



PHOENIX
TECHNOLOGY SERVICES

February 23, 2017

BC Operating
Attention: Regulatory Department
303 Veterans Airpark Lane #6101
PO Box 50820, Midland, TX. 70710
Midland, TX 79705

NM OIL CONSERVATION
ARTESIA DISTRICT

MAY 19 2017

RECEIVED

Re: BC Operating
Black River 15-10 State Com X 4H
Eddy County, NM
API #30-015-43959
Job No. 60762

Dear Regulatory Department;

Phoenix Technology Services, Inc. has filed the Survey Data Certification, Surveys, and Lease Plat for the above referenced well with the State of New Mexico Oil Conservation Division – District 2 via certified mail. A copy of the filing is attached for your records.

Name of Surveyor	Drain Hole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Larry Seebeck	4H	507	18,148	01/29/17	02/17/17	MWD

Thank you for the opportunity to be of service. Please contact me if you have any questions or require additional information.

Best Regards,

Brittany Carley

Brittany Carley
Operations Administrator

Phoenix Technology Services
SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER 60762

ENERGY COMPANY BC Operating

WELL NAME Black River 15-10 State Com X 4H

COUNTY & STATE

Eddy, New Mexico

API WELL NUMBER	30-015-43959
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PROPOSED DIRECTION	359.35
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TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
432.00 ft	431.87 ft	2.85	267.65	-.79 ft	-7.82 ft	Gyro

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
29-Jan-17	507.00 ft	2.53	277.68

SURVEY INSTRUMENT
TYPE
Phoenix MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
17-Feb-17	18,148.00 ft	92.44	357.33

TO THE BEST OF MY KNOWLEDGE I
CERTIFY THIS SURVEY DATA TO BE
TRUE AND CORRECT.

PROJECTED	PROJECTED		
TD SURVEY	TD SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
17-Feb-17	18,250.00 ft	92.44	357.33

Larry Seebeck

PRINT YOUR NAME ABOVE

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	7.36
DECLINATION OR GRID	GRID

21-Feb

TODAY'S DATE

MWD SUPERVISOR 1

Larry Seebeck

DIRECTIONAL DRILLER 1

Ruben Cano

MWD SUPERVISOR 2

Michael Johnson

DIRECTIONAL DRILLER 2

Vinn Adams



NM OIL CONSERVATION
ARTESIA DISTRICT

MAY 19 2017

RECEIVED

BC Operating, Inc.

**Eddy County, New Mexico (NAD27)
Black River 15-10 State Com X
4H**

OH / Job #60762

Survey: Phoenix MWD Surveys

Standard Survey Report

22 February, 2017



Company: BC Operating, Inc.
Project: Eddy County, New Mexico (NAD27)
Site: Black River 15-10 State Com X
Well: 4H
Wellbore: OH / Job #60762
Design: Surveys (Patterson 244)

Local Co-ordinate Reference: Well 4H
TVD Reference: GL + KB @ 3258.50usft (Patterson 244)
MD Reference: GL + KB @ 3258.50usft (Patterson 244)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

Project	Eddy County, New Mexico (NAD27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Black River 15-10 State Com X

Site Position: **Northing:** 440,232.28 usft **Latitude:** 32° 12' 36.75931 N
From: Map **Easting:** 550,327.77 usft **Longitude:** 104° 10' 14.19848 W
Position Uncertainty: 0.00 usft **Slot Radius:** 13-3/16 " **Grid Convergence:** 0.09 °

Well 4H
Well Position **+N/-S** 0.00 usft **Northing:** 440,232.28 usft **Latitude:** 32° 12' 36.75931 N
+E/-W 0.00 usft **Easting:** 550,327.77 usft **Longitude:** 104° 10' 14.19848 W
Position Uncertainty 0.00 usft **Wellhead Elevation:** 0.00 usft **Ground Level:** 3,230.00 usft

Wellbore OH / Job #60762

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	2/1/2017	7.45	60.02	48,118

Design Surveys (Patterson 244)

Audit Notes:

Version: 1.0 **Phase:** ACTUAL **Tie On Depth:** 0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.35

Survey Program Date 2/22/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
109.00	432.00	Phoenix Gyro Surveys (OH / Job #60762)	SPT_GTD	Continuous north-seeking gyro
432.00	18,250.00	Phoenix MWD Surveys (OH / Job #60762)	MWD+HDGM	OWSG Rev.2 MWD + HDGM

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
432.00	2.85	267.65	431.87	-0.79	-7.82	-0.71	0.00	0.00	0.00
Tie In									
507.00	2.53	277.68	506.79	-0.65	-11.33	-0.52	0.76	-0.43	13.37
First Phoenix MWD Survey									
690.00	1.04	335.42	689.71	1.40	-16.02	1.58	1.18	-0.81	31.55
781.00	0.64	32.25	780.70	2.58	-16.09	2.76	0.96	-0.44	62.45
873.00	0.74	43.23	872.69	3.45	-15.41	3.62	0.18	0.11	11.93
965.00	2.69	50.53	964.65	5.25	-13.34	5.41	2.13	2.12	7.93
1,057.00	0.62	62.81	1,056.60	6.85	-11.23	6.98	2.27	-2.25	13.35

Company:	BC Operating, Inc.	Local Co-ordinate Reference:	Well 4H
Project:	Eddy County, New Mexico (NAD27)	TVD Reference:	GL + KB @ 3258.50usft (Patterson 244)
Site:	Black River 15-10 State Com X	MD Reference:	GL + KB @ 3258.50usft (Patterson 244)
Well:	4H	North Reference:	Grid
Wellbore:	OH / Job #60762	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Patterson 244)	Database:	Compass 5000 GCR

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,148.00	0.22	120.89	1,147.60	6.99	-10.64	7.11	0.59	-0.44	63.82
1,240.00	0.05	10.55	1,239.60	6.94	-10.48	7.06	0.26	-0.18	-119.93
1,330.00	0.27	340.80	1,329.60	7.18	-10.54	7.30	0.25	0.24	-33.06
1,422.00	0.36	307.86	1,421.60	7.56	-10.84	7.68	0.22	0.10	-35.80
1,514.00	0.52	20.99	1,513.60	8.13	-10.92	8.25	0.59	0.17	79.49
1,606.00	1.35	65.22	1,605.59	8.97	-9.79	9.08	1.13	0.90	48.08
1,701.00	2.29	75.05	1,700.54	9.93	-6.94	10.01	1.04	0.99	10.35
1,795.00	0.69	66.33	1,794.50	10.64	-4.61	10.69	1.71	-1.70	-9.28
1,889.00	0.97	90.55	1,888.49	10.86	-3.29	10.90	0.47	0.30	25.77
1,983.00	2.06	92.76	1,982.46	10.77	-0.81	10.78	1.16	1.16	2.35
2,078.00	1.31	108.24	2,077.42	10.35	1.93	10.33	0.92	-0.79	16.29
2,172.00	1.14	110.14	2,171.40	9.69	3.83	9.65	0.19	-0.18	2.02
2,266.00	0.95	112.71	2,265.38	9.07	5.42	9.01	0.21	-0.20	2.73
2,313.00	0.91	113.38	2,312.37	8.77	6.13	8.70	0.09	-0.09	1.43
2,451.00	0.68	122.32	2,450.36	7.90	7.82	7.81	0.19	-0.17	6.48
2,545.00	0.52	110.77	2,544.36	7.45	8.69	7.35	0.21	-0.17	-12.29
2,639.00	0.67	198.12	2,638.35	6.77	8.92	6.67	0.88	0.16	92.93
2,733.00	0.66	198.96	2,732.35	5.74	8.58	5.64	0.01	-0.01	0.89
2,828.00	1.21	263.33	2,827.34	5.11	7.40	5.02	1.16	0.58	67.76
2,923.00	1.16	255.29	2,922.31	4.75	5.47	4.68	0.18	-0.05	-8.46
3,018.00	1.23	253.96	3,017.29	4.22	3.56	4.18	0.08	0.07	-1.40
3,113.00	1.15	257.86	3,112.27	3.74	1.65	3.72	0.12	-0.08	4.11
3,207.00	1.13	261.60	3,206.26	3.40	-0.19	3.41	0.08	-0.02	3.98
3,301.00	1.17	263.48	3,300.24	3.16	-2.06	3.18	0.06	0.04	2.00
3,396.00	1.14	262.55	3,395.22	2.93	-3.96	2.97	0.04	-0.03	-0.98
3,490.00	1.06	263.06	3,489.20	2.70	-5.75	2.77	0.09	-0.09	0.54
3,585.00	1.06	266.26	3,584.18	2.54	-7.50	2.62	0.06	0.00	3.37
3,679.00	1.11	268.05	3,678.17	2.45	-9.27	2.55	0.06	0.05	1.90
3,773.00	1.10	265.75	3,772.15	2.35	-11.08	2.48	0.05	-0.01	-2.45
3,867.00	1.08	261.02	3,866.13	2.15	-12.86	2.29	0.10	-0.02	-5.03
3,961.00	1.05	256.04	3,960.12	1.80	-14.57	1.97	0.10	-0.03	-5.30
4,056.00	0.99	259.49	4,055.10	1.44	-16.22	1.62	0.09	-0.06	3.63
4,150.00	0.83	253.54	4,149.09	1.10	-17.67	1.30	0.20	-0.17	-6.33
4,245.00	0.76	250.48	4,244.08	0.69	-18.93	0.91	0.09	-0.07	-3.22
4,339.00	0.54	257.58	4,338.07	0.39	-19.95	0.62	0.25	-0.23	7.55
4,434.00	0.40	222.47	4,433.07	0.05	-20.61	0.28	0.33	-0.15	-36.96
4,528.00	0.53	196.90	4,527.07	-0.61	-20.96	-0.37	0.26	0.14	-27.20
4,622.00	0.70	229.89	4,621.06	-1.39	-21.52	-1.15	0.41	0.18	35.10
4,716.00	0.78	231.29	4,715.05	-2.16	-22.46	-1.91	0.09	0.09	1.49
4,810.00	0.91	233.65	4,809.04	-3.01	-23.56	-2.74	0.14	0.14	2.51
4,904.00	0.92	246.97	4,903.03	-3.75	-24.86	-3.46	0.23	0.01	14.17
4,998.00	0.91	255.76	4,997.02	-4.22	-26.27	-3.92	0.15	-0.01	9.35
5,092.00	0.95	248.09	5,091.01	-4.70	-27.72	-4.38	0.14	0.04	-8.16

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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,186.00	0.73	249.25	5,185.00	-5.20	-29.00	-4.87	0.23	-0.23	1.23
5,281.00	0.79	251.62	5,279.99	-5.62	-30.19	-5.28	0.07	0.06	2.49
5,375.00	0.72	259.35	5,373.98	-5.94	-31.39	-5.58	0.13	-0.07	8.22
5,469.00	0.66	244.75	5,467.97	-6.28	-32.46	-5.91	0.20	-0.06	-15.53
5,563.00	0.49	215.24	5,561.97	-6.84	-33.18	-6.46	0.36	-0.18	-31.39
5,657.00	0.51	215.68	5,655.97	-7.50	-33.65	-7.12	0.02	0.02	0.47
5,752.00	0.60	193.60	5,750.96	-8.33	-34.02	-7.94	0.24	0.09	-23.24
5,846.00	1.79	230.84	5,844.94	-9.74	-35.27	-9.33	1.45	1.27	39.62
5,940.00	2.51	252.31	5,938.88	-11.29	-38.37	-10.85	1.14	0.77	22.84
6,034.00	1.90	242.24	6,032.81	-12.64	-41.71	-12.16	0.77	-0.65	-10.71
6,129.00	1.23	211.18	6,127.77	-14.25	-43.63	-13.75	1.11	-0.71	-32.69
6,222.00	0.49	355.10	6,220.77	-14.70	-44.18	-14.20	1.78	-0.80	154.75
6,317.00	2.05	338.73	6,315.74	-12.71	-44.83	-12.20	1.67	1.64	-17.23
6,411.00	1.96	325.03	6,409.68	-9.83	-46.37	-9.30	0.52	-0.10	-14.57
6,506.00	1.43	85.24	6,504.66	-8.40	-46.12	-7.88	3.11	-0.56	126.54
6,600.00	1.94	56.23	6,598.62	-7.42	-43.62	-6.92	1.04	0.54	-30.86
6,694.00	1.32	30.07	6,692.58	-5.60	-41.76	-5.12	1.01	-0.66	-27.83
6,789.00	0.84	345.79	6,787.57	-3.98	-41.38	-3.50	0.98	-0.51	-46.61
6,883.00	1.71	293.79	6,881.55	-2.74	-42.83	-2.25	1.45	0.93	-55.32
6,978.00	2.28	278.99	6,976.49	-1.87	-46.00	-1.35	0.80	0.60	-15.58
7,072.00	2.78	276.94	7,070.40	-1.31	-50.11	-0.74	0.54	0.53	-2.18
7,166.00	3.05	271.05	7,164.28	-0.99	-54.87	-0.36	0.43	0.29	-6.27
7,261.00	3.00	234.95	7,259.15	-2.37	-59.43	-1.69	1.97	-0.05	-38.00
7,356.00	2.43	240.12	7,354.05	-4.80	-63.21	-4.08	0.65	-0.60	5.44
7,450.00	1.34	231.07	7,447.99	-6.48	-65.80	-5.73	1.20	-1.16	-9.63
7,544.00	0.43	299.89	7,541.98	-7.00	-66.96	-6.23	1.33	-0.97	73.21
7,639.00	0.68	327.72	7,636.98	-6.34	-67.57	-5.57	0.38	0.26	29.29
7,733.00	0.71	312.90	7,730.97	-5.47	-68.29	-4.70	0.19	0.03	-15.77
7,828.00	0.89	301.71	7,825.96	-4.69	-69.35	-3.90	0.25	0.19	-11.78
7,922.00	1.03	334.19	7,919.95	-3.54	-70.34	-2.74	0.59	0.15	34.55
8,016.00	1.00	112.91	8,013.94	-3.10	-69.95	-2.30	2.02	-0.03	147.57
8,111.00	2.18	112.44	8,108.91	-4.11	-67.52	-3.34	1.24	1.24	-0.49
8,205.00	1.73	118.14	8,202.85	-5.46	-64.62	-4.73	0.52	-0.48	6.06
8,299.00	1.40	113.25	8,296.82	-6.59	-62.31	-5.88	0.38	-0.35	-5.20
8,405.00	1.35	65.79	8,402.79	-6.59	-59.98	-5.90	1.04	-0.05	-44.77
8,499.00	1.63	69.43	8,496.76	-5.66	-57.72	-5.00	0.31	0.30	3.87
8,593.00	3.52	18.04	8,590.67	-2.45	-55.57	-1.82	2.99	2.01	-54.67
8,641.00	9.12	1.24	8,638.36	2.76	-55.03	3.39	12.16	11.67	-35.00
8,688.00	14.69	1.92	8,684.33	12.45	-54.75	13.07	11.85	11.85	1.45
8,735.00	20.63	2.72	8,729.10	26.69	-54.16	27.30	12.65	12.64	1.70
8,783.00	26.72	0.13	8,773.04	45.94	-53.73	46.55	12.87	12.69	-5.40
8,830.00	31.75	358.61	8,814.04	68.89	-54.01	69.50	10.82	10.70	-3.23
8,877.00	34.88	356.26	8,853.31	94.67	-55.19	95.29	7.20	6.66	-5.00
8,925.00	38.62	358.00	8,891.77	123.34	-56.61	123.98	8.09	7.79	3.63

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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,972.00	41.77	359.82	8,927.66	153.67	-57.17	154.31	7.15	6.70	3.87
8,982.84	42.41	359.68	8,935.71	160.93	-57.20	161.57	5.93	5.87	-1.31
Hardline Crossing									
9,019.00	44.53	359.23	8,961.95	185.81	-57.44	186.45	5.93	5.87	-1.24
9,066.00	47.19	358.00	8,994.68	219.52	-58.26	220.17	5.96	5.66	-2.62
9,114.00	50.79	355.95	9,026.17	255.68	-60.19	256.35	8.16	7.50	-4.27
9,161.00	53.64	355.11	9,054.97	292.71	-63.09	293.41	6.23	6.06	-1.79
9,209.00	57.44	355.14	9,082.12	332.13	-66.45	332.87	7.92	7.92	0.06
9,256.00	61.34	355.74	9,106.05	372.45	-69.66	373.22	8.37	8.30	1.28
9,303.00	64.84	356.48	9,127.32	414.26	-72.50	415.05	7.58	7.45	1.57
9,351.00	68.01	359.03	9,146.52	458.21	-74.21	459.02	8.20	6.60	5.31
9,398.00	71.87	0.63	9,162.64	502.34	-74.34	503.16	8.81	8.21	3.40
9,417.00	73.55	0.02	9,168.28	520.48	-74.23	521.30	9.36	8.84	-3.21
9,515.00	83.80	359.30	9,187.50	616.45	-74.81	617.26	10.48	10.46	-0.73
9,609.00	87.60	359.10	9,194.55	710.16	-76.12	710.98	4.05	4.04	-0.21
9,703.00	91.52	358.88	9,195.27	804.12	-77.78	804.95	4.18	4.17	-0.23
9,797.00	92.38	358.96	9,192.07	898.05	-79.55	898.89	0.92	0.91	0.09
9,891.00	91.07	358.64	9,189.24	991.98	-81.52	992.85	1.43	-1.39	-0.34
9,985.00	89.39	357.91	9,188.86	1,085.93	-84.35	1,086.82	1.95	-1.79	-0.78
10,079.00	88.66	357.54	9,190.46	1,179.85	-88.08	1,180.77	0.87	-0.78	-0.39
10,173.00	88.46	357.47	9,192.83	1,273.73	-92.17	1,274.69	0.23	-0.21	-0.07
10,267.00	90.95	359.18	9,193.31	1,367.68	-94.92	1,368.67	3.21	2.65	1.82
10,360.00	88.71	358.79	9,193.59	1,460.65	-96.56	1,461.66	2.44	-2.41	-0.42
10,454.00	93.42	0.57	9,191.84	1,554.61	-97.09	1,555.61	5.36	5.01	1.89
10,547.00	91.71	359.73	9,187.68	1,647.51	-96.85	1,648.50	2.05	-1.84	-0.90
10,641.00	91.51	359.29	9,185.04	1,741.47	-97.65	1,742.47	0.51	-0.21	-0.47
10,734.00	89.27	358.51	9,184.40	1,834.44	-99.44	1,835.45	2.55	-2.41	-0.84
10,827.00	94.32	1.64	9,181.49	1,927.35	-99.32	1,928.36	6.39	5.43	3.37
10,919.00	93.51	2.07	9,175.21	2,019.09	-96.35	2,020.06	1.00	-0.88	0.47
11,012.00	91.88	1.97	9,170.84	2,111.93	-93.07	2,112.85	1.76	-1.75	-0.11
11,102.00	90.30	1.50	9,169.12	2,201.87	-90.35	2,202.75	1.83	-1.76	-0.52
11,194.00	88.57	0.61	9,170.03	2,293.84	-88.65	2,294.70	2.11	-1.88	-0.97
11,288.00	88.63	1.22	9,172.33	2,387.80	-87.15	2,388.64	0.65	0.06	0.65
11,380.00	90.95	1.84	9,172.67	2,479.76	-84.70	2,480.56	2.61	2.52	0.67
11,471.00	92.86	2.58	9,169.64	2,570.64	-81.19	2,571.40	2.25	2.10	0.81
11,564.00	90.64	0.96	9,166.80	2,663.54	-78.32	2,664.26	2.95	-2.39	-1.74
11,654.00	89.47	0.98	9,166.71	2,753.53	-76.80	2,754.22	1.30	-1.30	0.02
11,746.00	88.96	0.23	9,167.97	2,845.51	-75.82	2,846.19	0.99	-0.55	-0.82
11,836.00	91.57	0.46	9,167.56	2,935.50	-75.28	2,936.17	2.91	2.90	0.26
11,929.00	90.90	0.42	9,165.55	3,028.48	-74.57	3,029.13	0.72	-0.72	-0.04
12,023.00	91.12	0.66	9,163.90	3,122.46	-73.68	3,123.09	0.35	0.23	0.26
12,116.00	89.58	0.40	9,163.33	3,215.45	-72.82	3,216.07	1.68	-1.66	-0.28
12,209.00	85.51	359.71	9,167.31	3,308.34	-72.73	3,308.96	4.44	-4.38	-0.74

Company: BC Operating, Inc.
Project: Eddy County, New Mexico (NAD27)
Site: Black River 15-10 State Com X
Well: 4H
Wellbore: OH / Job #60762
Design: Surveys (Patterson 244)

Local Co-ordinate Reference: Well 4H
TVD Reference: GL + KB @ 3258.50usft (Patterson 244)
MD Reference: GL + KB @ 3258.50usft (Patterson 244)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,304.00	86.08	0.08	9,174.28	3,403.09	-72.91	3,403.70	0.71	0.60	0.39
12,398.00	87.93	0.70	9,179.19	3,496.95	-72.27	3,497.55	2.08	1.97	0.66
12,491.00	91.31	2.67	9,179.81	3,589.89	-69.53	3,590.45	4.21	3.63	2.12
12,585.00	89.16	2.20	9,179.42	3,683.80	-65.54	3,684.31	2.34	-2.29	-0.50
12,679.00	90.51	2.96	9,179.69	3,777.70	-61.31	3,778.16	1.65	1.44	0.81
12,773.00	88.38	1.91	9,180.60	3,871.61	-57.31	3,872.01	2.53	-2.27	-1.12
12,867.00	91.55	1.05	9,180.66	3,965.56	-54.89	3,965.93	3.49	3.37	-0.91
12,961.00	89.86	359.65	9,179.50	4,059.55	-54.31	4,059.90	2.33	-1.80	-1.49
13,056.00	90.06	0.08	9,179.57	4,154.55	-54.54	4,154.90	0.50	0.21	0.45
13,150.00	90.10	1.70	9,179.44	4,248.53	-53.08	4,248.86	1.72	0.04	1.72
13,244.00	86.41	358.96	9,182.30	4,342.46	-52.53	4,342.78	4.89	-3.93	-2.91
13,338.00	88.82	356.99	9,186.21	4,436.31	-55.85	4,436.66	3.31	2.56	-2.10
13,432.00	86.24	356.76	9,190.26	4,530.08	-60.97	4,530.48	2.76	-2.74	-0.24
13,526.00	90.79	355.21	9,192.70	4,623.79	-67.55	4,624.25	5.11	4.84	-1.65
13,621.00	88.30	354.90	9,193.45	4,718.42	-75.74	4,718.98	2.64	-2.62	-0.33
13,715.00	90.40	354.70	9,194.52	4,812.02	-84.26	4,812.67	2.24	2.23	-0.21
13,809.00	87.39	353.92	9,196.33	4,905.53	-93.57	4,906.28	3.31	-3.20	-0.83
13,903.00	89.50	352.97	9,198.88	4,998.88	-104.30	4,999.74	2.46	2.24	-1.01
13,998.00	95.24	355.53	9,194.95	5,093.27	-113.81	5,094.23	6.61	6.04	2.69
14,092.00	96.52	356.84	9,185.32	5,186.56	-120.03	5,187.59	1.94	1.36	1.39
14,186.00	95.78	358.65	9,175.25	5,279.95	-123.71	5,281.01	2.07	-0.79	1.93
14,280.00	92.70	0.40	9,168.30	5,373.67	-124.48	5,374.74	3.77	-3.28	1.86
14,374.00	93.37	0.80	9,163.33	5,467.53	-123.50	5,468.58	0.83	0.71	0.43
14,469.00	90.87	2.68	9,159.81	5,562.41	-120.62	5,563.42	3.29	-2.63	1.98
14,563.00	88.43	2.17	9,160.39	5,656.32	-116.64	5,657.28	2.65	-2.60	-0.54
14,658.00	88.44	1.70	9,162.98	5,751.23	-113.43	5,752.15	0.49	0.01	-0.49
14,752.00	89.16	1.35	9,164.95	5,845.17	-110.93	5,846.06	0.85	0.77	-0.37
14,847.00	89.20	0.40	9,166.31	5,940.15	-109.48	5,941.01	1.00	0.04	-1.00
14,941.00	88.01	359.55	9,168.60	6,034.12	-109.52	6,034.98	1.56	-1.27	-0.90
15,035.00	88.18	359.89	9,171.72	6,128.07	-109.98	6,128.92	0.40	0.18	0.36
15,130.00	88.43	359.64	9,174.53	6,223.03	-110.37	6,223.88	0.37	0.26	-0.26
15,224.00	90.00	359.17	9,175.82	6,317.01	-111.35	6,317.87	1.74	1.67	-0.50
15,319.00	92.16	359.28	9,174.03	6,411.98	-112.63	6,412.84	2.28	2.27	0.12
15,413.00	91.09	358.57	9,171.36	6,505.92	-114.39	6,506.80	1.37	-1.14	-0.76
15,508.00	91.88	358.51	9,168.90	6,600.86	-116.81	6,601.76	0.83	0.83	-0.06
15,602.00	90.87	358.26	9,166.65	6,694.79	-119.46	6,695.72	1.11	-1.07	-0.27
15,697.00	92.38	358.53	9,163.95	6,789.71	-122.12	6,790.66	1.61	1.59	0.28
15,791.00	94.51	359.96	9,158.30	6,883.53	-123.36	6,884.49	2.73	2.27	1.52
15,886.00	92.47	0.83	9,152.52	6,978.34	-122.71	6,979.29	2.33	-2.15	0.92
15,980.00	90.09	1.83	9,150.42	7,072.29	-120.52	7,073.20	2.75	-2.53	1.06
16,075.00	90.59	2.41	9,149.86	7,167.22	-117.01	7,168.89	0.81	0.53	0.61
16,169.00	88.69	1.20	9,150.45	7,261.16	-114.05	7,261.99	2.40	-2.02	-1.29
16,263.00	88.69	1.21	9,152.60	7,355.12	-112.07	7,355.92	0.01	0.00	0.01
16,358.00	88.54	2.09	9,154.89	7,450.05	-109.34	7,450.81	0.94	-0.16	0.93

Company: BC Operating, Inc.
Project: Eddy County, New Mexico (NAD27)
Site: Black River 15-10 State Com X
Well: 4H
Wellbore: OH / Job #60762
Design: Surveys (Patterson 244)

Local Co-ordinate Reference: Well 4H
TVD Reference: GL + KB @ 3258.50usft (Patterson 244)
MD Reference: GL + KB @ 3258.50usft (Patterson 244)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass 5000 GCR

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
16,453.00	88.69	1.46	9,157.19	7,544.98	-106.40	7,545.70	0.68	0.16	-0.66
16,547.00	89.75	1.68	9,158.47	7,638.93	-103.82	7,639.62	1.15	1.13	0.23
16,641.00	92.35	2.54	9,156.75	7,732.84	-100.36	7,733.48	2.91	2.77	0.91
16,735.00	90.84	2.25	9,154.13	7,826.72	-96.44	7,827.31	1.64	-1.61	-0.31
16,829.00	92.63	3.95	9,151.28	7,920.53	-91.36	7,921.06	2.63	1.90	1.81
16,923.00	87.50	0.13	9,151.18	8,014.43	-88.01	8,014.91	6.80	-5.46	-4.06
17,017.00	90.25	2.00	9,153.02	8,108.38	-86.26	8,108.84	3.54	2.93	1.99
17,111.00	89.33	2.51	9,153.37	8,202.30	-82.57	8,202.71	1.12	-0.98	0.54
17,206.00	88.51	2.01	9,155.16	8,297.21	-78.82	8,297.57	1.01	-0.86	-0.53
17,300.00	90.87	2.45	9,155.67	8,391.13	-75.16	8,391.44	2.55	2.51	0.47
17,394.00	88.07	1.87	9,156.54	8,485.05	-71.62	8,485.32	3.04	-2.98	-0.62
17,489.00	85.21	0.35	9,162.10	8,579.86	-69.78	8,580.10	3.41	-3.01	-1.60
17,583.00	86.07	0.06	9,169.25	8,673.58	-69.45	8,673.81	0.97	0.91	-0.31
17,677.00	87.68	358.75	9,174.37	8,767.43	-70.42	8,767.67	2.21	1.71	-1.39
17,771.00	88.80	357.88	9,177.26	8,861.35	-73.18	8,861.61	1.51	1.19	-0.93
17,866.00	93.95	357.72	9,174.98	8,956.22	-76.83	8,956.51	5.42	5.42	-0.17
17,960.00	93.39	356.85	9,168.97	9,049.92	-81.27	9,050.26	1.10	-0.60	-0.93
18,054.00	93.08	356.85	9,163.66	9,143.63	-86.43	9,144.02	0.33	-0.33	0.00
18,148.00	92.44	357.33	9,159.13	9,237.40	-91.20	9,237.84	0.85	-0.68	0.51
Final Phoenix MWD Survey									
18,250.00	92.44	357.33	9,154.79	9,339.19	-95.94	9,339.68	0.00	0.00	0.00
Projection to TD									

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
432.00	431.87	-0.79	-7.82	Tie In
507.00	506.79	-0.65	-11.33	First Phoenix MWD Survey
8,982.84	8,935.71	160.93	-57.20	Hardline Crossing
18,148.00	9,159.13	9,237.40	-91.20	Final Phoenix MWD Survey
18,250.00	9,154.79	9,339.19	-95.94	Projection to TD

NM OIL CONSERVATION
ARTESIA DISTRICT

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

MAY 19 2017

Form C-102

Revised August 1, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	² Pool Code	³ Pool Name
	97442	BLACK RIVER, WOLFCAMP (GAS)
⁴ Property Code	⁵ Property Name	⁶ Well Number
	BLACK RIVER 15-10 STATE COM X	4H
⁷ OGRID No.	⁸ Operator Name	⁹ Elevation
160825	B.C. OPERATING, INC.	3230'

" Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	15	T24S	R27E		170'	SOUTH	360'	EAST	EDDY

" Bottom Hole Location If Different From Surface

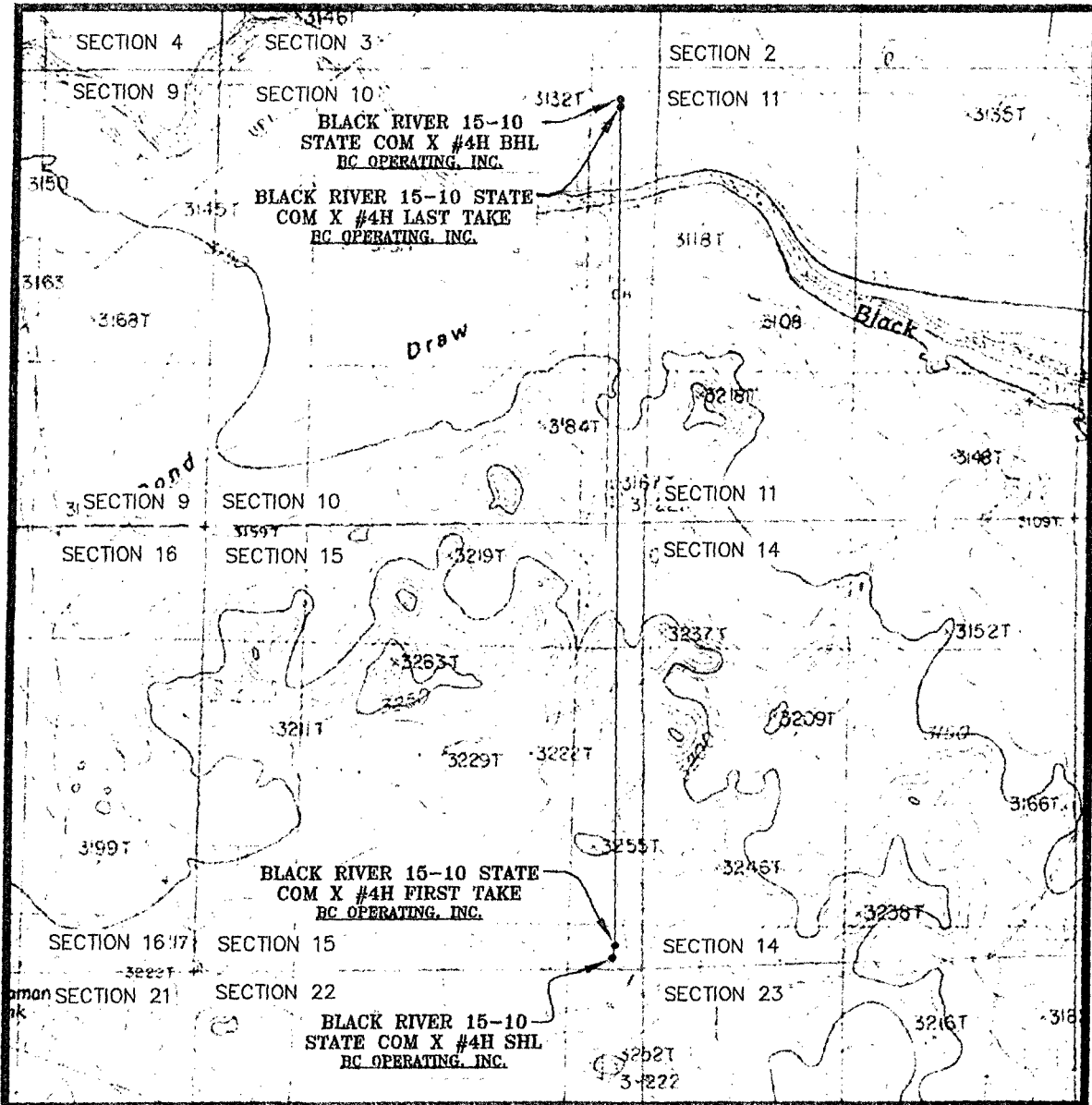
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	10	T24S	R27E		240'	NORTH	330'	EAST	EDDY

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
640.00			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

¹⁶ SECTION 4 SECTION 9 BOTTOM HOLE LOCATION 240' FNL 330' FEL NAD 83, SPCS NH EAST X:591495.00' / Y:450455.60' LAT:32.23827424N / LON:104.1710787W NAD 27, SPCS NH EAST X:550312.23' / Y:450397.26' LAT:32.23815431N / LON:104.17061115W LAST TAKE POINT 330' FNL 330' FEL NAD 83, SPCS NH EAST X:591495.46' / Y:450365.57' LAT:32.23802676N / LON:104.17110684W NAD 27, SPCS NH EAST X:550312.68' / Y:450307.23' LAT:32.23790686N / LON:104.170610124W SECTION 9 SECTION 16 FIRST TAKE POINT 330' FSL 330' FEL NAD 83, SPCS NH EAST X:591542.51' / Y:440449.91' LAT:32.21076944N / LON:104.17100310W NAD 27, SPCS NH EAST X:550339.55' / Y:440391.76' LAT:32.21064918N / LON:104.17050711W SURFACE HOLE LOCATION 170' FSL 360' FEL NAD 83, SPCS NH EAST X:591510.72' / Y:440290.43' LAT:32.21033118N / LON:104.17110667W NAD 27, SPCS NH EAST X:550327.76' / Y:440232.28' LAT:32.21021092N / LON:104.17061069W SECTION 16 SECTION 21 CORNER COORDINATES NAD 83, SPCS NH EAST A - Y: 450743.64' / X: 589192.43' B - Y: 450688.80' / X: 591823.83' C - Y: 440114.53' / X: 591868.86' D - Y: 440159.23' / X: 589132.63'		SECTION 3 SECTION 10 SECTION 15 SECTION 22 CORNER COORDINATES NAD 27, SPCS NH EAST A - Y: 450685.32' / X: 548009.70' B - Y: 450630.45' / X: 550641.05' C - Y: 440056.38' / X: 550683.89' D - Y: 440101.12' / X: 547949.72'		SECTION 2 SECTION 11 SECTION 14 SECTION 14 SECTION 23	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature _____ Date _____ Printed Name _____ E-mail Address _____ "SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. DECEMBER 19, 2016 Date of Survey _____ Signature and Seal of Professional Surveyor _____ Certificate Number _____ LLOYD R. SHORT, 21653
---	--	--	--	--	---

LOCATION VERIFICATION MAP



SEC. 15 TWP. 24-S RGE. 27-E
 SURVEY: N.M.P.M.
 COUNTY: EDDY
 DESCRIPTION: 170' FSL & 360' FEL
 ELEVATION: 3230'
 OPERATOR: B.C. OPERATING, INC.
 LEASE: BLACK RIVER 15-10 STATE COM X
 U.S.G.S. TOPOGRAPHIC MAP: BOND DRAW, N.M.

SCALE: 1" = 2000'
 CONTOUR INTERVAL = 10'

PREPARED BY:
 R-SQUARED GLOBAL, LLC
 1309 LOUISVILLE AVENUE, MONROE, LA 71201
 318-323-6900 OFFICE
 JOB No. R3871_001

VICINITY MAP



SCALE: 1" = 2 MILES

PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R3671.001

WELL PAD SURFACE

100' 0' 100' 200'
SCALE: 1" = 200'

SEC. 15 TWP. 24-S RGE. 27-E

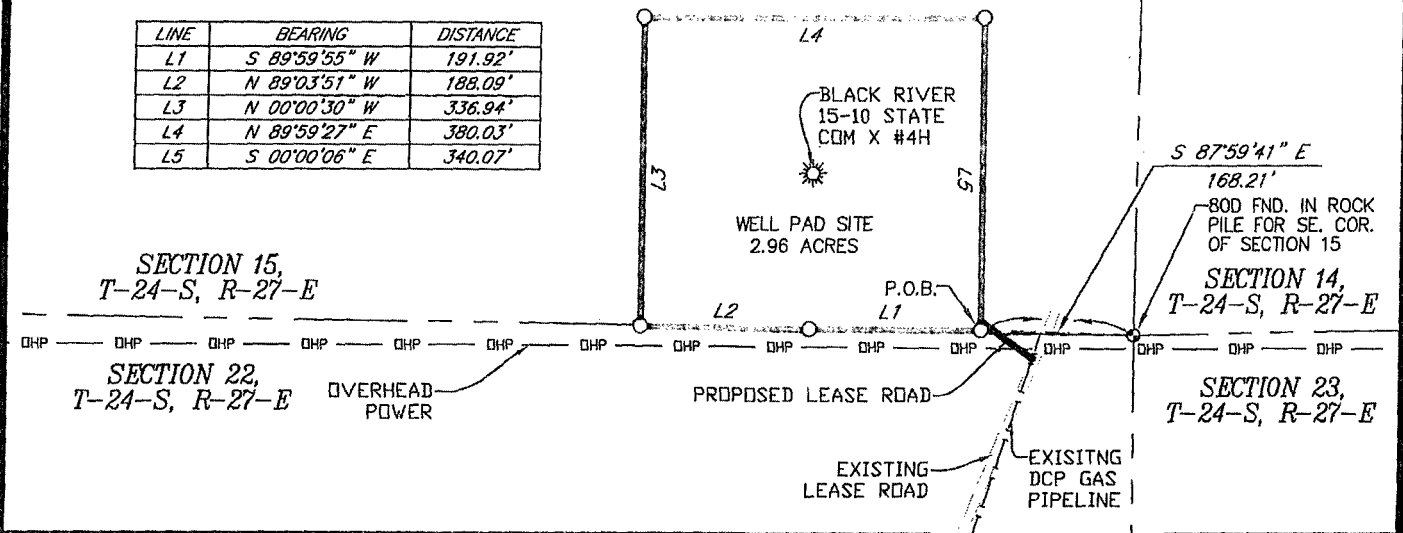
SURVEY: N.M.P.M.

COUNTY: EDDY

U.S.G.S. TOPOGRAPHIC MAP: BOND DRAW, N.M.



LINE	BEARING	DISTANCE
L1	S 89°59'55" W	191.92'
L2	N 89°03'51" W	188.09'
L3	N 00°00'30" W	336.94'
L4	N 89°59'27" E	380.03'
L5	S 00°00'06" E	340.07'



FIELD NOTES DESCRIBING

A tract of land being 2.96 acres. Said tract being located in Section 15, Township 24 South, Range 27 East, New Mexico Principal Meridian, Eddy County, New Mexico.

Being more particularly described by metes and bounds as follows:

BEGINNING at a point from which an 80D found in a rock pile for the Southeast corner of said Section 15 bears, S 87°59'41" E a distance of 168.21 feet.

THENCE

S 89°59'55" W a distance of 191.92 feet to a point on the South line of said Section 15, and N 89°03'51" W a distance of 188.09 feet to the Southwest corner of this tract, and N 00°00'30" W a distance of 336.94 feet to the Northwest corner of this tract, and N 89°59'27" E a distance of 380.03 feet to the Northeast corner of this tract, and S 00°00'06" E a distance of 340.07 feet to the **POINT OF BEGINNING**.

The total area of the herein described tract contains 2.96 acres of land.

All bearings and coordinates refer to NAD 83, New Mexico State Plane Coordinate System, East Zone, U.S. Survey Feet. (All bearings and distances are grid measurements.)

Title information furnished by B.C. Operating, Inc.

Reference accompanying Certificate of Survey prepared in conjunction with this legal description for easement.

STATE OF NEW MEXICO
COUNTY OF EDDY

I, Lloyd P. Short, New Mexico Professional Surveyor No. 21653, do hereby certify that this easement survey plat and the actual survey on the ground upon which it is based were performed by me or under my direct supervision; that I am responsible for this survey; that this survey meets the minimum standards for surveying in New Mexico; and that it is true and correct to the best of my knowledge and belief. I further certify that this survey is not a land division or subdivision as defined in the New Mexico Subdivision Act and that this instrument is an easement survey plat crossing an existing tract or tracts.



LLOYD P. SHORT, PS No. 21653 DATE: DECEMBER 19 2016

BC OPERATING, INC.

PLAT FOR A SURFACE SITE ON THE PROPERTY OF
STATE OF NEW MEXICO
EDDY COUNTY, NEW MEXICO

BASIS OF BEARING
ALL BEARINGS AND COORDINATES
REFER TO NAD 83, NEW MEXICO
STATE PLANE COORDINATE
SYSTEM, EAST ZONE, U.S. SURVEY
FEET. (ALL BEARINGS AND
DISTANCES ARE GRID
MEASUREMENTS.)

LEGEND

MONUMENT
POWER POLE

P.O.B. POINT OF BEGINNING

EXISTING ROAD
LOT LINE
SURFACE SITE EDGE
EXIST. PIPELINE

PROPOSED LEASE RD.
FENCE
SECTION LINE
OVERHEAD POWER

QUARTER SPLIT

R3671_001

REV.	DATE	DESCRIPTION	BY	CHKD
1	12/15/2016	SHL AND PAD RE-LOCATED	DEF	DEF
SHEET 4 OF 7				
DRAWN BY: DEF				
DATE: 08/29/2016				
CHECKED BY: LPS				



1309 LOUISVILLE AVE.
MONROE, LA 71201
(318) 323-6900
FAX (318) 382-0064

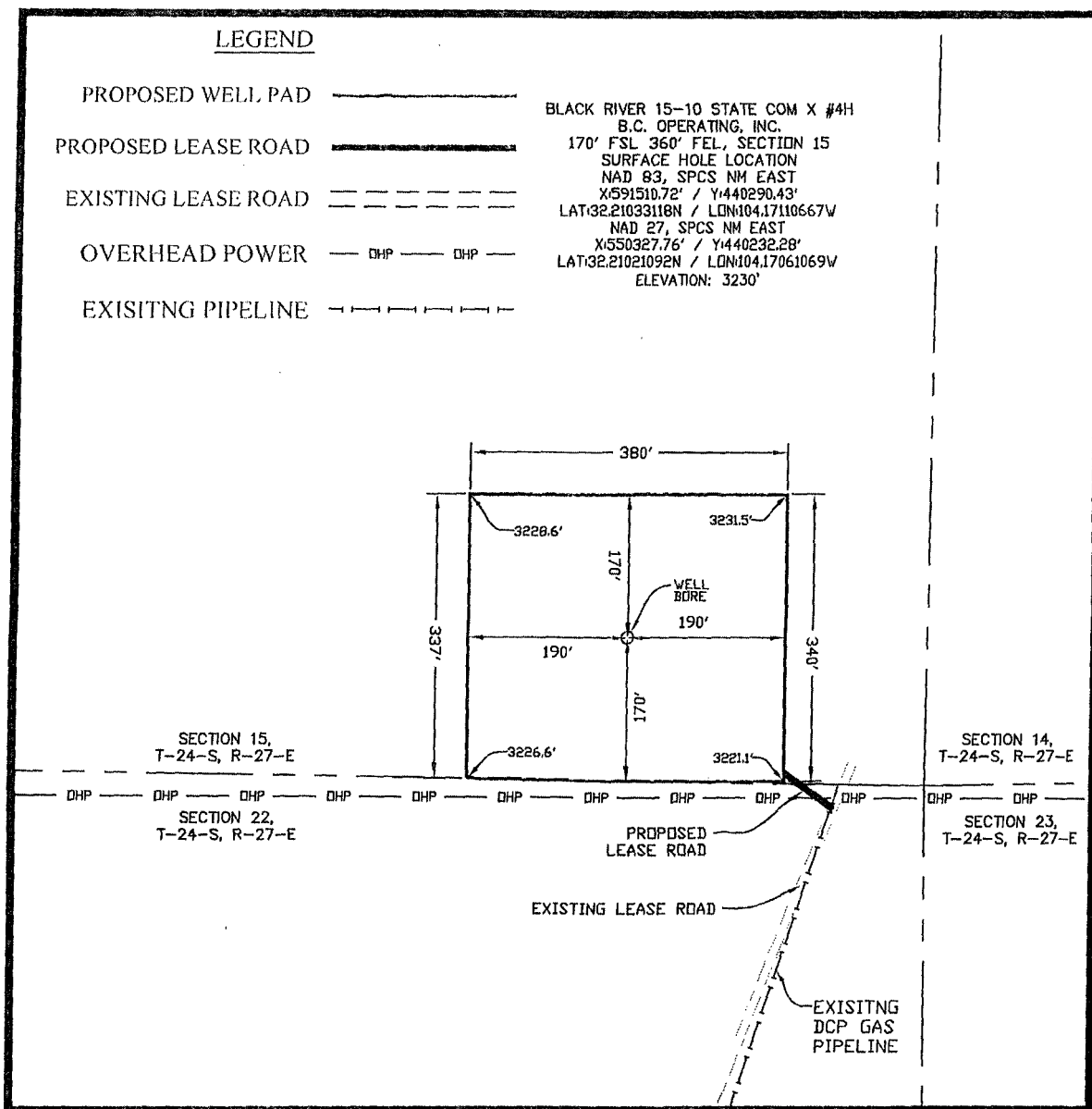
WELL PAD TOPO

SEC. 15 TWP. 24-S RGE. 27-E

SURVEY: N.M.P.M.

COUNTY: EDDY

U.S.G.S. TOPOGRAPHIC MAP: BOND DRAW, N.M.



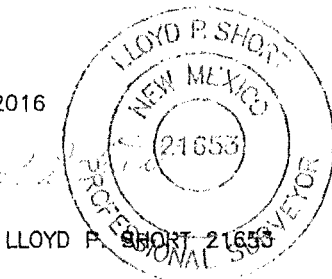
DIRECTIONS TO LOCATION:

FROM THE INTERSECTION OF U.S. HIGHWAY 62/WEST GREENE STREET AND U.S. 180 W./U.S. 62 W./S. CANAL STREET IN CARLESBAD, NEW MEXICO, TRAVEL SOUTH ON U.S. 62 W./S. CANAL STREET FOR 2.0 MILES TO U.S. HIGHWAY 285 SOUTH ON THE LEFT. TRAVEL SOUTHEAST ON U.S. HIGHWAY 285 SOUTH FOR 0.2 MILES AND CONTINUE STRAIGHT ON U.S. HIGHWAY 285 SOUTH/S. CANAL ST. FOR 11.0 MILES TO HIGBY HOLE ROAD/COUNTY ROAD 716 ON THE RIGHT. TRAVEL SOUTH ON HIGBY HOLE ROAD FOR 3.3 MILES TO BLACK RIVER VILLAGE ROAD/COUNTY ROAD 720 ON THE RIGHT. TRAVEL WEST ON BLACK RIVER VILLAGE ROAD FOR 3.2 MILES TO A LEASE ROAD ON THE LEFT. TRAVEL SOUTHWEST ON LEASE ROAD FOR 0.1 MILES TO A LEASE ROAD ON THE LEFT. TRAVEL SOUTHEAST ON LEASE ROAD FOR 1.2 MILES TO A TWO TRACK TRAIL ON THE RIGHT. TRAVEL WEST ON TWO TRACK TRAIL FOR 1.0 MILE TO A TWO TRACK TRAIL TO THE RIGHT. TRAVEL NORTHEAST ON TWO TRACK TRAIL FOR 183.3 FEET TO PROPOSED WELL 300 FEET TO THE LEFT.

NOTE:

THIS IS NOT A BOUNDARY SURVEY, APPARENT PROPERTY CORNERS AND PROPERTY LINES ARE SHOWN FOR INFORMATION ONLY. BOUNDARY DATA SHOWN IS FROM STATE OF NEW MEXICO OIL CONSERVATION DIVISION FORM C-102 INCLUDED IN THIS SUBMITTAL.

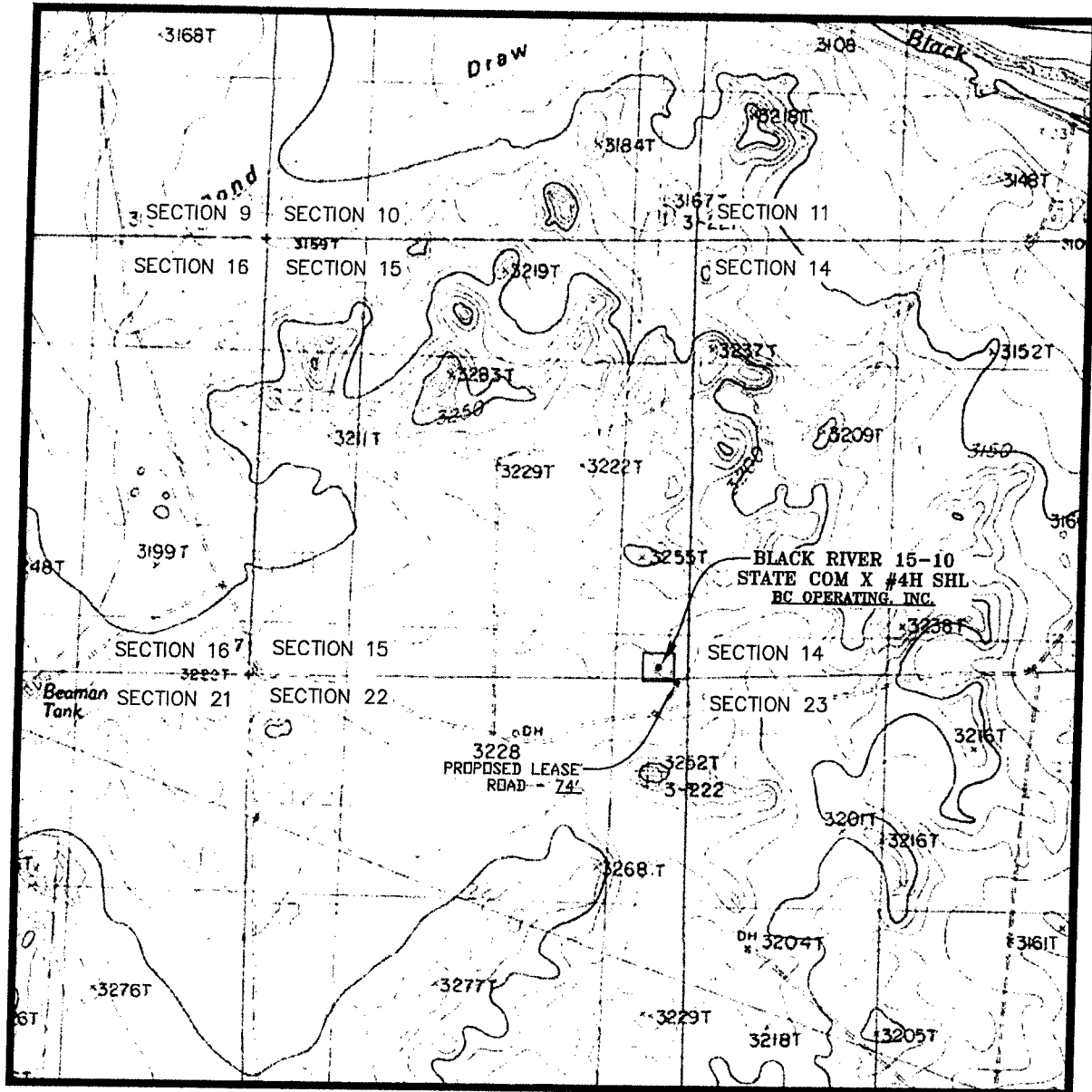
DECEMBER 19, 2016



100' 0' 100' 200'
SCALE: 1" = 200'

PREPARED BY:
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JOB No. R3871_001

WELL PAD LOCATION VERIFICATION MAP



SEC. 15 TWP. 24-S RGE. 27-E
 SURVEY: N.M.P.M.
 COUNTY: EDDY
 DESCRIPTION: 170' FSL & 360' FEL
 ELEVATION: 3230'
 OPERATOR: B.C. OPERATING, INC.
 LEASE: BLACK RIVER 15-10 STATE COM X
 U.S.G.S. TOPOGRAPHIC MAP: BOND DRAW, N.M.

SCALE: 1" = 2000'
 CONTOUR INTERVAL = 20'

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