

EXTRACTION OIL & GAS

Broomfield County

Sec 7-T1S-R68W

LIVINGSTON S19-25-3N

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

05 December, 2017

Vertical Section at 192.04° (1700 usft/in)

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well LIVINGSTON S19-25-3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5336.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5336.00usft
Site:	Sec 7-T1S-R68W	North Reference:	True
Well:	LIVINGSTON S19-25-3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Project	Broomfield County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec 7-T1S-R68W			
Site Position:		Northing:	1,238,329.25 usft	Latitude:	39° 59' 11.974 N
From:	Lat/Long	Easting:	3,130,366.41 usft	Longitude:	105° 2' 5.099 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.30 °

Well	LIVINGSTON S19-25-3N					
Well Position	+N/-S	-2,948.95 usft	Northing:	1,235,372.63 usft	Latitude:	39° 58' 42.830 N
	+E/-W	-1,469.36 usft	Easting:	3,128,912.54 usft	Longitude:	105° 2' 23.975 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	5,311.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/4/2017	8.27	66.46	52,086.10175343

Design	PROPOSAL 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	192.04

Plan Survey Tool Program	Date	12/5/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,479.74	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,522.85	24.46	285.14	1,486.05	67.14	-248.13	2.00	2.00	0.00	285.14	
6,777.21	24.46	285.14	6,268.95	635.32	-2,347.97	0.00	0.00	0.00	0.00	
8,000.06	0.00	0.00	7,455.00	702.46	-2,596.10	2.00	-2.00	0.00	180.00	
8,030.06	0.00	0.00	7,485.00	702.46	-2,596.10	0.00	0.00	0.00	0.00	
8,930.13	90.00	180.23	8,058.00	129.46	-2,598.39	10.00	10.00	-19.97	180.23	LIVINGSTON S19 3N
21,479.78	90.00	180.23	8,058.00	-12,420.09	-2,648.49	0.00	0.00	0.00	0.00	LIVINGSTON S19 3N

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Site:	Sec 7-T1S-R68W	North Reference:	True
Well:	LIVINGSTON S19-25-3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
BUILD 2°/100'									
400.00	2.00	285.14	399.98	0.46	-1.68	-0.09	2.00	2.00	0.00
500.00	4.00	285.14	499.84	1.82	-6.74	-0.38	2.00	2.00	0.00
600.00	6.00	285.14	599.45	4.10	-15.15	-0.85	2.00	2.00	0.00
700.00	8.00	285.14	698.70	7.28	-26.91	-1.51	2.00	2.00	0.00
800.00	10.00	285.14	797.47	11.37	-42.01	-2.36	2.00	2.00	0.00
900.00	12.00	285.14	895.62	16.35	-60.43	-3.39	2.00	2.00	0.00
1,000.00	14.00	285.14	993.06	22.23	-82.14	-4.61	2.00	2.00	0.00
1,100.00	16.00	285.14	1,089.64	28.99	-107.12	-6.01	2.00	2.00	0.00
1,200.00	18.00	285.14	1,185.27	36.62	-135.35	-7.59	2.00	2.00	0.00
1,300.00	20.00	285.14	1,279.82	45.13	-166.77	-9.36	2.00	2.00	0.00
1,400.00	22.00	285.14	1,373.17	54.49	-201.36	-11.30	2.00	2.00	0.00
1,500.00	24.00	285.14	1,465.21	64.69	-239.08	-13.41	2.00	2.00	0.00
1,522.85	24.46	285.14	1,486.05	67.14	-248.13	-13.92	2.00	2.00	0.00
HOLD 24.46° INC									
1,600.00	24.46	285.14	1,556.28	75.48	-278.96	-15.65	0.00	0.00	0.00
1,700.00	24.46	285.14	1,647.31	86.30	-318.92	-17.89	0.00	0.00	0.00
1,800.00	24.46	285.14	1,738.33	97.11	-358.89	-20.13	0.00	0.00	0.00
1,900.00	24.46	285.14	1,829.36	107.92	-398.85	-22.37	0.00	0.00	0.00
2,000.00	24.46	285.14	1,920.39	118.74	-438.82	-24.62	0.00	0.00	0.00
2,100.00	24.46	285.14	2,011.42	129.55	-478.78	-26.86	0.00	0.00	0.00
2,200.00	24.46	285.14	2,102.44	140.36	-518.74	-29.10	0.00	0.00	0.00
2,300.00	24.46	285.14	2,193.47	151.18	-558.71	-31.34	0.00	0.00	0.00
2,400.00	24.46	285.14	2,284.50	161.99	-598.67	-33.58	0.00	0.00	0.00
2,500.00	24.46	285.14	2,375.52	172.80	-638.64	-35.82	0.00	0.00	0.00
2,600.00	24.46	285.14	2,466.55	183.62	-678.60	-38.07	0.00	0.00	0.00
2,700.00	24.46	285.14	2,557.58	194.43	-718.56	-40.31	0.00	0.00	0.00
2,800.00	24.46	285.14	2,648.61	205.24	-758.53	-42.55	0.00	0.00	0.00
2,900.00	24.46	285.14	2,739.63	216.06	-798.49	-44.79	0.00	0.00	0.00
3,000.00	24.46	285.14	2,830.66	226.87	-838.45	-47.03	0.00	0.00	0.00
3,100.00	24.46	285.14	2,921.69	237.68	-878.42	-49.28	0.00	0.00	0.00
3,200.00	24.46	285.14	3,012.72	248.50	-918.38	-51.52	0.00	0.00	0.00
3,300.00	24.46	285.14	3,103.74	259.31	-958.35	-53.76	0.00	0.00	0.00
3,400.00	24.46	285.14	3,194.77	270.13	-998.31	-56.00	0.00	0.00	0.00
3,500.00	24.46	285.14	3,285.80	280.94	-1,038.27	-58.24	0.00	0.00	0.00
3,600.00	24.46	285.14	3,376.82	291.75	-1,078.24	-60.48	0.00	0.00	0.00
3,700.00	24.46	285.14	3,467.85	302.57	-1,118.20	-62.73	0.00	0.00	0.00
3,800.00	24.46	285.14	3,558.88	313.38	-1,158.17	-64.97	0.00	0.00	0.00
3,900.00	24.46	285.14	3,649.91	324.19	-1,198.13	-67.21	0.00	0.00	0.00
4,000.00	24.46	285.14	3,740.93	335.01	-1,238.09	-69.45	0.00	0.00	0.00
4,100.00	24.46	285.14	3,831.96	345.82	-1,278.06	-71.69	0.00	0.00	0.00
4,200.00	24.46	285.14	3,922.99	356.63	-1,318.02	-73.94	0.00	0.00	0.00
4,300.00	24.46	285.14	4,014.01	367.45	-1,357.98	-76.18	0.00	0.00	0.00
4,400.00	24.46	285.14	4,105.04	378.26	-1,397.95	-78.42	0.00	0.00	0.00
4,500.00	24.46	285.14	4,196.07	389.07	-1,437.91	-80.66	0.00	0.00	0.00
4,600.00	24.46	285.14	4,287.10	399.89	-1,477.88	-82.90	0.00	0.00	0.00
4,700.00	24.46	285.14	4,378.12	410.70	-1,517.84	-85.14	0.00	0.00	0.00
4,800.00	24.46	285.14	4,469.15	421.51	-1,557.80	-87.39	0.00	0.00	0.00
4,900.00	24.46	285.14	4,560.18	432.33	-1,597.77	-89.63	0.00	0.00	0.00

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Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,994.28	24.46	285.14	4,646.00	442.52	-1,635.45	-91.74	0.00	0.00	0.00
PARKMAN									
5,000.00	24.46	285.14	4,651.21	443.14	-1,637.73	-91.87	0.00	0.00	0.00
5,100.00	24.46	285.14	4,742.23	453.96	-1,677.70	-94.11	0.00	0.00	0.00
5,200.00	24.46	285.14	4,833.26	464.77	-1,717.66	-96.35	0.00	0.00	0.00
5,300.00	24.46	285.14	4,924.29	475.58	-1,757.62	-98.59	0.00	0.00	0.00
5,400.00	24.46	285.14	5,015.31	486.40	-1,797.59	-100.84	0.00	0.00	0.00
5,500.00	24.46	285.14	5,106.34	497.21	-1,837.55	-103.08	0.00	0.00	0.00
5,522.69	24.46	285.14	5,127.00	499.66	-1,846.62	-103.59	0.00	0.00	0.00
SUSSEX									
5,600.00	24.46	285.14	5,197.37	508.02	-1,877.51	-105.32	0.00	0.00	0.00
5,700.00	24.46	285.14	5,288.40	518.84	-1,917.48	-107.56	0.00	0.00	0.00
5,800.00	24.46	285.14	5,379.42	529.65	-1,957.44	-109.80	0.00	0.00	0.00
5,900.00	24.46	285.14	5,470.45	540.46	-1,997.41	-112.05	0.00	0.00	0.00
6,000.00	24.46	285.14	5,561.48	551.28	-2,037.37	-114.29	0.00	0.00	0.00
6,100.00	24.46	285.14	5,652.51	562.09	-2,077.33	-116.53	0.00	0.00	0.00
6,200.00	24.46	285.14	5,743.53	572.90	-2,117.30	-118.77	0.00	0.00	0.00
6,300.00	24.46	285.14	5,834.56	583.72	-2,157.26	-121.01	0.00	0.00	0.00
6,400.00	24.46	285.14	5,925.59	594.53	-2,197.22	-123.25	0.00	0.00	0.00
6,500.00	24.46	285.14	6,016.61	605.34	-2,237.19	-125.50	0.00	0.00	0.00
6,533.38	24.46	285.14	6,047.00	608.95	-2,250.53	-126.24	0.00	0.00	0.00
SHANNON									
6,600.00	24.46	285.14	6,107.64	616.16	-2,277.15	-127.74	0.00	0.00	0.00
6,700.00	24.46	285.14	6,198.67	626.97	-2,317.12	-129.98	0.00	0.00	0.00
6,777.21	24.46	285.14	6,268.95	635.32	-2,347.97	-131.71	0.00	0.00	0.00
DROP 2°/100'									
6,800.00	24.00	285.14	6,289.73	637.76	-2,357.00	-132.22	2.00	-2.00	0.00
6,900.00	22.00	285.14	6,381.78	647.97	-2,394.72	-134.33	2.00	-2.00	0.00
7,000.00	20.00	285.14	6,475.13	657.33	-2,429.31	-136.27	2.00	-2.00	0.00
7,100.00	18.00	285.14	6,569.68	665.83	-2,460.74	-138.04	2.00	-2.00	0.00
7,200.00	16.00	285.14	6,665.30	673.47	-2,488.96	-139.62	2.00	-2.00	0.00
7,300.00	14.00	285.14	6,761.89	680.23	-2,513.94	-141.02	2.00	-2.00	0.00
7,400.00	12.00	285.14	6,859.32	686.11	-2,535.66	-142.24	2.00	-2.00	0.00
7,500.00	10.00	285.14	6,957.48	691.09	-2,554.08	-143.27	2.00	-2.00	0.00
7,600.00	8.00	285.14	7,056.24	695.18	-2,569.18	-144.12	2.00	-2.00	0.00
7,700.00	6.00	285.14	7,155.49	698.36	-2,580.95	-144.78	2.00	-2.00	0.00
7,800.00	4.00	285.14	7,255.11	700.64	-2,589.36	-145.25	2.00	-2.00	0.00
7,900.00	2.00	285.14	7,354.96	702.00	-2,594.41	-145.54	2.00	-2.00	0.00
8,000.06	0.00	0.00	7,455.00	702.46	-2,596.10	-145.63	2.00	-2.00	0.00
HOLD VERTICAL									
8,030.06	0.00	0.00	7,485.00	702.46	-2,596.10	-145.63	0.00	0.00	0.00
KOP, BUILD 10°/100'									
8,050.00	1.99	180.23	7,504.94	702.11	-2,596.10	-145.29	10.00	10.00	0.00
8,100.00	6.99	180.23	7,554.77	698.20	-2,596.12	-141.46	10.00	10.00	0.00
8,150.00	11.99	180.23	7,604.07	689.95	-2,596.15	-133.39	10.00	10.00	0.00
8,200.00	16.99	180.23	7,652.46	677.44	-2,596.20	-121.14	10.00	10.00	0.00
8,250.00	21.99	180.23	7,699.58	660.76	-2,596.27	-104.82	10.00	10.00	0.00
8,300.00	26.99	180.23	7,745.07	640.04	-2,596.35	-84.53	10.00	10.00	0.00
8,350.00	31.99	180.23	7,788.58	615.44	-2,596.45	-60.45	10.00	10.00	0.00
8,400.00	36.99	180.23	7,829.77	587.13	-2,596.56	-32.74	10.00	10.00	0.00
8,450.00	41.99	180.23	7,868.35	555.34	-2,596.69	-1.62	10.00	10.00	0.00
8,465.88	43.58	180.23	7,880.00	544.56	-2,596.73	8.93	10.00	10.00	0.00
NIOBRARA									

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Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,500.00	46.99	180.23	7,904.00	520.31	-2,596.83	32.66	10.00	10.00	0.00	
8,550.00	51.99	180.23	7,936.47	482.31	-2,596.98	69.86	10.00	10.00	0.00	
8,600.00	56.99	180.23	7,965.50	441.62	-2,597.14	109.69	10.00	10.00	0.00	
8,650.00	61.99	180.23	7,990.88	398.56	-2,597.31	151.84	10.00	10.00	0.00	
8,700.00	66.99	180.23	8,012.41	353.45	-2,597.49	196.00	10.00	10.00	0.00	
8,750.00	71.99	180.23	8,029.92	306.63	-2,597.68	241.82	10.00	10.00	0.00	
8,800.00	76.99	180.23	8,043.29	258.47	-2,597.87	288.97	10.00	10.00	0.00	
8,822.92	79.28	180.23	8,048.00	236.05	-2,597.96	310.92	10.00	10.00	0.00	
NIO B TARGET										
8,850.00	81.99	180.23	8,052.41	209.33	-2,598.07	337.07	10.00	10.00	0.00	
8,900.00	86.99	180.23	8,057.21	159.57	-2,598.27	385.77	10.00	10.00	0.00	
8,930.13	90.00	180.23	8,058.00	129.46	-2,598.39	415.25	10.00	10.00	0.00	
LP @ 90° INC, 180.23° AZM HOLD										
9,000.00	90.00	180.23	8,058.00	59.59	-2,598.67	483.64	0.00	0.00	0.00	
9,100.00	90.00	180.23	8,058.00	-40.41	-2,599.07	581.53	0.00	0.00	0.00	
9,200.00	90.00	180.23	8,058.00	-140.41	-2,599.46	679.41	0.00	0.00	0.00	
9,300.00	90.00	180.23	8,058.00	-240.41	-2,599.86	777.29	0.00	0.00	0.00	
9,400.00	90.00	180.23	8,058.00	-340.41	-2,600.26	875.18	0.00	0.00	0.00	
9,500.00	90.00	180.23	8,058.00	-440.41	-2,600.66	973.06	0.00	0.00	0.00	
9,600.00	90.00	180.23	8,058.00	-540.41	-2,601.06	1,070.95	0.00	0.00	0.00	
9,700.00	90.00	180.23	8,058.00	-640.41	-2,601.46	1,168.83	0.00	0.00	0.00	
9,800.00	90.00	180.23	8,058.00	-740.41	-2,601.86	1,266.71	0.00	0.00	0.00	
9,900.00	90.00	180.23	8,057.99	-840.40	-2,602.26	1,364.60	0.00	0.00	0.00	
10,000.00	90.00	180.23	8,057.99	-940.40	-2,602.66	1,462.48	0.00	0.00	0.00	
10,100.00	90.00	180.23	8,057.99	-1,040.40	-2,603.06	1,560.37	0.00	0.00	0.00	
10,200.00	90.00	180.23	8,057.99	-1,140.40	-2,603.46	1,658.25	0.00	0.00	0.00	
10,300.00	90.00	180.23	8,057.99	-1,240.40	-2,603.85	1,756.13	0.00	0.00	0.00	
10,400.00	90.00	180.23	8,057.99	-1,340.40	-2,604.25	1,854.02	0.00	0.00	0.00	
10,500.00	90.00	180.23	8,057.99	-1,440.40	-2,604.65	1,951.90	0.00	0.00	0.00	
10,600.00	90.00	180.23	8,057.99	-1,540.40	-2,605.05	2,049.78	0.00	0.00	0.00	
10,700.00	90.00	180.23	8,057.99	-1,640.40	-2,605.45	2,147.67	0.00	0.00	0.00	
10,800.00	90.00	180.23	8,057.99	-1,740.40	-2,605.85	2,245.55	0.00	0.00	0.00	
10,900.00	90.00	180.23	8,057.99	-1,840.40	-2,606.25	2,343.44	0.00	0.00	0.00	
11,000.00	90.00	180.23	8,057.99	-1,940.40	-2,606.65	2,441.32	0.00	0.00	0.00	
11,100.00	90.00	180.23	8,057.99	-2,040.39	-2,607.05	2,539.20	0.00	0.00	0.00	
11,200.00	90.00	180.23	8,057.99	-2,140.39	-2,607.45	2,637.09	0.00	0.00	0.00	
11,300.00	90.00	180.23	8,057.99	-2,240.39	-2,607.85	2,734.97	0.00	0.00	0.00	
11,400.00	90.00	180.23	8,057.99	-2,340.39	-2,608.25	2,832.86	0.00	0.00	0.00	
11,500.00	90.00	180.23	8,057.99	-2,440.39	-2,608.64	2,930.74	0.00	0.00	0.00	
11,600.00	90.00	180.23	8,057.98	-2,540.39	-2,609.04	3,028.62	0.00	0.00	0.00	
11,700.00	90.00	180.23	8,057.98	-2,640.39	-2,609.44	3,126.51	0.00	0.00	0.00	
11,800.00	90.00	180.23	8,057.98	-2,740.39	-2,609.84	3,224.39	0.00	0.00	0.00	
11,900.00	90.00	180.23	8,057.98	-2,840.39	-2,610.24	3,322.28	0.00	0.00	0.00	
12,000.00	90.00	180.23	8,057.98	-2,940.39	-2,610.64	3,420.16	0.00	0.00	0.00	
12,100.00	90.00	180.23	8,057.98	-3,040.39	-2,611.04	3,518.04	0.00	0.00	0.00	
12,200.00	90.00	180.23	8,057.98	-3,140.39	-2,611.44	3,615.93	0.00	0.00	0.00	
12,300.00	90.00	180.23	8,057.98	-3,240.39	-2,611.84	3,713.81	0.00	0.00	0.00	
12,400.00	90.00	180.23	8,057.98	-3,340.38	-2,612.24	3,811.69	0.00	0.00	0.00	
12,500.00	90.00	180.23	8,057.98	-3,440.38	-2,612.64	3,909.58	0.00	0.00	0.00	
12,600.00	90.00	180.23	8,057.98	-3,540.38	-2,613.03	4,007.46	0.00	0.00	0.00	
12,700.00	90.00	180.23	8,057.98	-3,640.38	-2,613.43	4,105.35	0.00	0.00	0.00	
12,800.00	90.00	180.23	8,057.98	-3,740.38	-2,613.83	4,203.23	0.00	0.00	0.00	
12,900.00	90.00	180.23	8,057.98	-3,840.38	-2,614.23	4,301.11	0.00	0.00	0.00	
13,000.00	90.00	180.23	8,057.98	-3,940.38	-2,614.63	4,399.00	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well LIVINGSTON S19-25-3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5336.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5336.00usft
Site:	Sec 7-T1S-R68W	North Reference:	True
Well:	LIVINGSTON S19-25-3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,100.00	90.00	180.23	8,057.98	-4,040.38	-2,615.03	4,496.88	0.00	0.00	0.00
13,200.00	90.00	180.23	8,057.98	-4,140.38	-2,615.43	4,594.77	0.00	0.00	0.00
13,300.00	90.00	180.23	8,057.98	-4,240.38	-2,615.83	4,692.65	0.00	0.00	0.00
13,400.00	90.00	180.23	8,057.97	-4,340.38	-2,616.23	4,790.53	0.00	0.00	0.00
13,500.00	90.00	180.23	8,057.97	-4,440.38	-2,616.63	4,888.42	0.00	0.00	0.00
13,600.00	90.00	180.23	8,057.97	-4,540.37	-2,617.03	4,986.30	0.00	0.00	0.00
13,700.00	90.00	180.23	8,057.97	-4,640.37	-2,617.43	5,084.19	0.00	0.00	0.00
13,800.00	90.00	180.23	8,057.97	-4,740.37	-2,617.82	5,182.07	0.00	0.00	0.00
13,900.00	90.00	180.23	8,057.97	-4,840.37	-2,618.22	5,279.95	0.00	0.00	0.00
14,000.00	90.00	180.23	8,057.97	-4,940.37	-2,618.62	5,377.84	0.00	0.00	0.00
14,100.00	90.00	180.23	8,057.97	-5,040.37	-2,619.02	5,475.72	0.00	0.00	0.00
14,200.00	90.00	180.23	8,057.97	-5,140.37	-2,619.42	5,573.60	0.00	0.00	0.00
14,300.00	90.00	180.23	8,057.97	-5,240.37	-2,619.82	5,671.49	0.00	0.00	0.00
14,400.00	90.00	180.23	8,057.97	-5,340.37	-2,620.22	5,769.37	0.00	0.00	0.00
14,500.00	90.00	180.23	8,057.97	-5,440.37	-2,620.62	5,867.26	0.00	0.00	0.00
14,600.00	90.00	180.23	8,057.97	-5,540.37	-2,621.02	5,965.14	0.00	0.00	0.00
14,700.00	90.00	180.23	8,057.97	-5,640.37	-2,621.42	6,063.02	0.00	0.00	0.00
14,800.00	90.00	180.23	8,057.97	-5,740.37	-2,621.82	6,160.91	0.00	0.00	0.00
14,900.00	90.00	180.23	8,057.97	-5,840.36	-2,622.21	6,258.79	0.00	0.00	0.00
15,000.00	90.00	180.23	8,057.97	-5,940.36	-2,622.61	6,356.68	0.00	0.00	0.00
15,100.00	90.00	180.23	8,057.96	-6,040.36	-2,623.01	6,454.56	0.00	0.00	0.00
15,200.00	90.00	180.23	8,057.96	-6,140.36	-2,623.41	6,552.44	0.00	0.00	0.00
15,300.00	90.00	180.23	8,057.96	-6,240.36	-2,623.81	6,650.33	0.00	0.00	0.00
15,400.00	90.00	180.23	8,057.96	-6,340.36	-2,624.21	6,748.21	0.00	0.00	0.00
15,500.00	90.00	180.23	8,057.96	-6,440.36	-2,624.61	6,846.09	0.00	0.00	0.00
15,600.00	90.00	180.23	8,057.96	-6,540.36	-2,625.01	6,943.98	0.00	0.00	0.00
15,700.00	90.00	180.23	8,057.96	-6,640.36	-2,625.41	7,041.86	0.00	0.00	0.00
15,800.00	90.00	180.23	8,057.96	-6,740.36	-2,625.81	7,139.75	0.00	0.00	0.00
15,900.00	90.00	180.23	8,057.96	-6,840.36	-2,626.21	7,237.63	0.00	0.00	0.00
16,000.00	90.00	180.23	8,057.96	-6,940.36	-2,626.61	7,335.51	0.00	0.00	0.00
16,100.00	90.00	180.23	8,057.96	-7,040.36	-2,627.00	7,433.40	0.00	0.00	0.00
16,200.00	90.00	180.23	8,057.96	-7,140.35	-2,627.40	7,531.28	0.00	0.00	0.00
16,300.00	90.00	180.23	8,057.96	-7,240.35	-2,627.80	7,629.17	0.00	0.00	0.00
16,400.00	90.00	180.23	8,057.96	-7,340.35	-2,628.20	7,727.05	0.00	0.00	0.00
16,500.00	90.00	180.23	8,057.96	-7,440.35	-2,628.60	7,824.93	0.00	0.00	0.00
16,600.00	90.00	180.23	8,057.96	-7,540.35	-2,629.00	7,922.82	0.00	0.00	0.00
16,700.00	90.00	180.23	8,057.96	-7,640.35	-2,629.40	8,020.70	0.00	0.00	0.00
16,800.00	90.00	180.23	8,057.95	-7,740.35	-2,629.80	8,118.59	0.00	0.00	0.00
16,900.00	90.00	180.23	8,057.95	-7,840.35	-2,630.20	8,216.47	0.00	0.00	0.00
17,000.00	90.00	180.23	8,057.95	-7,940.35	-2,630.60	8,314.35	0.00	0.00	0.00
17,100.00	90.00	180.23	8,057.95	-8,040.35	-2,631.00	8,412.24	0.00	0.00	0.00
17,200.00	90.00	180.23	8,057.95	-8,140.35	-2,631.39	8,510.12	0.00	0.00	0.00
17,300.00	90.00	180.23	8,057.95	-8,240.35	-2,631.79	8,608.00	0.00	0.00	0.00
17,400.00	90.00	180.23	8,057.95	-8,340.34	-2,632.19	8,705.89	0.00	0.00	0.00
17,500.00	90.00	180.23	8,057.95	-8,440.34	-2,632.59	8,803.77	0.00	0.00	0.00
17,600.00	90.00	180.23	8,057.95	-8,540.34	-2,632.99	8,901.66	0.00	0.00	0.00
17,700.00	90.00	180.23	8,057.95	-8,640.34	-2,633.39	8,999.54	0.00	0.00	0.00
17,800.00	90.00	180.23	8,057.95	-8,740.34	-2,633.79	9,097.42	0.00	0.00	0.00
17,900.00	90.00	180.23	8,057.95	-8,840.34	-2,634.19	9,195.31	0.00	0.00	0.00
18,000.00	90.00	180.23	8,057.95	-8,940.34	-2,634.59	9,293.19	0.00	0.00	0.00
18,100.00	90.00	180.23	8,057.95	-9,040.34	-2,634.99	9,391.08	0.00	0.00	0.00
18,200.00	90.00	180.23	8,057.95	-9,140.34	-2,635.39	9,488.96	0.00	0.00	0.00
18,300.00	90.00	180.23	8,057.95	-9,240.34	-2,635.79	9,586.84	0.00	0.00	0.00
18,400.00	90.00	180.23	8,057.95	-9,340.34	-2,636.18	9,684.73	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well LIVINGSTON S19-25-3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5336.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5336.00usft
Site:	Sec 7-T1S-R68W	North Reference:	True
Well:	LIVINGSTON S19-25-3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
18,500.00	90.00	180.23	8,057.95	-9,440.34	-2,636.58	9,782.61	0.00	0.00	0.00	
18,600.00	90.00	180.23	8,057.94	-9,540.34	-2,636.98	9,880.50	0.00	0.00	0.00	
18,700.00	90.00	180.23	8,057.94	-9,640.33	-2,637.38	9,978.38	0.00	0.00	0.00	
18,800.00	90.00	180.23	8,057.94	-9,740.33	-2,637.78	10,076.26	0.00	0.00	0.00	
18,900.00	90.00	180.23	8,057.94	-9,840.33	-2,638.18	10,174.15	0.00	0.00	0.00	
19,000.00	90.00	180.23	8,057.94	-9,940.33	-2,638.58	10,272.03	0.00	0.00	0.00	
19,100.00	90.00	180.23	8,057.94	-10,040.33	-2,638.98	10,369.91	0.00	0.00	0.00	
19,200.00	90.00	180.23	8,057.94	-10,140.33	-2,639.38	10,467.80	0.00	0.00	0.00	
19,300.00	90.00	180.23	8,057.94	-10,240.33	-2,639.78	10,565.68	0.00	0.00	0.00	
19,400.00	90.00	180.23	8,057.94	-10,340.33	-2,640.18	10,663.57	0.00	0.00	0.00	
19,500.00	90.00	180.23	8,057.94	-10,440.33	-2,640.57	10,761.45	0.00	0.00	0.00	
19,600.00	90.00	180.23	8,057.94	-10,540.33	-2,640.97	10,859.33	0.00	0.00	0.00	
19,700.00	90.00	180.23	8,057.94	-10,640.33	-2,641.37	10,957.22	0.00	0.00	0.00	
19,800.00	90.00	180.23	8,057.94	-10,740.33	-2,641.77	11,055.10	0.00	0.00	0.00	
19,900.00	90.00	180.23	8,057.94	-10,840.32	-2,642.17	11,152.99	0.00	0.00	0.00	
20,000.00	90.00	180.23	8,057.94	-10,940.32	-2,642.57	11,250.87	0.00	0.00	0.00	
20,100.00	90.00	180.23	8,057.94	-11,040.32	-2,642.97	11,348.75	0.00	0.00	0.00	
20,200.00	90.00	180.23	8,057.94	-11,140.32	-2,643.37	11,446.64	0.00	0.00	0.00	
20,300.00	90.00	180.23	8,057.93	-11,240.32	-2,643.77	11,544.52	0.00	0.00	0.00	
20,400.00	90.00	180.23	8,057.93	-11,340.32	-2,644.17	11,642.41	0.00	0.00	0.00	
20,500.00	90.00	180.23	8,057.93	-11,440.32	-2,644.57	11,740.29	0.00	0.00	0.00	
20,600.00	90.00	180.23	8,057.93	-11,540.32	-2,644.97	11,838.17	0.00	0.00	0.00	
20,700.00	90.00	180.23	8,057.93	-11,640.32	-2,645.36	11,936.06	0.00	0.00	0.00	
20,800.00	90.00	180.23	8,057.93	-11,740.32	-2,645.76	12,033.94	0.00	0.00	0.00	
20,900.00	90.00	180.23	8,057.93	-11,840.32	-2,646.16	12,131.82	0.00	0.00	0.00	
21,000.00	90.00	180.23	8,057.93	-11,940.32	-2,646.56	12,229.71	0.00	0.00	0.00	
21,479.78	90.00	180.23	8,058.00	-12,420.09	-2,648.49	12,699.33	0.00	0.00	0.00	
TD at 21479.78' MD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
LIVINGSTON S19 3N - I - hit/miss target - Shape - Point	0.00	0.00	8,058.00	129.46	-2,598.39	1,235,488.61	3,126,313.52	39° 58' 44.108 N		105° 2' 57.354 W
LIVINGSTON S19 3N - I - plan hits target center - Point	0.00	0.00	8,058.00	-12,420.09	-2,648.49	1,222,938.96	3,126,328.52	39° 56' 40.085 N		105° 2' 57.980 W

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well LIVINGSTON S19-25-3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5336.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5336.00usft
Site:	Sec 7-T1S-R68W	North Reference:	True
Well:	LIVINGSTON S19-25-3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,994.28	4,646.00	PARKMAN				
5,522.69	5,127.00	SUSSEX				
6,533.38	6,047.00	SHANNON				
8,465.88	7,880.00	NIOBRARA				
8,822.92	8,048.00	NIO B TARGET				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
300.00	300.00	0.00	0.00	BUILD 2°/100'	
1,522.85	1,486.05	67.14	-248.13	HOLD 24.46° INC	
6,777.21	6,268.95	635.32	-2,347.97	DROP 2°/100'	
8,000.06	7,455.00	702.46	-2,596.10	HOLD VERTICAL	
8,030.06	7,485.00	702.46	-2,596.10	KOP, BUILD 10°/100'	
8,930.13	8,058.00	129.46	-2,598.39	LP @ 90° INC, 180.23° AZM HOLD	
21,479.78	8,058.00	-12,420.09	-2,648.49	TD at 21479.78' MD	