

BC  PERATING, INC.

B.C Operating, Inc.

Lea County
Abe State 2H

HOBBSD

FEB 05 2015

RECEIVED

30-025-42066

MOJO EOW Survey

09 September, 2014

This survey is correct to the best of my knowledge and is supported
by actual field data.

_____(Signature)

Notarized this date _____ of _____, 2014

Notary Signature County of Collin State of Texas



MOJO
DIRECTIONAL CORPORATION

FEB 24 2015

Company:	B.C. Operating, Inc.	Local Co-ordinate Reference:	Well Abe State #2H
Project:	Lea County	TVD Reference:	WELL @ 3749.0usft (Original Well Elev)
Site:	Abe State #2H	MD Reference:	WELL @ 3749.0usft (Original Well Elev)
Well:	Abe State #2H	North Reference:	Grid
Wellbore:	Abe State #2H	Survey Calculation Method:	Minimum Curvature
Design:	Abe State #2H	Database:	EDM 5000.1 Single User Db

Project Lea County			
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Abe State #2H			
Site Position:		Northing:	525,308.87 usft
From:	Map	Easting:	769,903.47 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 26' 31.056 N
		Longitude:	103° 35' 32.741 W
		Grid Convergence:	0.40 °

Well Abe State #2H			
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	525,741.95 usft
			Easting:
			771,523.46 usft
Position Uncertainty		0.0 usft	Wellhead Elevation:
			usft
			Latitude:
			32° 26' 35.230 N
			Longitude:
			103° 35' 13.803 W
			Ground Level:
			3,727.0 usft

Wellbore Abe State #2H			
Magnetics	Model Name	Sample Date	Declination
			(°)
			Dip Angle
			(°)
			Field Strength
			(nT)
	IGRF2010	22/07/2014	7.23
			60.31
			48,434

Design Abe State #2H			
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			359.40

Survey Program Date 09/09/2014			
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		Description
200.0	16,793.0	Survey #1 (Abe State #2H)	

Company:	B.C. Operating, Inc.	Local Co-ordinate Reference:	Well Abe State #2H
Project:	Lea County	TVD Reference:	WELL @ 3749.0usft (Original Well Elev)
Site:	Abe State 2H	MD Reference:	WELL @ 3749.0usft (Original Well Elev)
Well:	Abe State #2H	North Reference:	Grid
Wellbore:	Abe State #2H	Survey Calculation Method:	Minimum Curvature
Design:	Abe State #2H	Database:	EDM 5000.1' Single User.Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
0.0	0.00	0.00	0.0	-3,749.0	0.0	0.0	0.0	0.00	525,741.95	771,523.46	
200.0	0.70	157.46	200.0	-3,549.0	-1.1	0.5	-1.1	0.35	525,740.82	771,523.93	
300.0	0.96	156.77	300.0	-3,449.0	-2.5	1.0	-2.5	0.26	525,739.49	771,524.48	
400.0	0.94	161.39	400.0	-3,349.0	-4.0	1.6	-4.0	0.08	525,737.94	771,525.09	
500.0	0.91	153.26	500.0	-3,249.0	-5.5	2.2	-5.5	0.13	525,736.45	771,525.70	
600.0	1.05	154.48	599.9	-3,149.1	-7.0	3.0	-7.1	0.14	525,734.92	771,526.46	
700.0	0.98	161.57	699.9	-3,049.1	-8.7	3.7	-8.7	0.14	525,733.28	771,527.12	
800.0	0.97	157.85	799.9	-2,949.1	-10.3	4.3	-10.3	0.06	525,731.68	771,527.71	
900.0	1.14	166.61	899.9	-2,849.1	-12.0	4.8	-12.1	0.23	525,729.93	771,528.26	
1,000.0	1.17	167.46	999.9	-2,749.1	-14.0	5.3	-14.0	0.03	525,727.97	771,528.71	
1,100.0	1.18	174.65	1,099.9	-2,649.1	-16.0	5.6	-16.1	0.15	525,725.95	771,529.03	
1,200.0	1.10	181.38	1,199.8	-2,549.2	-18.0	5.6	-18.0	0.16	525,723.96	771,529.10	
1,300.0	1.14	184.39	1,299.8	-2,449.2	-19.9	5.5	-20.0	0.07	525,722.01	771,529.00	
1,302.0	1.14	184.59	1,301.8	-2,447.2	-20.0	5.5	-20.0	0.22	525,721.97	771,529.00	
Rustler											
1,400.0	1.24	193.73	1,399.8	-2,349.2	-22.0	5.2	-22.0	0.22	525,719.97	771,528.67	
1,500.0	1.16	199.42	1,499.8	-2,249.2	-24.0	4.6	-24.0	0.14	525,717.96	771,528.08	
1,600.0	1.25	196.19	1,599.7	-2,149.3	-26.0	4.0	-26.0	0.11	525,715.96	771,527.44	
1,700.0	1.25	196.81	1,699.7	-2,049.3	-28.1	3.4	-28.1	0.01	525,713.87	771,526.82	
1,710.0	1.25	196.21	1,709.7	-2,039.3	-28.3	3.3	-28.3	0.13	525,713.66	771,526.76	
13 3/8"											
1,800.0	1.25	190.83	1,799.7	-1,949.3	-30.2	2.8	-30.2	0.13	525,711.75	771,526.30	
1,900.0	1.13	188.72	1,899.7	-1,849.3	-32.2	2.5	-32.3	0.13	525,709.71	771,525.94	
2,000.0	1.20	186.69	1,999.7	-1,749.3	-34.3	2.2	-34.3	0.08	525,707.69	771,525.67	
2,100.0	1.17	183.07	2,099.6	-1,649.4	-36.3	2.0	-36.3	0.08	525,705.63	771,525.49	
2,200.0	1.07	186.65	2,199.6	-1,549.4	-38.3	1.9	-38.3	0.12	525,703.69	771,525.33	
2,300.0	0.98	177.74	2,299.6	-1,449.4	-40.0	1.8	-40.1	0.18	525,701.90	771,525.26	

Company:	B.C. Operating, Inc.					Local Co-ordinate Reference:			Well: Abe State #2H.		
Project:	Lea County					TVD Reference:			WELL @ 3749.0usft (Original Well Elev)		
Site:	Abe State #2H					MD Reference:			WELL @ 3749.0usft (Original Well Elev)		
Well:	Abe State #2H					North Reference:			Grid:		
Wellbore:	Abe State #2H					Survey Calculation Method:			Minimum Curvature		
Design:	Abe State #2H					Database:			EDM 5000.1 Single User Db		

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D Leg (°/100usft)	Northing (usft)	Easting (usft)	
2,400.0	0.84	170.34	2,399.6	-1,349.4	-41.6	2.0	-41.6	0.18	525,700.33	771,525.41	
2,500.0	1.02	153.85	2,499.6	-1,249.4	-43.1	2.5	-43.2	0.32	525,698.80	771,525.93	
2,600.0	0.98	152.85	2,599.6	-1,149.4	-44.7	3.3	-44.7	0.04	525,697.25	771,526.71	
2,700.0	1.13	145.67	2,699.5	-1,049.5	-46.3	4.2	-46.3	0.20	525,695.67	771,527.66	
2,800.0	1.57	125.07	2,799.5	-949.5	-47.9	5.9	-47.9	0.65	525,694.07	771,529.34	
2,900.0	2.06	119.93	2,899.5	-849.5	-49.6	8.6	-49.7	0.52	525,692.38	771,532.01	
3,000.0	2.87	112.73	2,999.4	-749.6	-51.4	12.4	-51.6	0.87	525,690.52	771,535.88	
3,100.0	3.08	108.63	3,099.2	-649.8	-53.3	17.3	-53.4	0.30	525,688.69	771,540.74	
3,200.0	3.42	105.96	3,199.1	-549.9	-54.9	22.7	-55.2	0.37	525,687.02	771,546.15	
3,300.0	3.69	102.69	3,298.9	-450.1	-56.5	28.7	-56.8	0.34	525,685.49	771,552.16	
3,400.0	3.77	102.21	3,398.7	-350.3	-57.9	35.0	-58.2	0.09	525,684.09	771,558.51	
3,500.0	3.96	103.37	3,498.4	-250.6	-59.4	41.6	-59.8	0.21	525,682.59	771,565.08	
3,600.0	3.51	102.31	3,598.2	-150.8	-60.8	48.0	-61.3	0.46	525,681.14	771,571.43	
3,700.0	3.21	101.76	3,698.1	-50.9	-62.0	53.7	-62.6	0.30	525,679.92	771,577.16	
3,800.0	3.21	100.71	3,797.9	48.9	-63.1	59.2	-63.7	0.06	525,678.83	771,582.66	
3,900.0	3.46	83.06	3,897.7	148.7	-63.3	64.9	-64.0	1.05	525,678.67	771,588.40	
4,000.0	3.55	73.52	3,997.5	248.5	-62.0	70.9	-62.8	0.59	525,679.92	771,594.37	
4,100.0	2.78	80.45	4,097.4	348.4	-60.8	76.3	-61.5	0.86	525,681.20	771,599.73	
4,200.0	1.11	80.99	4,197.3	448.3	-60.2	79.6	-61.0	1.67	525,681.75	771,603.07	
4,300.0	0.48	65.99	4,297.3	548.3	-59.9	81.0	-60.7	0.66	525,682.07	771,604.41	
4,400.0	0.50	62.24	4,397.3	648.3	-59.5	81.7	-60.4	0.04	525,682.45	771,605.18	
4,500.0	0.54	42.81	4,497.3	748.3	-59.0	82.4	-59.8	0.18	525,682.99	771,605.89	
4,600.0	0.53	39.38	4,597.3	848.3	-58.3	83.0	-59.1	0.03	525,683.70	771,606.50	
4,700.0	0.49	33.17	4,697.3	948.3	-57.5	83.6	-58.4	0.07	525,684.41	771,607.03	
4,800.0	0.41	30.31	4,797.3	1,048.3	-56.9	84.0	-57.7	0.08	525,685.08	771,607.44	
4,900.0	0.33	13.17	4,897.3	1,148.3	-56.3	84.2	-57.2	0.14	525,685.67	771,607.69	
5,000.0	0.22	323.33	4,997.3	1,248.3	-55.8	84.2	-56.7	0.25	525,686.10	771,607.64	

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Well: Abe State #2H		North Reference:				Grid	
Wellbore: Abe State #2H		Survey Calculation Method:				Minimum Curvature	
Design: Abe State #2H		Database:				EDM 5000.1 Single User Db	

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
5,100.0	0.22	289.70	5,097.3	1,348.3	-55.6	83.9	-56.5	0.13	525,686.32	771,607.35	
5,156.0	0.21	284.59	5,153.3	1,404.3	-55.6	83.7	-56.4	0.04	525,686.39	771,607.14	
9 5/8"											
5,200.0	0.21	280.39	5,197.3	1,448.3	-55.5	83.5	-56.4	0.04	525,686.42	771,606.99	
5,217.0	0.20	282.14	5,214.3	1,465.3	-55.5	83.5	-56.4	0.07	525,686.43	771,606.93	
Bell Canyon											
5,300.0	0.15	294.15	5,297.3	1,548.3	-55.4	83.2	-56.3	0.07	525,686.51	771,606.69	
5,400.0	0.21	276.64	5,397.3	1,648.3	-55.4	82.9	-56.2	0.08	525,686.58	771,606.38	
5,500.0	0.24	256.87	5,497.3	1,748.3	-55.4	82.5	-56.3	0.08	525,686.56	771,606.00	
5,600.0	0.11	290.87	5,597.3	1,848.3	-55.4	82.2	-56.3	0.16	525,686.54	771,605.70	
5,700.0	0.11	281.10	5,697.3	1,948.3	-55.4	82.1	-56.2	0.02	525,686.59	771,605.52	
5,800.0	0.16	238.45	5,797.3	2,048.3	-55.4	81.8	-56.3	0.11	525,686.54	771,605.31	
5,900.0	0.26	222.24	5,897.3	2,148.3	-55.7	81.6	-56.5	0.12	525,686.30	771,605.04	
6,000.0	0.24	228.13	5,997.3	2,248.3	-56.0	81.3	-56.8	0.03	525,685.99	771,604.73	
6,100.0	0.38	245.22	6,097.3	2,348.3	-56.2	80.8	-57.1	0.17	525,685.71	771,604.27	
6,134.0	0.40	243.78	6,131.3	2,382.3	-56.3	80.6	-57.2	0.06	525,685.61	771,604.06	
Cherry Canyon											
6,200.0	0.43	241.31	6,197.3	2,448.3	-56.6	80.2	-57.4	0.06	525,685.39	771,603.64	
6,300.0	0.31	254.66	6,297.3	2,548.3	-56.8	79.6	-57.6	0.15	525,685.14	771,603.05	
6,400.0	0.32	258.22	6,397.3	2,648.3	-56.9	79.1	-57.8	0.02	525,685.01	771,602.52	
6,500.0	0.27	247.55	6,497.3	2,748.3	-57.1	78.6	-57.9	0.07	525,684.87	771,602.02	
6,600.0	0.29	263.14	6,597.3	2,848.3	-57.2	78.1	-58.0	0.08	525,684.75	771,601.56	
6,700.0	0.39	270.82	6,697.3	2,948.3	-57.2	77.5	-58.0	0.11	525,684.72	771,600.96	
6,800.0	0.24	276.16	6,797.3	3,048.3	-57.2	77.0	-58.0	0.15	525,684.75	771,600.42	
6,900.0	0.25	276.58	6,897.3	3,148.3	-57.2	76.5	-58.0	0.01	525,684.80	771,599.99	
7,000.0	0.51	246.63	6,997.3	3,248.3	-57.3	75.9	-58.1	0.32	525,684.64	771,599.37	
7,100.0	0.61	246.28	7,097.3	3,348.3	-57.7	75.0	-58.5	0.10	525,684.25	771,598.47	

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Wellbore:	Abe State #2H					Survey Calculation Method:				Minimum Curvature	
Design:	Abe State #2H					Database:				EDM 5000.1 Single User Db	

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D Leg (°/100usft)	Northing (usft)	Easting (usft)	
7,200.0	0.66	247.83	7,197.3	3,448.3	-58.1	74.0	-58.9	0.05	525,683.82	771,597.45	
7,300.0	0.65	237.03	7,297.3	3,548.3	-58.7	73.0	-59.4	0.12	525,683.30	771,596.44	
7,400.0	0.78	248.66	7,397.2	3,648.2	-59.2	71.9	-60.0	0.19	525,682.74	771,595.33	
7,500.0	0.84	242.02	7,497.2	3,748.2	-59.8	70.6	-60.5	0.11	525,682.15	771,594.05	
7,514.0	0.84	241.95	7,511.2	3,762.2	-59.9	70.4	-60.6	0.02	525,682.05	771,593.87	
Brushy Canyon											
7,600.0	0.82	241.48	7,597.2	3,848.2	-60.5	69.3	-61.2	0.02	525,681.46	771,592.77	
7,700.0	0.97	242.96	7,697.2	3,948.2	-61.2	67.9	-61.9	0.15	525,680.74	771,591.39	
7,800.0	0.84	240.72	7,797.2	4,048.2	-62.0	66.5	-62.6	0.13	525,679.99	771,590.00	
7,900.0	0.90	233.49	7,897.2	4,148.2	-62.8	65.3	-63.5	0.12	525,679.17	771,588.73	
8,000.0	0.99	228.25	7,997.2	4,248.2	-63.8	64.0	-64.5	0.12	525,678.12	771,587.45	
8,100.0	0.82	227.42	8,097.2	4,348.2	-64.9	62.8	-65.5	0.17	525,677.06	771,586.28	
8,200.0	0.95	225.87	8,197.1	4,448.1	-65.9	61.7	-66.6	0.13	525,676.00	771,585.16	
8,300.0	0.93	227.05	8,297.1	4,548.1	-67.1	60.5	-67.7	0.03	525,674.87	771,583.97	
8,400.0	0.92	234.22	8,397.1	4,648.1	-68.1	59.3	-68.7	0.12	525,673.85	771,582.72	
8,500.0	1.10	233.09	8,497.1	4,748.1	-69.1	57.8	-69.7	0.18	525,672.80	771,581.30	
8,600.0	1.20	240.44	8,597.1	4,848.1	-70.2	56.2	-70.8	0.18	525,671.71	771,579.63	
8,700.0	1.37	243.51	8,697.1	4,948.1	-71.3	54.2	-71.8	0.18	525,670.66	771,577.64	
8,800.0	1.46	247.52	8,797.0	5,048.0	-72.3	51.9	-72.8	0.13	525,669.64	771,575.40	
8,900.0	1.55	264.92	8,897.0	5,148.0	-72.9	49.4	-73.4	0.46	525,669.03	771,572.87	
9,000.0	1.39	282.83	8,997.0	5,248.0	-72.8	46.9	-73.3	0.48	525,669.18	771,570.34	
9,100.0	0.96	314.90	9,096.9	5,347.9	-71.9	45.1	-72.4	0.77	525,670.05	771,568.57	
9,200.0	1.07	312.89	9,196.9	5,447.9	-70.7	43.8	-71.1	0.12	525,671.27	771,567.29	
9,268.0	1.26	292.11	9,264.9	5,515.9	-70.0	42.7	-70.4	0.68	525,671.99	771,566.13	
Avalon Shale											
9,300.0	1.40	284.78	9,296.9	5,547.9	-69.7	42.0	-70.2	0.68	525,672.22	771,565.42	
9,400.0	1.68	289.62	9,396.9	5,647.9	-68.9	39.4	-69.3	0.31	525,673.02	771,562.86	

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Site:	Abe State 2H						MD Reference:			WELL @ 3749.0usft (Original Well Elev)		
Well:	Abe State #2H						North Reference:			Grid		
Wellbore:	Abe State #2H						Survey Calculation Method:			Minimum Curvature		
Design:	Abe State #2H						Database:			EDM 5000.1' Single User Db.		
Survey												
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)		
9,500.0	1.23	299.12	9,496.8	5,747.8	-67.9	37.1	-68.3	0.51	525,674.04	771,560.54		
9,600.0	1.27	300.09	9,596.8	5,847.8	-66.8	35.2	-67.2	0.05	525,675.12	771,558.65		
9,700.0	1.87	304.82	9,696.8	5,947.8	-65.3	32.9	-65.7	0.61	525,676.60	771,556.35		
9,800.0	1.12	296.70	9,796.7	6,047.7	-64.0	30.7	-64.3	0.78	525,677.97	771,554.14		
9,900.0	1.88	287.76	9,896.7	6,147.7	-63.0	28.2	-63.3	0.79	525,678.91	771,551.70		
10,000.0	1.80	289.95	9,996.7	6,247.7	-62.0	25.2	-62.3	0.11	525,679.95	771,548.66		
10,100.0	1.75	288.39	10,096.6	6,347.6	-61.0	22.3	-61.2	0.07	525,680.97	771,545.74		
10,200.0	1.63	290.97	10,196.6	6,447.6	-60.0	19.5	-60.2	0.14	525,681.96	771,542.96		
10,227.0	1.64	290.56	10,223.6	6,474.6	-59.7	18.8	-59.9	0.07	525,682.23	771,542.24		
1st Bone Springs Sand												
10,300.0	1.68	289.48	10,296.5	6,547.5	-59.0	16.8	-59.2	0.07	525,682.96	771,540.25		
10,400.0	1.38	284.07	10,396.5	6,647.5	-58.2	14.2	-58.4	0.33	525,683.74	771,537.70		
10,500.0	0.88	276.00	10,496.5	6,747.5	-57.8	12.3	-58.0	0.52	525,684.11	771,535.77		
10,600.0	0.87	203.55	10,596.5	6,847.5	-58.5	11.2	-58.6	1.03	525,683.49	771,534.70		
10,700.0	1.26	186.33	10,696.4	6,947.4	-60.2	10.8	-60.4	0.50	525,681.71	771,534.28		
10,800.0	1.48	176.53	10,796.4	7,047.4	-62.6	10.8	-62.7	0.32	525,679.32	771,534.23		
10,900.0	1.75	177.60	10,896.4	7,147.4	-65.4	10.9	-65.6	0.27	525,676.51	771,534.38		
11,000.0	1.97	183.58	10,996.3	7,247.3	-68.7	10.9	-68.8	0.29	525,673.27	771,534.33		
11,088.0	1.77	186.58	11,084.3	7,335.3	-71.5	10.6	-71.6	0.26	525,670.41	771,534.08		
2nd Bone Springs Sand												
11,100.0	1.74	187.04	11,096.3	7,347.3	-71.9	10.6	-72.0	0.26	525,670.05	771,534.04		
11,200.0	1.58	201.96	11,196.2	7,447.2	-74.7	9.9	-74.8	0.46	525,667.26	771,533.34		
11,300.0	0.97	249.46	11,296.2	7,547.2	-76.3	8.6	-76.4	1.17	525,665.68	771,532.03		
11,400.0	1.21	255.13	11,396.2	7,647.2	-76.8	6.8	-76.9	0.26	525,665.12	771,530.22		
11,478.0	4.00	0.80	11,474.1	7,725.1	-74.3	6.0	-74.4	5.74	525,667.63	771,529.46		
11,494.0	5.00	12.50	11,490.1	7,741.1	-73.1	6.2	-73.1	8.45	525,668.87	771,529.62		
11,558.0	2.80	16.90	11,553.9	7,804.9	-68.9	7.2	-68.9	3.47	525,673.08	771,530.68		

Company:	B.C Operating, Inc.					Local Co-ordinate Reference:				Well Abe State #2H	
Project:	Lea County					TVD Reference:				WELL @ 3749.0usft (Original Well Elev)	
Site:	Abe State 2H					MD Reference:				WELL @ 3749.0usft (Original Well Elev)	
Well:	Abe State #2H					North Reference:				Grid	
Wellbore:	Abe State #2H					Survey Calculation Method:				Minimum Curvature	
Design:	Abe State #2H					Database:				EDM 5000.1 Single User Db	

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
11,621.0	7.40	5.20	11,616.6	7,867.6	-63.3	8.0	-63.4	7.45	525,678.60	771,531.49	
11,653.0	11.50	5.80	11,648.2	7,899.2	-58.1	8.5	-58.2	12.82	525,683.83	771,532.00	
11,683.0	15.70	4.70	11,677.4	7,928.4	-51.1	9.2	-51.2	14.03	525,690.85	771,532.64	
11,715.0	20.00	2.30	11,707.8	7,958.8	-41.3	9.7	-41.4	13.63	525,700.64	771,533.21	
11,747.0	24.20	359.00	11,737.5	7,988.5	-29.3	9.9	-29.4	13.68	525,712.67	771,533.32	
11,791.0	31.80	354.90	11,776.3	8,027.3	-8.7	8.7	-8.8	17.81	525,733.27	771,532.13	
11,806.0	34.50	354.00	11,788.8	8,039.8	-0.5	7.9	-0.6	18.30	525,741.43	771,531.33	
11,842.0	39.90	353.80	11,817.5	8,068.5	21.1	5.6	21.1	15.00	525,763.06	771,529.02	
11,874.0	44.40	354.60	11,841.2	8,092.2	42.5	3.4	42.4	14.16	525,784.42	771,526.85	
11,906.0	48.50	355.00	11,863.3	8,114.3	65.6	1.3	65.5	12.84	525,807.52	771,524.75	
11,938.0	52.20	356.20	11,883.7	8,134.7	90.1	-0.6	90.1	11.92	525,832.08	771,522.87	
12,003.0	60.41	356.77	11,919.7	8,170.7	144.1	-3.9	144.1	12.65	525,886.03	771,519.57	
Cross South Hard Boundary at 12003ftMD											
12,033.0	64.20	357.00	11,933.6	8,184.6	170.6	-5.3	170.6	12.65	525,912.53	771,518.13	
12,128.0	74.90	356.30	11,966.8	8,217.8	259.3	-10.5	259.4	11.28	526,001.26	771,512.91	
12,186.0	82.80	355.70	11,978.0	8,229.0	316.0	-14.5	316.2	13.66	526,057.98	771,508.94	
12,217.0	87.50	354.50	11,980.6	8,231.6	346.8	-17.2	347.0	15.64	526,088.75	771,506.31	
12,256.0	91.40	356.70	11,981.0	8,232.0	385.7	-20.1	385.9	11.48	526,127.62	771,503.31	
12,288.0	92.00	357.30	11,980.0	8,231.0	417.6	-21.8	417.8	2.65	526,159.56	771,501.64	
12,320.0	92.40	356.90	11,978.8	8,229.8	449.5	-23.4	449.8	1.77	526,191.50	771,500.02	
12,415.0	93.30	358.70	11,974.1	8,225.1	544.4	-27.1	544.6	2.12	526,286.30	771,496.38	
12,511.0	93.10	359.90	11,968.7	8,219.7	640.2	-28.3	640.5	1.27	526,382.15	771,495.21	
12,606.0	93.20	359.80	11,963.5	8,214.5	735.1	-28.5	735.3	0.15	526,477.00	771,494.96	
12,701.0	92.70	1.60	11,958.6	8,209.6	829.9	-27.3	830.2	1.96	526,571.86	771,496.12	
12,797.0	93.10	1.90	11,953.8	8,204.8	925.7	-24.4	925.9	0.52	526,667.70	771,499.05	
12,892.0	93.90	1.60	11,948.0	8,199.0	1,020.5	-21.5	1,020.7	0.90	526,762.47	771,501.94	
12,988.0	92.90	2.30	11,942.3	8,193.3	1,116.3	-18.3	1,116.4	1.27	526,858.25	771,505.21	

Company: B.C. Operating, Inc.			Local Co-ordinate Reference:			Well Abe State #2H:		
Project: Lea County			TVD Reference:			WELL @ 3749.0usft (Original Well Elev)		
Site: Abe State 2H			MD Reference:			WELL @ 3749.0usft (Original Well Elev)		
Well: Abe State #2H			North Reference:			Grid		
Wellbore: Abe State #2H			Survey Calculation Method:			Minimum Curvature		
Design: Abe State #2H			Database:			EDM 5000.1 Single User Db		

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
13,084.0	92.60	0.70	11,937.7	8,188.7	1,212.1	-15.7	1,212.2	1.69	526,954.10	771,507.72	
13,179.0	90.90	359.80	11,934.8	8,185.8	1,307.1	-15.3	1,307.2	2.02	527,049.05	771,508.13	
13,274.0	91.80	359.30	11,932.5	8,183.5	1,402.1	-16.1	1,402.2	1.08	527,144.02	771,507.38	
13,369.0	89.90	359.50	11,931.1	8,182.1	1,497.0	-17.1	1,497.1	2.01	527,239.00	771,506.39	
13,464.0	90.30	359.20	11,931.0	8,182.0	1,592.0	-18.1	1,592.1	0.53	527,333.99	771,505.31	
13,559.0	91.20	359.60	11,929.7	8,180.7	1,687.1	-19.1	1,687.2	1.04	527,429.00	771,504.32	
13,654.0	90.20	0.50	11,928.5	8,179.5	1,782.0	-19.1	1,782.1	1.42	527,523.97	771,504.40	
13,749.0	91.70	0.70	11,927.0	8,178.0	1,877.0	-18.1	1,877.1	1.59	527,618.95	771,505.39	
13,844.0	90.80	0.30	11,924.9	8,175.9	1,972.0	-17.2	1,972.0	1.04	527,713.92	771,506.22	
13,940.0	91.50	359.00	11,923.0	8,174.0	2,067.9	-17.8	2,068.0	1.54	527,809.90	771,505.64	
14,035.0	88.90	358.00	11,922.6	8,173.6	2,162.9	-20.3	2,163.0	2.93	527,904.85	771,503.15	
14,131.0	89.70	358.10	11,923.8	8,174.8	2,258.8	-23.6	2,259.0	0.84	528,000.79	771,499.88	
14,227.0	88.90	358.60	11,925.0	8,176.0	2,354.8	-26.3	2,354.9	0.98	528,096.74	771,497.12	
14,322.0	89.70	358.30	11,926.2	8,177.2	2,449.7	-28.9	2,449.9	0.90	528,191.70	771,494.55	
14,418.0	91.30	358.20	11,925.3	8,176.3	2,545.7	-31.8	2,545.9	1.67	528,287.65	771,491.62	
14,513.0	90.90	0.60	11,923.5	8,174.5	2,640.7	-32.8	2,640.9	2.56	528,382.62	771,490.62	
14,608.0	91.30	0.80	11,921.7	8,172.7	2,735.6	-31.7	2,735.8	0.47	528,477.59	771,491.78	
14,754.0	90.80	0.90	11,919.0	8,170.0	2,881.6	-29.5	2,881.8	0.35	528,623.55	771,493.95	
14,800.0	91.70	0.30	11,918.0	8,169.0	2,927.6	-29.0	2,927.7	2.35	528,669.54	771,494.43	
14,895.0	91.90	0.80	11,915.0	8,166.0	3,022.5	-28.1	3,022.7	0.57	528,764.48	771,495.34	
14,991.0	93.10	359.50	11,910.8	8,161.8	3,118.4	-27.9	3,118.6	1.84	528,860.39	771,495.59	
15,087.0	92.00	359.90	11,906.5	8,157.5	3,214.3	-28.4	3,214.5	1.22	528,956.29	771,495.09	
15,182.0	91.80	0.00	11,903.4	8,154.4	3,309.3	-28.5	3,309.4	0.24	529,051.24	771,495.01	
15,278.0	90.60	359.50	11,901.4	8,152.4	3,405.3	-28.9	3,405.4	1.35	529,147.21	771,494.59	
15,373.0	90.50	358.70	11,900.5	8,151.5	3,500.2	-30.4	3,500.4	0.85	529,242.20	771,493.10	
15,468.0	91.10	359.50	11,899.1	8,150.1	3,595.2	-31.9	3,595.4	1.05	529,337.17	771,491.61	
15,564.0	91.40	359.00	11,897.1	8,148.1	3,691.2	-33.1	3,691.3	0.61	529,433.14	771,490.35	

Company:	B.C. Operating, Inc.	Local Co-ordinate Reference:	Well Abe State #2H
Project:	Lea County	TVD Reference:	WELL @ 3749.0usft (Original Well Elev)
Site:	Abe State 2H	MD Reference:	WELL @ 3749.0usft (Original Well Elev)
Well:	Abe State #2H	North Reference:	Grid
Wellbore:	Abe State #2H	Survey Calculation Method:	Minimum Curvature
Design:	Abe State #2H	Database:	EDM 5000.1 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D Leg (°/100usft)	Northing (usft)	Easting (usft)	
15,660.0	92.20	358.50	11,894.0	8,145.0	3,787.1	-35.2	3,787.3	0.98	529,529.07	771,488.26	
15,755.0	92.20	359.40	11,890.4	8,141.4	3,882.0	-36.9	3,882.2	0.95	529,623.98	771,486.52	
15,850.0	92.60	358.00	11,886.4	8,137.4	3,976.9	-39.1	3,977.1	1.53	529,718.87	771,484.36	
15,945.0	91.80	358.70	11,882.8	8,133.8	4,071.8	-41.8	4,072.0	1.12	529,813.76	771,481.63	
16,041.0	91.60	358.80	11,879.9	8,130.9	4,167.7	-43.9	4,168.0	0.23	529,909.70	771,479.54	
16,137.0	91.20	359.10	11,877.6	8,128.6	4,263.7	-45.7	4,263.9	0.52	530,005.65	771,477.78	
16,232.0	90.10	0.10	11,876.5	8,127.5	4,358.7	-46.3	4,358.9	1.56	530,100.64	771,477.12	
16,327.0	91.20	359.50	11,875.4	8,126.4	4,453.7	-46.7	4,453.9	1.32	530,195.63	771,476.78	
16,423.0	92.00	358.40	11,872.7	8,123.7	4,549.6	-48.4	4,549.9	1.42	530,291.57	771,475.03	
16,518.0	93.70	357.60	11,868.0	8,119.0	4,644.4	-51.7	4,644.7	1.98	530,386.40	771,471.72	
16,614.0	93.20	357.00	11,862.2	8,113.2	4,740.2	-56.3	4,740.5	0.81	530,482.11	771,467.20	
16,636.0	93.57	356.70	11,860.9	8,111.9	4,762.1	-57.5	4,762.5	2.17	530,504.08	771,465.99	
Cross North Hard Boundary at 16636ftMD											
16,709.0	94.80	355.70	11,855.6	8,106.6	4,834.7	-62.3	4,835.1	2.17	530,576.68	771,461.17	
16,743.0	95.30	355.90	11,852.6	8,103.6	4,868.5	-64.8	4,868.9	1.58	530,610.46	771,458.69	
16,782.0	95.30	355.90	11,849.0	8,100.0	4,907.3	-67.5	4,907.7	0.00	530,649.23	771,455.91	
5 1/2"											
16,793.0	95.30	355.90	11,848.0	8,099.0	4,918.2	-68.3	4,918.6	0.00	530,660.15	771,455.13	
TD@ 16793ftMD/ 11848ft TVD											

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,710.0	1,709.7	13 3/8"	13-3/8	16	
5,156.0	5,153.3	9 5/8"	9-5/8	12-1/4	
16,782.0	11,849.0	5 1/2"	5-1/2	8-1/2	

Company:	B.C. Operating, Inc.	Local Co-ordinate Reference:	Well Abe State #2H
Project:	Lea County	TVD Reference:	WELL @ 3749.0usft (Original Well Elev)
Site:	Abe State 2H	MD Reference:	WELL @ 3749.0usft (Original Well Elev)
Well:	Abe State #2H	North Reference:	Grid
Wellbore:	Abe State #2H	Survey Calculation Method:	Minimum Curvature
Design:	Abe State #2H	Database:	EDM 5000.1 Single User Db

Formations				
Measured Depth (usft)	Vertical Depth (usft)	Name	Dip (°)	
10,227.0	10,223.6	1st Bone Springs Sand	0.00	
6,134.0	6,131.3	Cherry Canyon	0.00	
1,302.0	1,301.8	Rusiler	0.00	
5,217.0	5,214.3	Bell Canyon	0.00	
9,268.0	9,264.9	Avalon Shale	0.00	
11,088.0	11,084.3	2nd Bone Springs Sand	0.00	
7,514.0	7,511.2	Brushy Canyon	0.00	

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,003.0	11,919.7	144.1	-3.9	Cross South Hard Boundary at 12003ftMD
16,636.0	11,860.9	4,762.1	-57.5	Cross North Hard Boundary at 16636ftMD
16,793.0	11,848.0	4,918.2	-68.3	TD@ 16793ftMD/ 11848ft TVD

Checked By: _____ Approved By: _____ Date: _____