.70	
6	16094.43	91.31	272.11	7717.00	281.74	-8437.67	0.00	0.00	8442.37	Pbhl

WELL DETAILS

Name	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot
JRU #119H	0.00	0.00	479197.16	786941.96	32°18'58.480N	103°47'50.153W	N/A

TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Shape
Pbhl	7717.00	281.74	-8437.67	479478.90	698504.29	Point

Survey: WH Svy (JRU #119H/1)

No	MD	Inc	Azi	TVD	+N-S	+E-W	DLeg	TFace	VSec
114	16064.00	91.60	270.08	7721.41	295.43	-8397.77	0.00	0.00	8402.95



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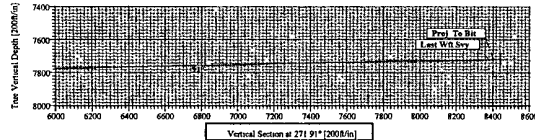
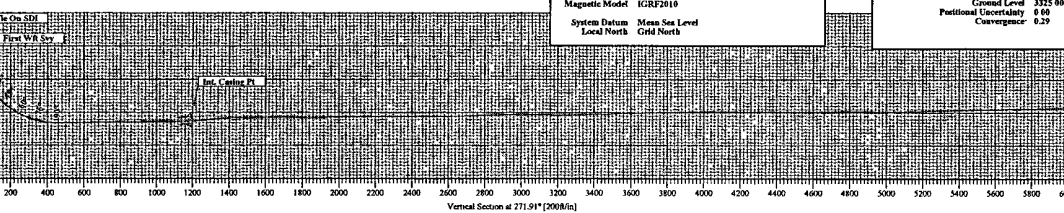
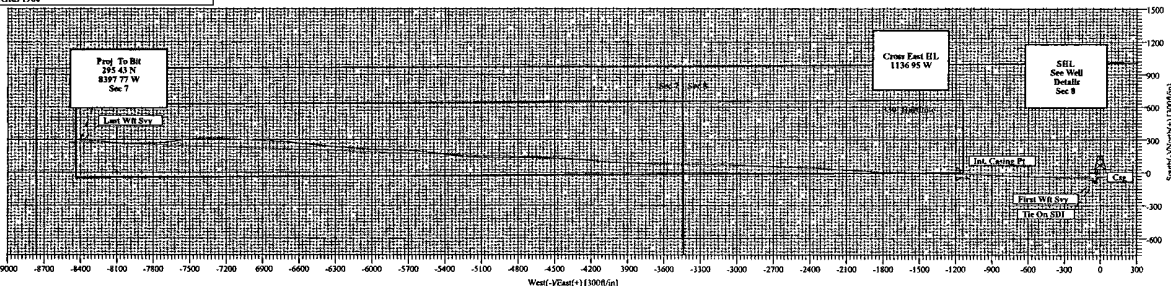


Azimuth to Grid North
True North -0.29°
Magnetic North 7.46°
Magnetic Field
Strength 48714 aT
Dip Angle 60.24°
Date 1/15/2011
Model IGRF2010

Total Correction to Grid North 7.46°

LEGEND

— JRU #119H, Plan #7
— JRU #119H, 1/2-Cyrc
— WH Svy



FIELD DETAILS

Eddy County, NM (Nat 83)

Geodetic System : US State Plane Coordinate System 1983

Ellipsoid : GRS 1980

Zone : New Mexico, Eastern Zone

Magnetic Model : IGRF2010

System Datum : Mean Sea Level

Local North : Grid North

SITE DETAILS

JRU #119H

Site Centre Northing : 479197.16

Easting : 786941.96

Ground Level : 3325.00

Positional Uncertainty : 0.00

Convergence : 0.29

Survey: WH Svy (JRU #119H/1)

Created By: Russell W. Joyner

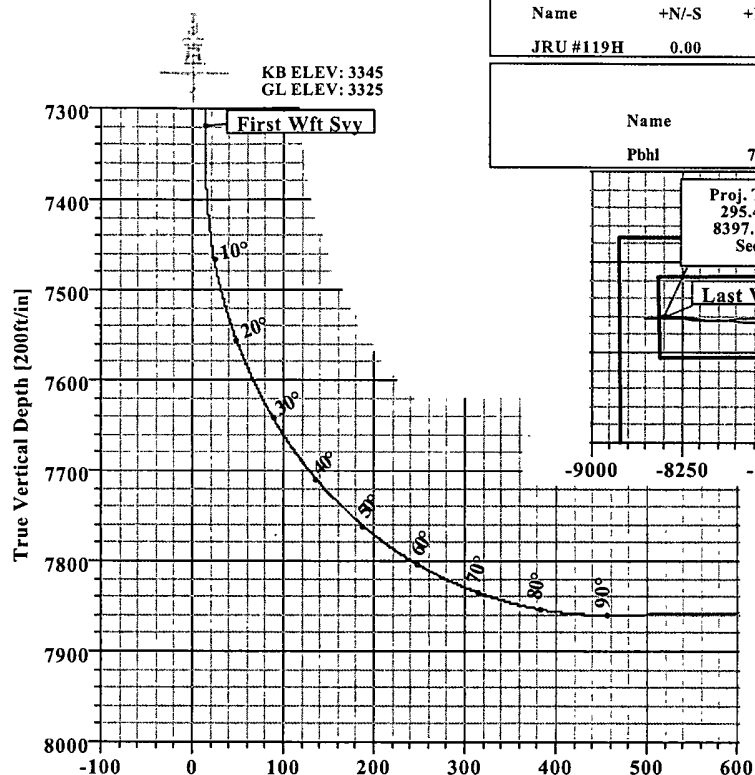
Date: 1/15/2011

BOPCO, L.P.

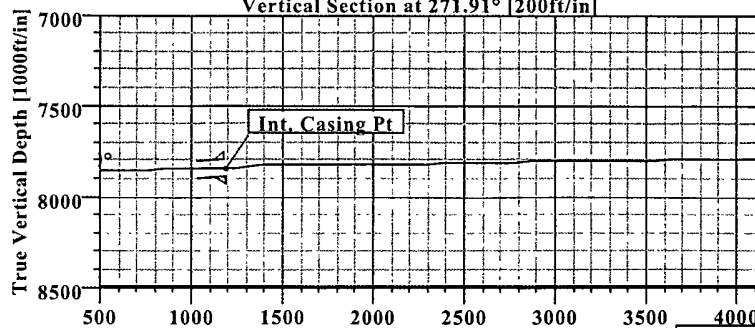
JRU #119H
Eddy Co., New Mexico



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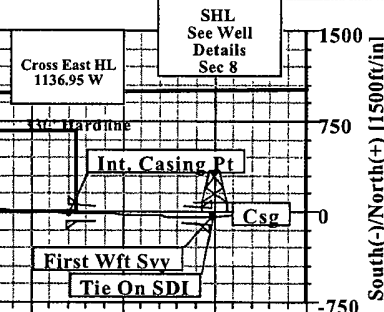
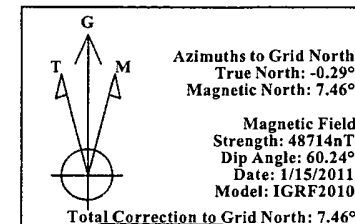
Vertical Section at 271.91° [200ft/in]



Vertical Section at 271.91° [1000ft/in]

WELL DETAILS						
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
JRU #119H	0.00	0.00	479197.16	706941.96	32°18'58.480N	103°47'50.153W

TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Pbhl	7717.00	281.74	-8437.67	479478.90	698504.29	Point



LEGEND	
—	JRU #119H, 1, Plan #7
—	JRU #119H, 1, Gyro
—	Wft Svy

SITE DETAILS	
JRU #119H	
Site Centre Northing:	479197.16
Easting:	706941.96
Ground Level:	3325.00
Positional Uncertainty:	0.00
Convergence:	0.29

FIELD DETAILS	
Eddy County, NM (Nad 83)	
Geodetic System:	US State Plane Coordinate System 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico, Eastern Zone
Magnetic Model:	IGRF2010
System Datum:	Mean Sea Level
Local North:	Grid North

Survey: Wft Svy (JRU #119H/1)									
No	MD	Inc	Az	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
114	16064.00	91.60	270.08	7721.41	295.43	-8397.77	0.00	0.00	8402.95

Created By: Russell W. Joyner

Date: 1/31/2011