

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 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

OCT 02 2018

Form C-102
Revised August 1, 2011

DISTRICT I Submit one copy to appropriate District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

☐ AS-DRILLED
☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-30606	² Pool Code 71629	³ Pool Name BASIN FRIUTLAND COAL
⁴ Property Code 314446	⁵ Property Name CARRACAS 18B	⁶ Well Number 3-1ST
⁷ GRID No. 370292	⁸ Operator Name SOUTHLAND ROYALTY CO., LLC	⁹ Elevation 7426'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	18	32N	4W	4	755'	SOUTH	965'	WEST	RIO ARRIBA

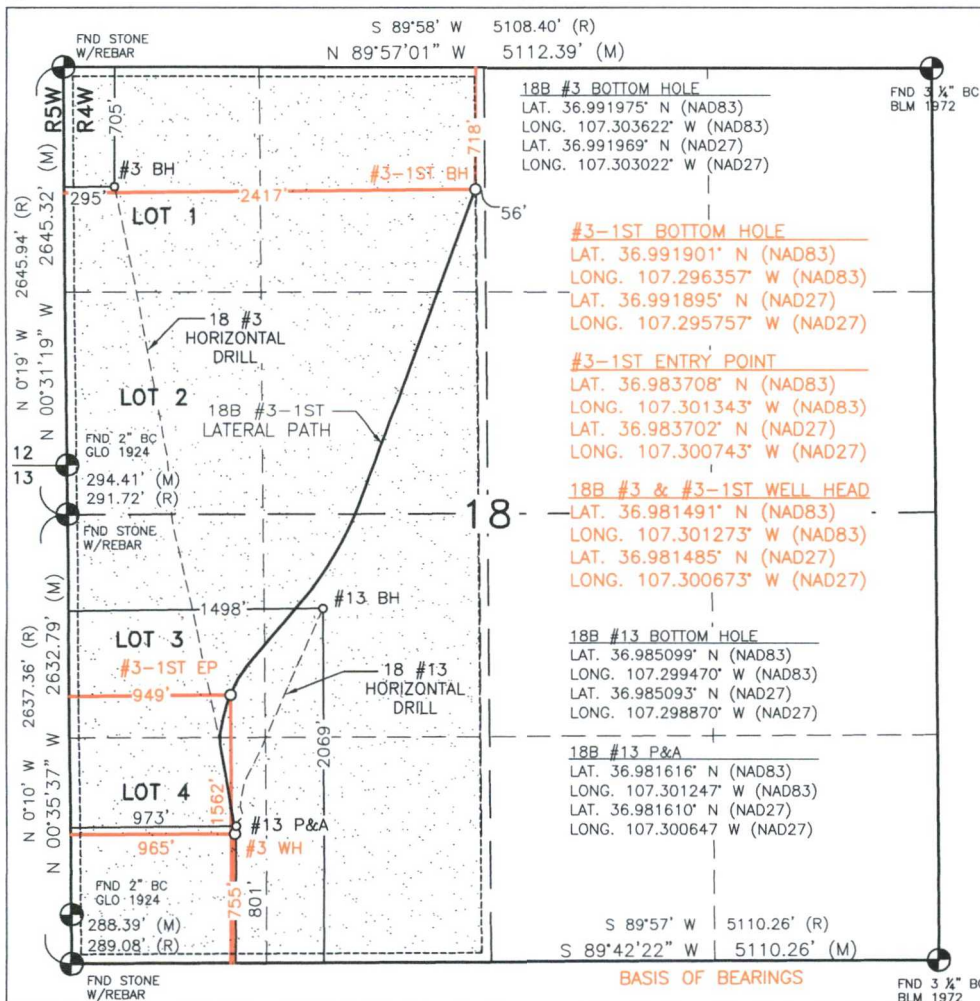
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	18	32N	4W		718'	NORTH	2417'	WEST	RIO ARRIBA

¹² Dedicated Acres W/2 SEC. 18 299.72 ACRES	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-13119
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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



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 unleased 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.

Connie Blaylock 9/27/18
Signature Date

Connie Blaylock
Printed Name

cblaylock@mspartners.com
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.

SEPTEMBER 25, 2018

Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number

11393



Scientific Drilling

Directional Survey Certification

2948 I-70 Business Loop
Grand Junction, CO 81504
(970)-245-9447 Fax (970)-245-9454

Operator	Southland Royalty
Well Name & No.	Carracas 18B 3-1ST
County & State	Rio Arriba, NM
SDI Job No.	OP.0013106
Rig	Aztec 507

I, Janie Collins, having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 4,242 feet to a measured depth of 7,882 feet is true and correct as determined from all available records.

Signature

28-Sep-18

Date

Janie Collins

Colorado District Well Planner
Scientific Drilling International

Company:	Southland Royalty	Local Co-ordinate Reference:	Well Carracas 18B 3-1ST
Project:	Rio Arriba County, NM NAD27	TVD Reference:	GL 7426' & RKB 11' @ 7437.01ft (Aztec 507)
Site:	Carracas 18B Pad	MD Reference:	GL 7426' & RKB 11' @ 7437.01ft (Aztec 507)
Well:	Carracas 18B 3-1ST	North Reference:	True
Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Grand Junction District

Project	Rio Arriba County, NM NAD27		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		

Site		Carracas 18B Pad			
Site Position:		Northing:	2,176,964.16 usft	Latitude:	36.9814850
From:	Lat/Long	Easting:	655,583.27 usft	Longitude:	-107.3006730
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.32 °

Well	Carracas 18B 3-1ST					
Well Position	+N/-S	0.00 ft	Northing:	2,176,964.16 usft	Latitude:	36.9814850
	+E/-W	0.00 ft	Easting:	655,583.27 usft	Longitude:	-107.3006730
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	7,426.02 ft

Wellbore	ST1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	8/9/2018	8.97	63.50	49,977

Design	ST1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	4,162.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	9.60	

Survey Program	Date	9/28/2018			
From	To	Survey (Wellbore)	Tool Name	Description	
(ft)	(ft)				
274.00	4,162.00	Survey #2 (OH)	MWD	MWD - Standard	
4,242.00	7,882.00	Survey #1 - MWD Survey (ST1)	MWD+HDGM	OWSG MWD + HDGM	

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(ft)	(ft)	Section	Rate	Rate	Rate	
(ft)			(ft)			(ft)	(°/100ft)	(°/100ft)	(°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
274.00	0.44	316.39	274.00	0.76	-0.73	0.63	0.16	0.16	0.00	
364.00	0.18	297.43	364.00	1.08	-1.09	0.88	0.31	-0.29	-21.07	
456.00	0.00	238.15	456.00	1.14	-1.22	0.92	0.20	-0.20	0.00	
548.00	0.26	254.26	548.00	1.09	-1.42	0.84	0.28	0.28	0.00	
639.00	0.26	234.88	638.99	0.91	-1.79	0.60	0.10	0.00	-21.30	
731.00	0.09	224.43	730.99	0.74	-2.01	0.40	0.19	-0.18	-11.36	
819.00	0.18	162.58	818.99	0.56	-2.01	0.22	0.18	0.10	-70.28	
913.00	0.26	191.21	912.99	0.21	-2.01	-0.13	0.14	0.09	30.46	

Company:	Southland Royalty	Local Co-ordinate Reference:	Well Carracas 18B 3-1ST
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Site:	Carracas 18B Pad	MD Reference:	GL 7426' & RKB 11' @ 7437.01ft (Aztec 507)
Well:	Carracas 18B 3-1ST	North Reference:	True
Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Grand Junction District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,004.00	0.26	216.65	1,003.99	-0.16	-2.18	-0.52	0.13	0.00	27.96
1,095.00	0.09	139.74	1,094.99	-0.38	-2.25	-0.75	0.28	-0.19	-84.52
1,186.00	0.09	44.67	1,185.99	-0.38	-2.16	-0.74	0.15	0.00	-104.47
1,276.00	2.02	299.59	1,275.97	0.45	-3.49	-0.14	2.27	2.14	-116.76
1,366.00	0.79	284.26	1,365.94	1.39	-5.47	0.46	1.42	-1.37	-17.03
1,458.00	0.18	144.45	1,457.94	1.43	-6.00	0.41	1.02	-0.66	-151.97
1,550.00	0.26	224.30	1,549.94	1.16	-6.06	0.13	0.31	0.09	86.79
1,642.00	0.09	183.41	1,641.94	0.94	-6.21	-0.11	0.22	-0.18	-44.45
1,732.00	0.00	269.67	1,731.94	0.87	-6.21	-0.18	0.10	-0.10	0.00
1,823.00	0.09	240.53	1,822.94	0.83	-6.28	-0.23	0.10	0.10	0.00
1,916.00	0.09	179.34	1,915.94	0.72	-6.34	-0.34	0.10	0.00	-65.80
2,009.00	0.09	94.11	2,008.94	0.64	-6.26	-0.41	0.13	0.00	-91.65
2,102.00	0.26	98.14	2,101.94	0.61	-5.98	-0.40	0.18	0.18	4.33
2,195.00	0.18	60.71	2,194.94	0.65	-5.65	-0.30	0.17	-0.09	-40.25
2,288.00	0.09	351.69	2,287.94	0.79	-5.53	-0.14	0.18	-0.10	-74.22
2,380.00	0.00	18.89	2,379.94	0.87	-5.54	-0.07	0.10	-0.10	0.00
2,473.00	0.26	188.33	2,472.94	0.66	-5.57	-0.28	0.28	0.28	0.00
2,567.00	0.09	135.16	2,566.94	0.39	-5.55	-0.54	0.23	-0.18	-56.56
2,660.00	0.00	42.72	2,659.94	0.34	-5.50	-0.58	0.10	-0.10	0.00
2,753.00	0.09	52.47	2,752.94	0.39	-5.44	-0.53	0.10	0.10	0.00
2,847.00	0.35	36.70	2,846.94	0.66	-5.21	-0.22	0.28	0.28	-16.78
2,878.00	0.70	43.73	2,877.94	0.87	-5.02	0.02	1.15	1.13	22.68
2,909.00	0.97	34.74	2,908.93	1.23	-4.74	0.42	0.97	0.87	-29.00
2,940.00	1.14	26.85	2,939.93	1.72	-4.45	0.95	0.72	0.55	-25.45
2,971.00	1.41	11.70	2,970.92	2.37	-4.24	1.63	1.39	0.87	-48.87
3,001.00	1.58	1.06	3,000.91	3.14	-4.15	2.40	1.08	0.57	-35.47
3,032.00	1.67	356.40	3,031.90	4.02	-4.17	3.27	0.52	0.29	-15.03
3,064.00	1.67	0.80	3,063.88	4.95	-4.20	4.18	0.40	0.00	13.75
3,095.00	1.85	7.08	3,094.87	5.90	-4.13	5.13	0.85	0.58	20.26
3,126.00	2.11	9.30	3,125.85	6.96	-3.98	6.20	0.87	0.84	7.16
3,157.00	2.81	9.78	3,156.82	8.27	-3.75	7.53	2.26	2.26	1.55
3,187.00	3.87	10.93	3,186.77	9.99	-3.44	9.28	3.54	3.53	3.83
3,218.00	5.28	11.16	3,217.67	12.42	-2.96	11.75	4.55	4.55	0.74
3,250.00	6.51	9.01	3,249.50	15.65	-2.39	15.03	3.90	3.84	-6.72
3,281.00	8.18	3.50	3,280.25	19.59	-1.98	18.98	5.84	5.39	-17.77
3,313.00	10.02	357.83	3,311.84	24.64	-1.95	23.97	6.39	5.75	-17.72
3,344.00	11.52	353.01	3,342.30	30.41	-2.43	29.58	5.64	4.84	-15.55
3,375.00	13.19	348.89	3,372.58	36.96	-3.49	35.86	6.09	5.39	-13.29
3,407.00	14.86	347.77	3,403.62	44.55	-5.06	43.08	5.29	5.22	-3.50
3,438.00	16.62	348.14	3,433.46	52.77	-6.81	50.90	5.69	5.68	1.19

Company:	Southland Royalty	Local Co-ordinate Reference:	Well Carracas 18B 3-1ST
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Well:	Carracas 18B 3-1ST	North Reference:	True
Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Grand Junction District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,469.00	18.47	348.44	3,463.02	61.92	-8.71	59.60	5.97	5.97	0.97
3,501.00	20.31	348.86	3,493.20	72.34	-10.80	69.53	5.77	5.75	1.31
3,532.00	22.07	349.58	3,522.10	83.35	-12.89	80.03	5.74	5.68	2.32
3,563.00	24.09	350.02	3,550.62	95.31	-15.04	91.46	6.54	6.52	1.42
3,594.00	25.94	351.61	3,578.71	108.25	-17.13	103.88	6.35	5.97	5.13
3,623.00	27.87	351.46	3,604.57	121.23	-19.06	116.35	6.66	6.66	-0.52
3,654.00	29.99	350.72	3,631.70	136.04	-21.38	130.57	6.94	6.84	-2.39
3,686.00	31.74	350.32	3,659.17	152.23	-24.09	146.08	5.51	5.47	-1.25
3,717.00	33.68	351.06	3,685.25	168.76	-26.80	161.93	6.39	6.26	2.39
3,748.00	35.35	350.96	3,710.79	186.11	-29.54	178.58	5.39	5.39	-0.32
3,779.00	36.93	351.26	3,735.83	204.17	-32.37	195.92	5.13	5.10	0.97
3,810.00	38.69	351.21	3,760.32	222.95	-35.26	213.95	5.68	5.68	-0.16
3,842.00	40.80	351.17	3,784.92	243.17	-38.40	233.36	6.59	6.59	-0.13
3,873.00	42.74	351.42	3,808.04	263.58	-41.52	252.97	6.28	6.26	0.81
3,904.00	44.23	351.09	3,830.53	284.67	-44.76	273.22	4.86	4.81	-1.06
3,935.00	45.99	350.14	3,852.41	306.33	-48.35	293.98	6.08	5.68	-3.06
3,965.00	47.92	349.51	3,872.89	327.91	-52.22	314.61	6.61	6.43	-2.10
3,996.00	49.07	349.42	3,893.43	350.74	-56.47	336.41	3.72	3.71	-0.29
4,027.00	50.47	349.08	3,913.45	373.99	-60.88	358.60	4.59	4.52	-1.10
4,058.00	51.88	349.21	3,932.89	397.71	-65.43	381.23	4.56	4.55	0.42
4,089.00	53.38	349.05	3,951.70	421.90	-70.08	404.31	4.86	4.84	-0.52
4,120.00	55.13	349.50	3,969.81	446.62	-74.76	427.90	5.77	5.65	1.45
4,152.00	56.63	349.34	3,987.76	472.66	-79.62	452.76	4.71	4.69	-0.50
4,162.00	57.03	349.34	3,993.23	480.89	-81.17	460.62	3.97	3.97	0.00
4,242.00	62.32	359.48	4,033.69	549.47	-87.72	527.14	12.78	6.62	12.68
4,274.00	63.05	5.89	4,048.39	577.85	-86.38	555.35	17.94	2.28	20.03
4,306.00	64.06	8.23	4,062.64	606.28	-82.86	583.97	7.27	3.16	7.31
4,337.00	65.97	9.90	4,075.73	634.02	-78.43	612.06	7.86	6.16	5.39
4,369.00	67.91	10.72	4,088.27	662.99	-73.16	641.50	6.50	6.06	2.56
4,401.00	69.59	12.19	4,099.86	692.22	-67.23	671.31	6.77	5.25	4.59
4,432.00	72.44	15.46	4,109.95	720.67	-60.22	700.54	13.56	9.19	10.55
4,464.00	75.15	18.62	4,118.88	750.04	-51.21	731.00	12.71	8.47	9.88
4,495.00	77.39	21.92	4,126.24	778.28	-40.78	760.58	12.61	7.23	10.65
4,527.00	79.69	24.96	4,132.60	807.05	-28.30	791.03	11.76	7.19	9.50
4,559.00	81.75	27.36	4,137.76	835.39	-14.38	821.30	9.81	6.44	7.50
4,591.00	83.07	28.15	4,141.99	863.46	0.39	851.43	4.80	4.13	2.47
4,622.00	83.78	30.25	4,145.54	890.34	15.42	880.44	7.11	2.29	6.77
4,653.00	85.56	31.97	4,148.42	916.77	31.36	909.16	7.97	5.74	5.55
4,685.00	87.95	35.04	4,150.23	943.40	49.00	938.36	12.15	7.47	9.59
4,716.00	89.16	36.11	4,151.01	968.61	67.02	966.22	5.21	3.90	3.45

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Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Grand Junction District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,747.00	89.77	38.55	4,151.30	993.25	85.82	993.66	8.11	1.97	7.87
4,779.00	90.47	39.61	4,151.23	1,018.09	105.99	1,021.51	3.97	2.19	3.31
4,847.00	88.52	39.02	4,151.83	1,070.70	149.07	1,080.56	3.00	-2.87	-0.87
4,879.00	88.12	39.00	4,152.77	1,095.55	169.21	1,108.43	1.25	-1.25	-0.06
4,911.00	88.79	39.77	4,153.63	1,120.28	189.50	1,136.19	3.19	2.09	2.41
4,942.00	87.68	40.73	4,154.59	1,143.92	209.52	1,162.85	4.73	-3.58	3.10
4,974.00	87.48	40.49	4,155.94	1,168.19	230.33	1,190.25	0.98	-0.63	-0.75
5,005.00	87.95	40.90	4,157.17	1,191.68	250.53	1,216.77	2.01	1.52	1.32
5,037.00	88.09	40.79	4,158.28	1,215.87	271.45	1,244.11	0.56	0.44	-0.34
5,068.00	88.05	40.74	4,159.32	1,239.34	291.68	1,270.63	0.21	-0.13	-0.16
5,100.00	87.92	40.82	4,160.45	1,263.56	312.57	1,297.99	0.48	-0.41	0.25
5,131.00	89.33	41.01	4,161.19	1,286.97	332.86	1,324.46	4.59	4.55	0.61
5,163.00	89.77	41.01	4,161.44	1,311.12	353.86	1,351.77	1.38	1.38	0.00
5,194.00	89.97	40.47	4,161.52	1,334.61	374.09	1,378.30	1.86	0.65	-1.74
5,226.00	90.40	40.86	4,161.41	1,358.88	394.94	1,405.72	1.81	1.34	1.22
5,257.00	90.61	39.77	4,161.14	1,382.52	415.00	1,432.37	3.58	0.68	-3.52
5,289.00	90.17	38.46	4,160.92	1,407.34	435.19	1,460.21	4.32	-1.38	-4.09
5,320.00	89.70	37.09	4,160.96	1,431.85	454.17	1,487.54	4.67	-1.52	-4.42
5,352.00	89.66	36.11	4,161.13	1,457.54	473.25	1,516.05	3.07	-0.13	-3.06
5,383.00	89.60	35.93	4,161.33	1,482.61	491.48	1,543.81	0.61	-0.19	-0.58
5,415.00	90.00	35.16	4,161.45	1,508.65	510.09	1,572.58	2.71	1.25	-2.41
5,446.00	89.80	35.00	4,161.50	1,534.01	527.90	1,600.57	0.83	-0.65	-0.52
5,478.00	89.83	33.64	4,161.60	1,560.44	545.94	1,629.64	4.25	0.09	-4.25
5,510.00	90.27	31.50	4,161.58	1,587.41	563.17	1,659.10	6.83	1.38	-6.69
5,542.00	90.67	30.51	4,161.31	1,614.83	579.65	1,688.89	3.34	1.25	-3.09
5,573.00	90.67	28.67	4,160.95	1,641.79	594.96	1,718.02	5.94	0.00	-5.94
5,604.00	90.60	27.63	4,160.61	1,669.12	609.58	1,747.40	3.36	-0.23	-3.35
5,636.00	89.53	27.03	4,160.57	1,697.55	624.27	1,777.88	3.83	-3.34	-1.88
5,668.00	89.83	27.46	4,160.75	1,726.00	638.92	1,808.38	1.64	0.94	1.34
5,699.00	88.25	26.67	4,161.27	1,753.60	653.03	1,837.94	5.70	-5.10	-2.55
5,730.00	87.45	25.34	4,162.43	1,781.44	666.61	1,867.66	5.00	-2.58	-4.29
5,762.00	86.51	23.45	4,164.12	1,810.54	679.80	1,898.55	6.59	-2.94	-5.91
5,793.00	86.57	23.20	4,165.99	1,838.95	692.06	1,928.61	0.83	0.19	-0.81
5,824.00	87.05	23.28	4,167.71	1,867.39	704.27	1,958.69	1.57	1.55	0.26
5,856.00	87.21	23.18	4,169.32	1,896.76	716.88	1,989.75	0.59	0.50	-0.31
5,887.00	87.75	21.67	4,170.68	1,925.39	728.69	2,019.95	5.17	1.74	-4.87
5,919.00	89.03	20.31	4,171.58	1,955.25	740.15	2,051.30	5.84	4.00	-4.25
5,951.00	88.15	19.77	4,172.37	1,985.31	751.11	2,082.77	3.23	-2.75	-1.69
5,982.00	87.58	20.22	4,173.52	2,014.42	761.70	2,113.24	2.34	-1.84	1.45
6,013.00	87.69	20.09	4,174.80	2,043.49	772.37	2,143.68	0.55	0.35	-0.42

Company:	Southland Royalty	Local Co-ordinate Reference:	Well Carracas 18B 3-1ST
Project:	Rio Arriba County, NM NAD27	TVD Reference:	GL 7426' & RKB 11' @ 7437.01ft (Aztec 507)
Site:	Carracas 18B Pad	MD Reference:	GL 7426' & RKB 11' @ 7437.01ft (Aztec 507)
Well:	Carracas 18B 3-1ST	North Reference:	True
Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Grand Junction District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,045.00	87.82	20.01	4,176.05	2,073.53	783.34	2,175.13	0.48	0.41	-0.25
6,076.00	87.82	19.61	4,177.23	2,102.68	793.83	2,205.62	1.29	0.00	-1.29
6,107.00	87.41	19.42	4,178.52	2,131.87	804.18	2,236.13	1.46	-1.32	-0.61
6,138.00	87.42	19.04	4,179.92	2,161.11	814.38	2,266.66	1.22	0.03	-1.23
6,170.00	87.48	19.23	4,181.34	2,191.31	824.86	2,298.19	0.62	0.19	0.59
6,201.00	89.16	19.37	4,182.25	2,220.56	835.10	2,328.73	5.44	5.42	0.45
6,233.00	89.70	19.28	4,182.57	2,250.75	845.69	2,360.27	1.71	1.69	-0.28
6,266.00	89.56	20.43	4,182.79	2,281.79	856.90	2,392.74	3.51	-0.42	3.48
6,297.00	90.07	20.94	4,182.89	2,310.79	867.85	2,423.16	2.33	1.65	1.65
6,329.00	89.43	20.16	4,183.02	2,340.75	879.08	2,454.58	3.15	-2.00	-2.44
6,361.00	89.53	19.73	4,183.32	2,370.83	890.00	2,486.05	1.38	0.31	-1.34
6,392.00	89.66	19.16	4,183.53	2,400.06	900.32	2,516.60	1.89	0.42	-1.84
6,424.00	87.98	20.07	4,184.19	2,430.20	911.06	2,548.10	5.97	-5.25	2.84
6,456.00	87.95	20.09	4,185.33	2,460.23	922.04	2,579.55	0.11	-0.09	0.06
6,487.00	88.06	20.03	4,186.41	2,489.34	932.66	2,610.01	0.40	0.35	-0.19
6,519.00	89.33	20.43	4,187.14	2,519.35	943.72	2,641.46	4.16	3.97	1.25
6,550.00	90.20	20.72	4,187.26	2,548.38	954.62	2,671.89	2.96	2.81	0.94
6,582.00	90.54	20.51	4,187.06	2,578.33	965.88	2,703.30	1.25	1.06	-0.66
6,613.00	90.77	20.06	4,186.70	2,607.40	976.63	2,733.76	1.63	0.74	-1.45
6,644.00	90.30	20.51	4,186.41	2,636.48	987.38	2,764.22	2.10	-1.52	1.45
6,676.00	90.44	20.38	4,186.21	2,666.46	998.56	2,795.65	0.60	0.44	-0.41
6,708.00	89.87	20.53	4,186.12	2,696.44	1,009.74	2,827.07	1.84	-1.78	0.47
6,739.00	90.27	20.60	4,186.08	2,725.47	1,020.63	2,857.51	1.31	1.29	0.23
6,771.00	90.60	20.43	4,185.84	2,755.44	1,031.84	2,888.93	1.16	1.03	-0.53
6,802.00	89.43	20.77	4,185.83	2,784.45	1,042.75	2,919.36	3.93	-3.77	1.10
6,834.00	88.89	20.40	4,186.30	2,814.41	1,054.00	2,950.77	2.05	-1.69	-1.16
6,865.00	89.52	20.13	4,186.73	2,843.49	1,064.74	2,981.23	2.21	2.03	-0.87
6,897.00	89.46	20.32	4,187.02	2,873.51	1,075.80	3,012.68	0.62	-0.19	0.59
6,929.00	90.03	20.00	4,187.16	2,903.55	1,086.83	3,044.14	2.04	1.78	-1.00
6,960.00	90.27	20.52	4,187.08	2,932.63	1,097.56	3,074.60	1.85	0.77	1.68
6,992.00	89.06	20.29	4,187.26	2,962.62	1,108.72	3,106.03	3.85	-3.78	-0.72
7,023.00	89.26	20.39	4,187.72	2,991.69	1,119.49	3,136.49	0.72	0.65	0.32
7,055.00	89.83	20.64	4,187.97	3,021.66	1,130.71	3,167.91	1.95	1.78	0.78
7,087.00	87.99	20.54	4,188.58	3,051.61	1,141.96	3,199.31	5.76	-5.75	-0.31
7,118.00	88.29	20.30	4,189.59	3,080.64	1,152.77	3,229.75	1.24	0.97	-0.77
7,150.00	88.76	20.18	4,190.41	3,110.66	1,163.83	3,261.19	1.52	1.47	-0.38
7,181.00	87.99	20.70	4,191.29	3,139.69	1,174.65	3,291.62	3.00	-2.48	1.68
7,213.00	88.05	20.79	4,192.40	3,169.60	1,185.98	3,323.00	0.34	0.19	0.28
7,245.00	87.05	20.87	4,193.76	3,199.48	1,197.35	3,354.36	3.13	-3.13	0.25
7,276.00	86.94	21.17	4,195.39	3,228.38	1,208.46	3,384.70	1.03	-0.35	0.97

Company:	Southland Royalty	Local Co-ordinate Reference:	Well Carracas 18B 3-1ST
Project:	Rio Arriba County, NM NAD27	TVD Reference:	GL 7426' & RKB 11' @ 7437.01ft (Aztec 507)
Site:	Carracas 18B Pad	MD Reference:	GL 7426' & RKB 11' @ 7437.01ft (Aztec 507)
Well:	Carracas 18B 3-1ST	North Reference:	True
Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Grand Junction District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,308.00	87.28	20.97	4,197.00	3,258.20	1,219.94	3,416.02	1.23	1.06	-0.63
7,339.00	87.69	20.53	4,198.36	3,287.16	1,230.92	3,446.41	1.94	1.32	-1.42
7,371.00	87.82	20.84	4,199.62	3,317.08	1,242.21	3,477.79	1.05	0.41	0.97
7,402.00	88.22	20.93	4,200.69	3,346.02	1,253.26	3,508.17	1.32	1.29	0.29
7,433.00	88.52	21.00	4,201.57	3,374.96	1,264.34	3,538.55	0.99	0.97	0.23
7,465.00	88.93	20.86	4,202.28	3,404.84	1,275.77	3,569.92	1.35	1.28	-0.44
7,496.00	88.76	21.30	4,202.91	3,433.76	1,286.92	3,600.29	1.52	-0.55	1.42
7,528.00	88.69	20.53	4,203.62	3,463.64	1,298.34	3,631.66	2.42	-0.22	-2.41
7,560.00	88.96	20.54	4,204.27	3,493.60	1,309.56	3,663.07	0.84	0.84	0.03
7,591.00	89.56	19.29	4,204.68	3,522.75	1,320.12	3,693.57	4.47	1.94	-4.03
7,623.00	88.46	18.36	4,205.23	3,553.03	1,330.45	3,725.15	4.50	-3.44	-2.91
7,654.00	88.42	18.55	4,206.07	3,582.42	1,340.25	3,755.77	0.63	-0.13	0.61
7,685.00	88.66	18.51	4,206.86	3,611.81	1,350.10	3,786.38	0.78	0.77	-0.13
7,717.00	88.59	18.66	4,207.63	3,642.13	1,360.30	3,817.98	0.52	-0.22	0.47
7,748.00	88.72	19.16	4,208.36	3,671.45	1,370.34	3,848.56	1.67	0.42	1.61
7,779.00	89.03	19.40	4,208.97	3,700.70	1,380.58	3,879.12	1.26	1.00	0.77
7,810.00	89.26	18.90	4,209.43	3,729.99	1,390.74	3,909.68	1.78	0.74	-1.61
7,838.00	89.29	19.44	4,209.78	3,756.43	1,399.94	3,937.29	1.93	0.11	1.93
7,882.00	89.29	19.44	4,210.33	3,797.92	1,414.58	3,980.64	0.00	0.00	0.00

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
270.00	270.00	9 5/8" Casing	9.620	12.250

Checked By: _____ Approved By: _____ Date: _____