

Allis-Chalmers Energy, Inc.

Survey Report

3001533133

Company: BURNETT OIL CO. INC. Field: Eddy County, NM Site: Jackson "B" 41H RE Well: #41H RE Wellpath: Lateral			Date: 07/05/2010 Time: 09:58:43 Page: 1 Co-ordinate(NE) Reference: Well: #41H RE, Grid North Vertical (TVD) Reference: 3671'GL+12'KB 3683.0 Section (VS) Reference: Well (0.00N,0.00E,342.74Azi) Survey Calculation Method: Minimum Curvature Db: Sybase							
Field: Eddy County, NM Map System: US State Plane Coordinate System 1927 Geo Datum: NAD27 (Clarke 1866) Sys Datum: Mean Sea Level						Map Zone: New Mexico, Eastern Zone Coordinate System: Well Centre Geomagnetic Model: IGRF2010				
Site: Jackson "B" 41H RE Site Position: From: Map Northing: 662549.93 ft Latitude: 32 49 14.688 N Position Uncertainty: 0.00 ft Easting: 627731.90 ft Longitude: 103 55 3.155 W Ground Level: 3671.00 ft North Reference: Grid Grid Convergence: 0.23 deg										
Well: #41H RE Slot Name: Well Position: +N/-S 0.00 ft Northing: 662549.93 ft Latitude: 32 49 14.688 N +E/-W 0.00 ft Easting: 627731.90 ft Longitude: 103 55 3.155 W Position Uncertainty: 0.00 ft										
Wellpath: Lateral Current Datum: 3671'GL+12'KB Height: 3683.00 ft Drilled From: Original Hole Magnetic Data: 06/29/2010 Tie-on Depth: 4529.00 ft Field Strength: 49060 nT Above System Datum: Mean Sea Level Vertical Section: Depth From (TVD) Declination: 7.91 deg ft ft ft Mag Dip Angle: 60.70 deg 0.00 0.00 0.00 Direction: deg 342.74										
Survey Program for Definitive Wellpath Date: 07/05/2010 Validated: No Version: 0 Actual From To Survey Toolcode Tool Name ft ft 100.00 3486.00 Survey #1 (100.00-3486.00) Gyroscope Gyroscope 3581.00 6658.00 Survey #2 (3581.00-6658.00) MWD Std MWD 6740.00 6740.00 Survey #3 (6740.00-6740.00) Project Projection										
Survey										
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
100.00	0.43	3.85	100.00	0.37	0.03	0.35	0.43	0.43	0.00	Gyroscope
200.00	0.43	333.53	200.00	1.08	-0.12	1.07	0.22	0.00	-30.32	Gyroscope
300.00	0.39	11.32	299.99	1.75	-0.22	1.74	0.27	-0.04	37.79	Gyroscope
400.00	0.95	318.24	399.99	2.71	-0.70	2.79	0.78	0.56	-53.08	Gyroscope
500.00	1.31	317.52	499.97	4.17	-2.03	4.58	0.36	0.36	-0.72	Gyroscope
600.00	1.36	314.23	599.94	5.84	-3.65	6.66	0.09	0.05	-3.29	Gyroscope
700.00	1.27	313.95	699.91	7.44	-5.30	8.67	0.09	-0.09	-0.28	Gyroscope
800.00	0.77	333.67	799.90	8.81	-6.39	10.31	0.60	-0.50	19.72	Gyroscope
900.00	0.72	346.95	899.89	10.02	-6.83	11.60	0.18	-0.05	13.28	Gyroscope
1000.00	0.63	10.69	999.88	11.17	-6.87	12.71	0.29	-0.09	23.74	Gyroscope
1100.00	1.11	32.60	1099.87	12.53	-6.25	13.82	0.58	0.48	21.91	Gyroscope
1200.00	1.04	27.49	1199.85	14.15	-5.31	15.09	0.12	-0.07	-5.11	Gyroscope
1300.00	1.15	19.35	1299.84	15.90	-4.56	16.54	0.19	0.11	-8.14	Gyroscope
1400.00	1.44	12.91	1399.81	18.07	-3.94	18.43	0.32	0.29	-6.44	Gyroscope
1500.00	1.96	5.73	1499.77	21.00	-3.49	21.09	0.56	0.52	-7.18	Gyroscope
1600.00	1.65	353.43	1599.72	24.13	-3.49	24.08	0.49	-0.31	-12.30	Gyroscope
1700.00	1.47	337.74	1699.68	26.75	-4.14	26.77	0.46	-0.18	-15.69	Gyroscope
1800.00	1.09	337.84	1799.66	28.82	-4.98	29.00	0.38	-0.38	0.10	Gyroscope
1900.00	1.15	337.29	1899.64	30.62	-5.73	30.94	0.06	0.06	-0.55	Gyroscope
2000.00	1.15	336.15	1999.62	32.47	-6.52	32.94	0.02	0.00	-1.14	Gyroscope

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Field: Eddy County, NM
Site: Jackson "B" 41H RE
Well: #41H RE
Wellpath: Lateral

Date: 07/05/2010 Time: 09:58:43 Page: 2
Co-ordinate(NE) Reference: Well: #41H RE, Grid North
Vertical (TVD) Reference: 3671'GL+12'KB 3683.0
Section (VS) Reference: Well (0.00N,0.00E,342.74Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2100.00	1.15	342.91	2099.60	34.34	-7.22	34.94	0.14	0.00	6.76	Gyroscope
2200.00	1.20	350.57	2199.57	36.34	-7.69	36.98	0.16	0.05	7.66	Gyroscope
2300.00	1.17	351.36	2299.55	38.38	-8.01	39.03	0.03	-0.03	0.79	Gyroscope
2400.00	1.33	356.75	2399.53	40.55	-8.23	41.16	0.20	0.16	5.39	Gyroscope
2500.00	1.48	349.90	2499.50	42.98	-8.52	43.57	0.22	0.15	-6.85	Gyroscope
2600.00	1.36	346.10	2599.47	45.40	-9.04	46.04	0.15	-0.12	-3.80	Gyroscope
2700.00	1.41	357.15	2699.44	47.78	-9.38	48.41	0.27	0.05	11.05	Gyroscope
2800.00	1.60	0.90	2799.41	50.41	-9.42	50.93	0.21	0.19	3.75	Gyroscope
2900.00	1.50	358.45	2899.37	53.11	-9.43	53.52	0.12	-0.10	-2.45	Gyroscope
3000.00	1.15	356.70	2999.34	55.42	-9.53	55.75	0.35	-0.35	-1.75	Gyroscope
3100.00	1.34	357.45	3099.32	57.59	-9.64	57.86	0.19	0.19	0.75	Gyroscope
3200.00	1.54	337.35	3199.29	60.00	-10.21	60.33	0.54	0.20	-20.10	Gyroscope
3300.00	1.39	322.47	3299.25	62.20	-11.46	62.80	0.41	-0.15	-14.88	Gyroscope
3400.00	1.35	336.25	3399.23	64.24	-12.68	65.11	0.33	-0.04	13.78	Gyroscope
3486.00	2.17	312.84	3485.19	66.28	-14.28	67.53	1.25	0.95	-27.22	Gyroscope
3581.00	4.20	300.00	3580.04	69.24	-18.61	71.64	2.25	2.14	-13.52	MWD
3613.00	4.40	287.10	3611.95	70.18	-20.80	73.20	3.08	0.62	-40.31	MWD
3644.00	5.80	288.10	3642.82	71.02	-23.42	74.77	4.53	4.52	3.23	MWD
3676.00	6.40	283.30	3674.64	71.93	-26.70	76.62	2.46	1.87	-15.00	MWD
3708.00	6.20	281.70	3706.45	72.69	-30.12	78.36	0.83	-0.62	-5.00	MWD
3739.00	6.00	283.70	3737.27	73.42	-33.34	80.00	0.94	-0.65	6.45	MWD
3771.00	5.90	280.40	3769.10	74.11	-36.58	81.63	1.11	-0.31	-10.31	MWD
3833.00	5.90	282.80	3830.77	75.39	-42.82	84.70	0.40	0.00	3.87	MWD
3897.00	6.10	281.60	3894.42	76.80	-49.36	87.99	0.37	0.31	-1.87	MWD
3960.00	5.70	283.20	3957.09	78.19	-55.69	91.19	0.69	-0.63	2.54	MWD
4022.00	6.60	280.40	4018.73	79.54	-62.19	94.41	1.53	1.45	-4.52	MWD
4086.00	6.50	280.80	4082.31	80.88	-69.36	97.82	0.17	-0.16	0.62	MWD
4149.00	6.40	280.60	4144.91	82.20	-76.32	101.14	0.16	-0.16	-0.32	MWD
4212.00	6.30	279.20	4207.53	83.39	-83.18	104.32	0.29	-0.16	-2.22	MWD
4262.00	6.40	278.10	4257.22	84.22	-88.65	106.73	0.31	0.20	-2.20	MWD
4325.00	6.70	287.20	4319.81	85.81	-95.64	110.32	1.71	0.48	14.44	MWD
4388.00	6.90	289.00	4382.37	88.13	-102.72	114.64	0.46	0.32	2.86	MWD
4452.00	7.00	286.00	4445.90	90.45	-110.11	119.05	0.59	0.16	-4.69	MWD
4513.00	6.70	286.20	4506.46	92.47	-117.10	123.05	0.49	-0.49	0.33	MWD
4545.00	6.80	286.60	4538.24	93.53	-120.71	125.13	0.35	0.31	1.25	MWD
4576.00	8.60	292.10	4568.96	94.93	-124.61	127.63	6.27	5.81	17.74	MWD
4608.00	15.40	300.00	4600.24	97.96	-130.52	132.27	21.81	21.25	24.69	MWD
4639.00	22.00	304.10	4629.59	103.28	-138.90	139.84	21.70	21.29	13.23	MWD
4670.00	28.00	301.00	4657.68	110.29	-149.96	149.81	19.80	19.35	-10.00	MWD
4702.00	33.80	306.40	4685.13	119.45	-163.57	162.60	20.07	18.12	16.87	MWD
4734.00	39.60	309.40	4710.78	131.21	-178.63	178.30	18.97	18.12	9.37	MWD
4765.00	45.00	312.10	4733.70	144.84	-194.41	196.00	18.38	17.42	8.71	MWD
4796.00	48.90	311.80	4754.86	159.98	-211.26	215.46	12.60	12.58	-0.97	MWD
4828.00	49.40	311.00	4775.79	175.99	-229.41	236.13	2.45	1.56	-2.58	MWD
4860.00	52.00	311.60	4796.05	192.33	-248.01	257.26	8.25	8.12	1.87	MWD
4870.49	53.96	312.10	4802.37	197.92	-254.25	264.45	19.07	18.69	4.73	BHL
4891.00	57.80	313.00	4813.87	209.40	-266.76	279.12	19.07	18.72	4.41	MWD
4923.00	63.70	314.30	4829.50	228.67	-286.94	303.51	18.77	18.44	4.06	MWD
4954.00	69.50	316.90	4841.81	249.00	-306.83	328.82	20.23	18.71	8.39	MWD
4986.00	74.70	318.60	4851.64	271.53	-327.29	356.41	17.02	16.25	5.31	MWD
5017.00	79.60	319.00	4858.53	294.27	-347.19	384.03	15.86	15.81	1.29	MWD
5049.00	83.70	319.30	4863.18	318.21	-367.90	413.04	12.85	12.81	0.94	MWD
5081.00	87.90	320.10	4865.52	342.55	-388.53	442.40	13.36	13.12	2.50	MWD
5112.00	91.00	320.80	4865.82	366.44	-408.27	471.08	10.25	10.00	2.26	MWD

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Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
5144.00	92.10	325.90	4864.96	392.10	-427.36	501.24	16.30	3.44	15.94	MWD
5175.00	92.00	330.50	4863.85	418.42	-443.68	531.22	14.83	-0.32	14.84	MWD
5207.00	91.40	335.30	4862.90	446.89	-458.24	562.73	15.11	-1.87	15.00	MWD
5238.00	91.00	337.10	4862.25	475.24	-470.75	593.52	5.95	-1.29	5.81	MWD
5270.00	91.80	339.40	4861.46	504.96	-482.60	625.41	7.61	2.50	7.19	MWD
5302.00	93.10	344.00	4860.10	535.30	-492.64	657.36	14.93	4.06	14.37	MWD
5333.00	93.40	346.20	4858.34	565.21	-500.60	688.29	7.15	0.97	7.10	MWD
5364.00	92.80	348.80	4856.66	595.43	-507.30	719.13	8.60	-1.94	8.39	MWD
5398.00	92.00	352.50	4855.24	628.94	-512.81	752.77	11.12	-2.35	10.88	MWD
5430.00	91.50	352.70	4854.26	660.66	-516.93	784.29	1.68	-1.56	0.62	MWD
5462.00	91.30	352.00	4853.48	692.36	-521.19	815.83	2.27	-0.62	-2.19	MWD
5493.00	92.20	353.50	4852.53	723.10	-525.10	846.34	5.64	2.90	4.84	MWD
5525.00	92.40	353.50	4851.25	754.87	-528.72	877.75	0.62	0.62	0.00	MWD
5557.00	93.00	355.30	4849.74	786.68	-531.84	909.05	5.92	1.87	5.62	MWD
5588.00	92.70	355.70	4848.20	817.54	-534.27	939.25	1.61	-0.97	1.29	MWD
5651.00	92.50	354.90	4845.34	880.27	-539.43	1000.68	1.31	-0.32	-1.27	MWD
5712.00	92.70	356.50	4842.57	941.03	-544.00	1060.06	2.64	0.33	2.62	MWD
5775.00	92.40	356.80	4839.77	1003.86	-547.67	1121.15	0.67	-0.48	0.48	MWD
5841.00	92.20	356.90	4837.12	1069.71	-551.30	1185.11	0.34	-0.30	0.15	MWD
5904.00	92.20	356.80	4834.70	1132.57	-554.76	1246.17	0.16	0.00	-0.16	MWD
5967.00	92.20	356.60	4832.28	1195.42	-558.38	1307.26	0.32	0.00	-0.32	MWD
6029.00	92.00	356.60	4830.01	1257.27	-562.06	1367.41	0.32	-0.32	0.00	MWD
6091.00	91.70	356.40	4828.01	1319.12	-565.84	1427.60	0.58	-0.48	-0.32	MWD
6154.00	91.80	356.00	4826.09	1381.95	-570.01	1488.84	0.65	0.16	-0.63	MWD
6217.00	92.00	355.70	4824.00	1444.75	-574.57	1550.17	0.57	0.32	-0.48	MWD
6280.00	92.30	355.60	4821.63	1507.52	-579.34	1611.53	0.50	0.48	-0.16	MWD
6344.00	92.40	355.20	4819.01	1571.26	-584.47	1673.92	0.64	0.16	-0.62	MWD
6407.00	92.60	356.10	4816.26	1634.02	-589.25	1735.27	1.46	0.32	1.43	MWD
6469.00	92.70	356.30	4813.40	1695.82	-593.35	1795.51	0.36	0.16	0.32	MWD
6532.00	92.60	356.10	4810.48	1758.61	-597.52	1856.71	0.35	-0.16	-0.32	MWD
6595.00	92.30	355.50	4807.79	1821.39	-602.13	1918.02	1.06	-0.48	-0.95	MWD
6658.00	92.10	354.90	4805.37	1884.12	-607.40	1979.49	1.00	-0.32	-0.95	MWD
6740.00	92.10	354.90	4802.37	1965.74	-614.68	2059.60	0.00	0.00	0.00	PROJECTED to TD

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude --->			<--- Longitude --->		
B 45 @ TD			0.00	511.53	-1.01	663061.47	627730.89	32	49	19.750 N	103	55	3.144 W
-Circle (Radius: 85)													
B 45 SL			0.00	511.53	-1.01	663061.47	627730.89	32	49	19.750 N	103	55	3.144 W
A 20 SL			0.00	1321.65	46.61	663871.59	627778.51	32	49	27.764 N	103	55	2.548 W
Surface			0.00	0.00	0.00	662549.93	627731.90	32	49	14.688 N	103	55	3.155 W
B45 400'			0.00	511.53	-1.01	663061.47	627730.89	32	49	19.750 N	103	55	3.144 W
-Circle (Radius: 400)													
BHL			4802.37	1965.74	-614.68	664515.67	627117.22	32	49	34.163 N	103	55	10.268 W

WELL COMPLETION SKETCH

Well: Jackson B 41H Date: 4/29/2016

Location: UNIT 11, 2310 FNL, 380' TEL, SEC 24, T17S, R30E

Operator: Cedar Lake Vess

Cost: Eddy Co., NM

AP # 30-015-33133

PERMANENT WELL BORE DATA

☒ PRESENT COMPLETION

☐ RECOMMENDED COMPLETION

DATA ON THIS COMPLETION

Sand: 12/21/2003
Elevation: 3,671' GL
14.3/4" hole
9-5/8" 32.35 H-40 @ 500'
Cmmt W 250 SX
8-3/4" hole
DV @ 2,906
Cmmt W 1,750 SX

140 JTS 2-3/8" J-55 PROD TBG (SAME) = 4,397.40'
4-1/2" TAC (EXCHANGE) = 3'
2-3/8" SN (NEW) = 1.1'
1 JT 2-3/8" J-55 PROD TBG (SAME) = 31.41'
SLIM HOLE SPIRIT COMBO = 20.0'
3 JT 2-3/8" OELM (SAME) = 94.23'
EOE = 4,536.14'

1-1/4" X 26 PR W/ 1/2" LINER
7/8" X 2, 4 D-90 PONY'S
174, 78" D-90 ROOS
20-150-RWAC 20-4

STAGE	PERFS	HOLES	SUCKWATER	100 MESH	40/70	Date
1	6,577.6-692	40	gal	(lb)	(lb)	9/2/10
2	6,318.6-495	40	577.794	20,000	151.379	9/3/10
3	6,068.6-255	40	568.754	20,000	150.583	9/4/10
4	5,845.5-015	40	582.624	20,000	153.028	9/5/10
5						
6						

Top of Window 3,485'

CIBP @ 3,500' 627.10

Lower San Andres
part 3,673-4,236 21 int, 2 SPF

Padlock
part 4,834-5,109 11 int, 2 SPF

7-238 K-55 @ 5,314'
Cmmt W 800 SX

50 SX cmmt 3,585-3,370' dress off to 3,520' 627.10

CIBP @ 3,750' W 35 cmmt on top, 12/17/08

CIBP @ 4,750' W 35 cmmt on top, 12/17/08

185 57.876 gal W/G40+22.716 gal H2O 20% HCl acid+
5,000 gal cool 15% HCl acid+5,100 gal 100 Mesh, 1/23/04
FC @ 5,260'

4-1/2" 11.64 L-80 @ 6,741'
Cmmt W 375 SX

1/16/07

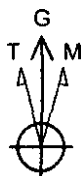
1/21/04

TD 6,740 MD
4,802 T/D

TD 5,350'

BURNETT OIL CO. INC.

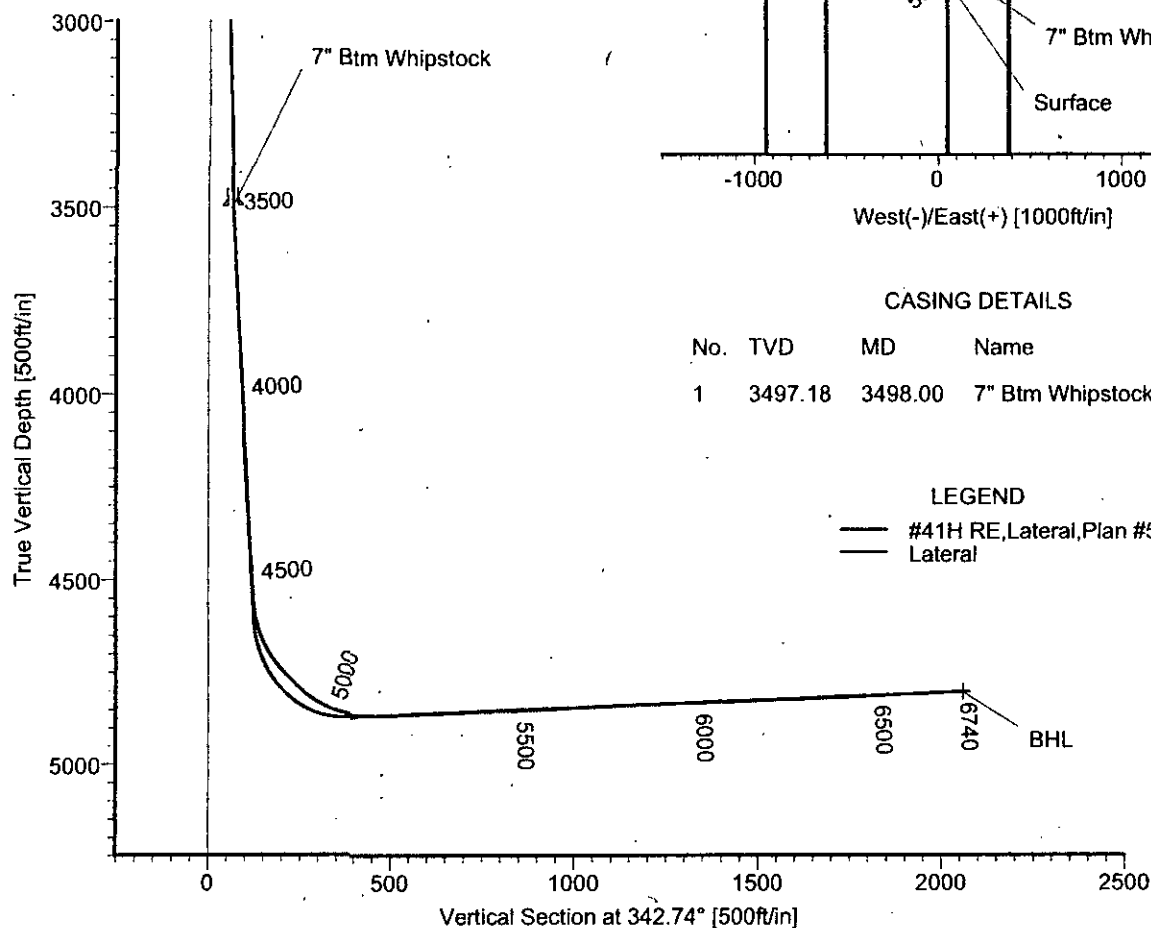
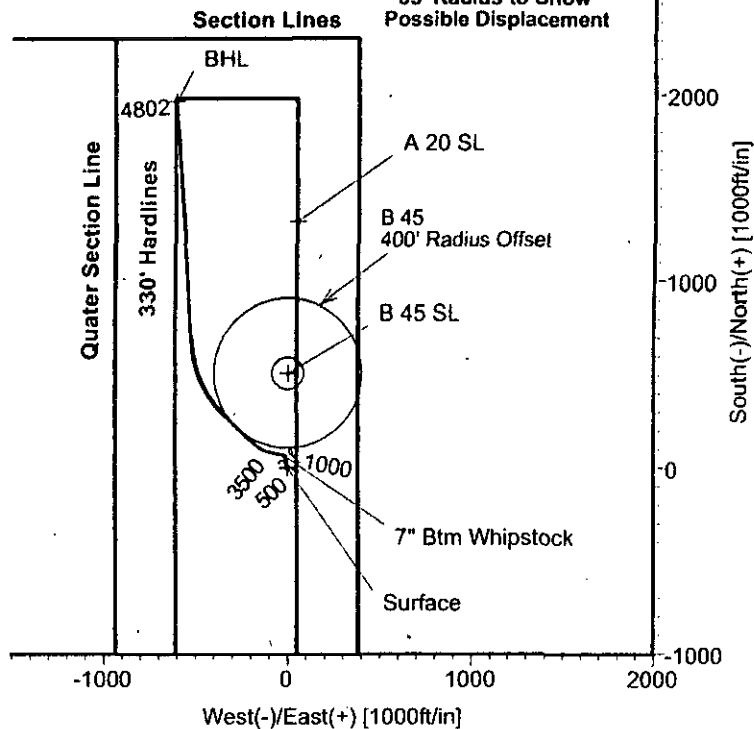
Field: Eddy County, NM
Site: Jackson "B" 41H RE
Well: #41H RE
Wellpath: Lateral



Azimuths to Grid North
True North: -0.23°
Magnetic North: 7.69°

Magnetic Field
Strength: 49060nT
Dip Angle: 60.70°
Date: 06/29/2010
Model: IGRF2010

Surveys for the B 45 Well
Are Inclination Only
85' Radius to Show
Possible Displacement



CASING DETAILS

No.	TVD	MD	Name	Size
1	3497.18	3498.00	7" Btm Whipstock	7.000

LEGEND

— #41H RE, Lateral, Plan #5
— Lateral

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
B 45 @ TD	0.00	511.53	-1.01	663061.47	627730.89	32°49'19.750N	103°55'03.144W	Circle (Radius: 85)
B 45 SL	0.00	511.53	-1.01	663061.47	627730.89	32°49'19.750N	103°55'03.144W	Point
A 20 SL	0.00	1321.65	46.61	663871.59	627778.51	32°49'27.764N	103°55'02.548W	Point
Surface	0.00	0.00	0.00	662549.93	627731.90	32°49'14.688N	103°55'03.155W	Point
B45 400'	0.00	511.53	-1.01	663061.47	627730.89	32°49'19.750N	103°55'03.144W	Circle (Radius: 400)
BHL	4802.37	1965.74	-614.68	664515.67	627117.22	32°49'34.163N	103°55'10.268W	Point

ALLIS-CHALMERS DIRECTIONAL DRILLING SERVICES
911 Regional Park Drive Houston, Texas 77060
Phone: 713-934-9600 Fax: 713-934-9067



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