



Ascent Energy, LLC

**Lea County, NM (NAD 83 NME)
(Toque) Sec-6_T-21-S_R-33-E
Toque State Com #502H**

ST01

Design: AWB

Standard Survey Report

19 December, 2019

INTREPID



Intrepid Survey Report



Company:	Ascent Energy, LLC	Local Co-ordinate Reference:	Well Toque State Com #502H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3820.0usft (Precision 553)
Site:	(Toque) Sec-6_T-21-S_R-33-E	MD Reference:	KB @ 3820.0usft (Precision 553)
Well:	Toque State Com #502H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Project	Lea County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	(Toque) Sec-6_T-21-S_R-33-E		
-------------	-----------------------------	--	--

Site Position:		Northing:	549,140.00 usft	Latitude:	32° 30' 27.324 N
From:	Map	Easting:	763,075.50 usft	Longitude:	103° 36' 50.541 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.39 °

Well	Toque State Com #502H					
Well Position	+N/-S	0.0 usft	Northing:	549,139.80 usft	Latitude:	32° 30' 27.330 N
	+E/-W	0.0 usft	Easting:	762,955.60 usft	Longitude:	103° 36' 51.941 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,795.0 usft

Wellbore	ST01				
-----------------	------	--	--	--	--

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/09/19	6.73	60.28	47,843.21515134

Design	AWB				
---------------	-----	--	--	--	--

Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	13,437.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	179.99

Survey Program		Date	12/19/19		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
167.0	5,374.0	Total MWD Svys (OWB)	MWD	OWSG MWD - Standard	
5,522.0	13,437.0	Intrepid MWD (OWB)	MWD	OWSG MWD - Standard	
13,529.0	18,505.0	Intrepid MWD ST01 (ST01)	MWD	OWSG MWD - Standard	

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
167.0	0.26	309.66	167.0	0.2	-0.3	-0.2	0.16	0.16	0.00
227.0	0.44	278.28	227.0	0.4	-0.6	-0.4	0.43	0.30	-52.30
315.0	0.57	286.90	315.0	0.5	-1.4	-0.5	0.17	0.15	9.80
403.0	0.66	266.33	403.0	0.6	-2.3	-0.6	0.27	0.10	-23.38
492.0	0.57	262.90	492.0	0.5	-3.3	-0.5	0.11	-0.10	-3.85
580.0	0.79	269.76	580.0	0.5	-4.3	-0.5	0.27	0.25	7.80
676.0	0.88	285.67	676.0	0.7	-5.7	-0.7	0.26	0.09	16.57
768.0	0.92	281.27	768.0	1.0	-7.1	-1.0	0.09	0.04	-4.78



Intrepid Survey Report



Company:	Ascent Energy, LLC	Local Co-ordinate Reference:	Well Toque State Com #502H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3820.0usft (Precision 553)
Site:	(Toque) Sec-6 T-21-S_R-33-E	MD Reference:	KB @ 3820.0usft (Precision 553)
Well:	Toque State Com #502H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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)
861.0	0.84	260.97	860.9	1.1	-8.5	-1.1	0.34	-0.09	-21.83
954.0	0.79	250.77	953.9	0.7	-9.8	-0.7	0.16	-0.05	-10.97
1,048.0	0.75	234.43	1,047.9	0.2	-10.9	-0.2	0.24	-0.04	-17.38
1,140.0	0.88	211.66	1,139.9	-0.8	-11.7	0.8	0.38	0.14	-24.75
1,233.0	1.14	207.27	1,232.9	-2.2	-12.5	2.2	0.29	0.28	-4.72
1,325.0	1.67	202.26	1,324.9	-4.3	-13.5	4.3	0.59	0.58	-5.45
1,419.0	1.58	200.24	1,418.8	-6.8	-14.4	6.7	0.11	-0.10	-2.15
1,511.0	1.45	195.40	1,510.8	-9.1	-15.2	9.1	0.20	-0.14	-5.26
1,602.0	1.58	187.49	1,601.8	-11.4	-15.6	11.4	0.27	0.14	-8.69
1,710.0	1.67	182.31	1,709.7	-14.5	-15.9	14.5	0.16	0.08	-4.80
1,803.0	1.45	168.95	1,802.7	-17.0	-15.7	17.0	0.46	-0.24	-14.37
1,895.0	1.41	157.87	1,894.7	-19.2	-15.1	19.2	0.30	-0.04	-12.04
1,989.0	1.41	158.66	1,988.6	-21.3	-14.2	21.3	0.02	0.00	0.84
2,083.0	0.70	217.46	2,082.6	-22.8	-14.1	22.8	1.28	-0.76	62.55
2,175.0	2.64	286.28	2,174.6	-22.7	-16.5	22.7	2.69	2.11	74.80
2,268.0	3.69	285.23	2,267.4	-21.3	-21.5	21.3	1.13	1.13	-1.13
2,361.0	4.75	288.13	2,360.2	-19.3	-28.0	19.3	1.16	1.14	3.12
2,455.0	6.95	286.99	2,453.7	-16.5	-37.2	16.4	2.34	2.34	-1.21
2,549.0	9.49	286.28	2,546.7	-12.6	-50.0	12.6	2.70	2.70	-0.76
2,642.0	11.78	286.55	2,638.1	-7.8	-66.5	7.8	2.46	2.46	0.29
2,735.0	13.41	285.49	2,728.9	-2.2	-86.0	2.2	1.77	1.75	-1.14
2,827.0	12.79	285.75	2,818.5	3.4	-106.1	-3.5	0.68	-0.67	0.28
2,920.0	12.35	287.42	2,909.3	9.2	-125.5	-9.2	0.61	-0.47	1.80
3,012.0	11.82	281.98	2,999.2	14.1	-144.1	-14.1	1.36	-0.58	-5.91
3,106.0	11.69	281.01	3,091.2	17.9	-162.8	-18.0	0.25	-0.14	-1.03
3,200.0	11.03	282.94	3,183.4	21.8	-180.9	-21.8	0.81	-0.70	2.05
3,294.0	10.90	276.61	3,275.7	24.8	-198.5	-24.8	1.29	-0.14	-6.73
3,388.0	11.16	271.25	3,368.0	26.0	-216.5	-26.1	1.13	0.28	-5.70
3,481.0	11.69	271.34	3,459.1	26.4	-234.9	-26.5	0.57	0.57	0.10
3,575.0	12.40	269.93	3,551.0	26.6	-254.5	-26.7	0.82	0.76	-1.50
3,667.0	12.04	269.50	3,641.0	26.5	-274.0	-26.6	0.40	-0.39	-0.47
3,759.0	11.69	269.93	3,731.0	26.4	-292.9	-26.5	0.39	-0.38	0.47
3,851.0	12.88	271.34	3,820.9	26.7	-312.5	-26.7	1.33	1.29	1.53
3,944.0	13.98	272.75	3,911.3	27.5	-334.0	-27.5	1.23	1.18	1.52
4,131.0	13.36	273.54	4,093.0	29.9	-378.2	-29.9	0.35	-0.33	0.42
4,224.0	13.14	273.80	4,183.6	31.2	-399.4	-31.3	0.25	-0.24	0.28
4,317.0	12.97	273.19	4,274.2	32.5	-420.4	-32.6	0.24	-0.18	-0.66
4,410.0	12.66	273.36	4,364.8	33.7	-441.0	-33.8	0.34	-0.33	0.18
4,501.0	12.04	273.27	4,453.7	34.8	-460.4	-34.9	0.68	-0.68	-0.10
4,594.0	11.60	272.92	4,544.8	35.9	-479.5	-35.9	0.48	-0.47	-0.38
4,687.0	11.25	272.66	4,635.9	36.8	-497.9	-36.8	0.38	-0.38	-0.28
4,781.0	10.86	272.48	4,728.2	37.6	-515.9	-37.7	0.42	-0.41	-0.19
4,875.0	12.57	276.53	4,820.2	39.1	-534.9	-39.2	2.02	1.82	4.31



Intrepid Survey Report



Company:	Ascent Energy, LLC	Local Co-ordinate Reference:	Well Toque State Com #502H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3820.0usft (Precision 553)
Site:	(Toque) Sec-6_T-21-S_R-33-E	MD Reference:	KB @ 3820.0usft (Precision 553)
Well:	Toque State Com #502H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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)
4,969.0	13.32	278.11	4,911.8	41.8	-555.8	-41.9	0.88	0.80	1.68
5,063.0	12.88	278.55	5,003.4	44.9	-576.8	-45.0	0.48	-0.47	0.47
5,157.0	12.62	278.20	5,095.1	47.9	-597.4	-48.0	0.29	-0.28	-0.37
5,249.0	12.35	277.32	5,184.9	50.6	-617.1	-50.7	0.36	-0.29	-0.96
5,342.0	12.04	277.05	5,275.8	53.1	-636.6	-53.2	0.34	-0.33	-0.29
5,374.0	11.87	277.76	5,307.1	53.9	-643.1	-54.0	0.70	-0.53	2.22
5,522.0	11.87	275.41	5,451.9	57.4	-673.4	-57.5	0.33	0.00	-1.59
5,614.0	11.87	276.03	5,542.0	59.3	-692.2	-59.4	0.14	0.00	0.67
5,658.0	11.83	275.87	5,585.0	60.2	-701.2	-60.3	0.12	-0.10	-0.37
TOP DELAWARE SAND									
5,707.0	11.78	275.68	5,633.0	61.2	-711.1	-61.4	0.12	-0.10	-0.38
5,799.0	11.60	275.50	5,723.1	63.0	-729.7	-63.2	0.20	-0.20	-0.20
5,892.0	11.08	274.88	5,814.3	64.7	-747.9	-64.8	0.57	-0.56	-0.67
5,983.4	11.08	272.96	5,904.0	65.9	-765.4	-66.0	0.40	0.00	-2.10
CHERRY CANYON									
5,984.0	11.08	272.95	5,904.6	65.9	-765.5	-66.0	0.40	0.01	-2.10
6,077.0	10.99	273.48	5,995.8	66.9	-783.3	-67.0	0.15	-0.10	0.57
6,169.0	11.52	273.13	6,086.1	67.9	-801.2	-68.1	0.58	0.58	-0.38
6,262.0	11.56	273.48	6,177.2	69.0	-819.8	-69.2	0.09	0.04	0.38
6,354.0	11.78	274.01	6,267.3	70.2	-838.4	-70.4	0.27	0.24	0.58
6,446.0	11.65	273.92	6,357.4	71.5	-857.0	-71.7	0.14	-0.14	-0.10
6,538.0	10.86	274.71	6,447.6	72.9	-874.9	-73.0	0.87	-0.86	0.86
6,631.0	10.55	274.01	6,539.0	74.2	-892.2	-74.3	0.36	-0.33	-0.75
6,725.0	10.33	273.92	6,631.4	75.4	-909.1	-75.5	0.23	-0.23	-0.10
6,818.0	10.20	275.15	6,722.9	76.7	-925.7	-76.8	0.27	-0.14	1.32
6,912.0	9.71	274.44	6,815.5	78.0	-941.9	-78.2	0.54	-0.52	-0.76
7,005.0	9.45	272.42	6,907.2	79.0	-957.3	-79.1	0.46	-0.28	-2.17
7,099.0	9.41	271.90	7,000.0	79.5	-972.7	-79.7	0.10	-0.04	-0.55
7,156.8	8.56	274.00	7,057.0	80.0	-981.7	-80.2	1.59	-1.48	3.64
BRUSHY CANYON									
7,192.0	8.04	275.50	7,091.9	80.4	-986.8	-80.6	1.59	-1.46	4.25
7,286.0	6.07	275.76	7,185.2	81.5	-998.3	-81.7	2.10	-2.10	0.28
7,379.0	4.57	279.10	7,277.8	82.6	-1,006.8	-82.8	1.65	-1.61	3.59
7,470.0	2.51	269.00	7,368.6	83.2	-1,012.4	-83.3	2.36	-2.26	-11.10
7,563.0	1.14	271.90	7,461.5	83.2	-1,015.3	-83.3	1.48	-1.47	3.12
7,655.0	0.48	298.61	7,553.5	83.4	-1,016.6	-83.5	0.81	-0.72	29.03
7,747.0	0.09	181.90	7,645.5	83.5	-1,016.9	-83.7	0.57	-0.42	-126.86
7,840.0	0.31	158.78	7,738.5	83.2	-1,016.9	-83.4	0.25	0.24	-24.86
7,932.0	0.48	161.68	7,830.5	82.6	-1,016.6	-82.8	0.19	0.18	3.15
8,025.0	0.40	187.96	7,923.5	81.9	-1,016.6	-82.1	0.23	-0.09	28.26
8,119.0	0.53	168.45	8,017.5	81.1	-1,016.5	-81.3	0.22	0.14	-20.76
8,211.0	0.70	132.68	8,109.5	80.3	-1,016.0	-80.5	0.45	0.18	-38.88
8,303.0	0.75	139.97	8,201.5	79.5	-1,015.2	-79.7	0.11	0.05	7.92
8,395.0	0.31	45.31	8,293.5	79.2	-1,014.7	-79.4	0.91	-0.48	-102.89



Intrepid Survey Report



Company:	Ascent Energy, LLC	Local Co-ordinate Reference:	Well Toque State Com #502H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3820.0usft (Precision 553)
Site:	(Toque) Sec-6_T-21-S_R-33-E	MD Reference:	KB @ 3820.0usft (Precision 553)
Well:	Toque State Com #502H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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)
8,489.0	0.62	23.61	8,387.5	79.9	-1,014.3	-80.0	0.37	0.33	-23.09
8,501.5	0.59	19.41	8,400.0	80.0	-1,014.2	-80.2	0.41	-0.20	-33.62
JABALINA_SAND									
8,582.0	0.53	345.90	8,480.5	80.7	-1,014.2	-80.9	0.41	-0.08	-41.62
8,586.5	0.53	348.56	8,485.0	80.8	-1,014.2	-81.0	0.55	0.02	59.03
JABALINA_SAND_BASE									
8,675.0	0.53	344.85	8,573.5	81.6	-1,014.4	-81.7	0.04	0.00	-4.20
8,768.0	0.40	7.78	8,666.5	82.3	-1,014.5	-82.5	0.24	-0.14	24.66
8,859.5	0.62	33.80	8,758.0	83.0	-1,014.1	-83.2	0.34	0.24	28.43
BC1									
8,861.0	0.62	34.06	8,759.5	83.0	-1,014.1	-83.2	0.34	0.28	17.72
8,925.5	0.62	27.43	8,824.0	83.6	-1,013.8	-83.8	0.11	0.00	-10.28
BSPG_LIME									
8,955.0	0.62	24.40	8,853.5	83.9	-1,013.6	-84.1	0.11	0.01	-10.26
9,048.0	0.40	44.26	8,946.5	84.6	-1,013.2	-84.8	0.30	-0.24	21.35
9,079.5	0.28	38.84	8,978.0	84.8	-1,013.1	-84.9	0.39	-0.38	-17.19
AVLN									
9,142.0	0.09	342.56	9,040.5	84.9	-1,013.0	-85.1	0.39	-0.31	-90.09
9,234.0	0.09	335.70	9,132.5	85.1	-1,013.1	-85.2	0.01	0.00	-7.46
9,281.5	0.06	282.61	9,180.0	85.1	-1,013.1	-85.3	0.15	-0.07	-111.69
Leonard B									
9,326.0	0.09	234.19	9,224.5	85.1	-1,013.1	-85.3	0.15	0.07	-108.89
9,420.0	0.35	156.32	9,318.5	84.8	-1,013.1	-84.9	0.36	0.28	-82.84
9,512.0	0.13	137.34	9,410.5	84.4	-1,012.9	-84.6	0.25	-0.24	-20.63
9,605.0	0.88	159.04	9,503.5	83.7	-1,012.6	-83.9	0.82	0.81	23.33
9,699.0	0.44	145.33	9,597.5	82.7	-1,012.1	-82.9	0.49	-0.47	-14.59
9,791.0	1.32	155.35	9,689.4	81.5	-1,011.5	-81.6	0.97	0.96	10.89
9,885.0	1.54	144.81	9,783.4	79.5	-1,010.3	-79.6	0.36	0.23	-11.21
9,945.6	1.88	137.06	9,844.0	78.1	-1,009.1	-78.2	0.68	0.57	-12.79
1ST_BSPG_SND									
9,977.0	2.07	134.08	9,875.4	77.3	-1,008.4	-77.5	0.68	0.60	-9.49
10,070.0	1.93	131.53	9,968.3	75.1	-1,006.0	-75.3	0.18	-0.15	-2.74
10,157.0	0.79	70.19	10,055.3	74.3	-1,004.3	-74.5	1.95	-1.31	-70.51
10,225.7	0.88	64.46	10,124.0	74.7	-1,003.4	-74.9	0.18	0.14	-8.34
2ND_BSPG									
10,250.0	0.92	62.72	10,148.3	74.9	-1,003.1	-75.0	0.18	0.15	-7.15
10,344.0	4.48	181.11	10,242.2	71.5	-1,002.5	-71.7	5.30	3.79	125.95
10,376.0	8.26	183.21	10,274.0	68.0	-1,002.6	-68.2	11.83	11.81	6.56
10,406.0	11.30	188.84	10,303.5	62.9	-1,003.2	-63.1	10.61	10.13	18.77
10,437.0	14.02	187.70	10,333.8	56.2	-1,004.2	-56.4	8.81	8.77	-3.68
10,468.0	16.57	183.13	10,363.7	48.1	-1,004.9	-48.3	9.09	8.23	-14.74
10,470.4	16.77	182.77	10,366.0	47.4	-1,005.0	-47.6	9.26	8.22	-14.86
2ND_BSPG_SND									
10,499.0	19.16	179.08	10,393.2	38.6	-1,005.1	-38.8	9.26	8.37	-12.91
10,530.0	20.53	174.69	10,422.4	28.1	-1,004.5	-28.3	6.53	4.42	-14.16



Intrepid Survey Report



Company: Ascent Energy, LLC
Project: Lea County, NM (NAD 83 NME)
Site: (Toque) Sec-6_T-21-S_R-33-E
Well: Toque State Com #502H
Wellbore: ST01
Design: AWB

Local Co-ordinate Reference: Well Toque State Com #502H
TVD Reference: KB @ 3820.0usft (Precision 553)
MD Reference: KB @ 3820.0usft (Precision 553)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.15 Single User Db

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)
10,577.0	22.81	172.93	10,466.0	10.8	-1,002.6	-11.0	5.04	4.85	-3.74
10,623.0	26.64	174.16	10,507.8	-8.3	-1,000.5	8.1	8.40	8.33	2.67
10,653.0	30.37	174.51	10,534.2	-22.5	-999.0	22.4	12.45	12.43	1.17
10,670.3	31.49	175.03	10,549.0	-31.4	-998.2	31.2	6.64	6.46	3.00
2ND_BSPG_S_LM_MRKR_A									
10,683.0	32.31	175.39	10,559.8	-38.1	-997.7	37.9	6.64	6.47	2.84
10,714.0	32.66	176.45	10,585.9	-54.7	-996.5	54.5	2.16	1.13	3.42
10,751.4	35.24	178.94	10,617.0	-75.6	-995.7	75.4	7.83	6.90	6.64
2ND_BS_S_MRKR_B									
10,761.0	35.91	179.52	10,624.8	-81.1	-995.6	81.0	7.83	6.98	6.11
10,806.0	40.66	183.13	10,660.1	-109.0	-996.3	108.8	11.66	10.56	8.02
10,817.8	41.71	182.89	10,669.0	-116.8	-996.7	116.6	8.98	8.89	-1.99
2ND_BS_S_MRKR_C									
10,853.0	44.84	182.25	10,694.6	-140.8	-997.8	140.7	8.98	8.90	-1.83
10,899.0	46.99	179.26	10,726.6	-173.9	-998.2	173.7	6.61	4.67	-6.50
10,905.5	47.47	178.89	10,731.0	-178.6	-998.1	178.5	8.46	7.37	-5.66
2ND_BSPG_S_MID_SAND									
10,931.0	49.36	177.50	10,747.9	-197.7	-997.5	197.5	8.46	7.41	-5.46
10,956.5	52.58	178.23	10,764.0	-217.5	-996.8	217.3	12.81	12.62	2.86
2ND_BSPG_S_MID_SAND_BASE									
10,993.0	57.19	179.17	10,785.0	-247.3	-996.1	247.2	12.81	12.64	2.58
11,002.5	59.03	179.84	10,790.0	-255.4	-996.0	255.2	20.28	19.38	7.03
2ND_BS_TARGET_TOP									
11,023.2	63.05	181.21	10,800.0	-273.5	-996.2	273.3	20.28	19.44	6.62
2ND_BS_TARGET_Landing									
11,040.0	66.33	182.25	10,807.2	-288.7	-996.7	288.5	20.28	19.49	6.20
11,086.0	75.12	183.21	10,822.4	-332.0	-998.7	331.8	19.21	19.11	2.09
11,123.0	81.85	183.57	10,829.8	-368.2	-1,000.9	368.0	18.21	18.19	0.97
11,212.0	93.63	184.18	10,833.3	-456.8	-1,006.9	456.6	13.25	13.24	0.69
11,305.0	92.13	181.98	10,828.6	-549.5	-1,011.9	549.3	2.86	-1.61	-2.37
11,397.0	90.81	179.87	10,826.2	-641.5	-1,013.4	641.3	2.70	-1.43	-2.29
11,489.0	89.89	179.96	10,825.7	-733.4	-1,013.2	733.3	1.00	-1.00	0.10
11,583.0	90.29	179.96	10,825.5	-827.4	-1,013.2	827.3	0.43	0.43	0.00
11,673.0	89.19	179.96	10,825.9	-917.4	-1,013.1	917.3	1.22	-1.22	0.00
11,765.0	88.57	179.17	10,827.7	-1,009.4	-1,012.4	1,009.2	1.09	-0.67	-0.86
11,858.0	89.71	178.64	10,829.1	-1,102.4	-1,010.6	1,102.2	1.35	1.23	-0.57
11,951.0	90.29	177.77	10,829.1	-1,195.3	-1,007.7	1,195.2	1.12	0.62	-0.94
12,043.0	89.85	179.26	10,829.0	-1,287.3	-1,005.3	1,287.1	1.69	-0.48	1.62
12,136.0	90.59	179.00	10,828.6	-1,380.3	-1,003.9	1,380.1	0.84	0.80	-0.28
12,229.0	89.36	179.87	10,828.7	-1,473.3	-1,003.0	1,473.1	1.62	-1.32	0.94
12,324.0	89.76	180.23	10,829.4	-1,568.3	-1,003.1	1,568.1	0.57	0.42	0.38
12,418.0	90.90	180.58	10,828.9	-1,662.3	-1,003.7	1,662.1	1.27	1.21	0.37
12,511.0	89.23	181.37	10,828.8	-1,755.3	-1,005.3	1,755.1	1.99	-1.80	0.85
12,603.0	88.13	181.02	10,830.9	-1,847.2	-1,007.2	1,847.0	1.25	-1.20	-0.38



Intrepid Survey Report



Company: Ascent Energy, LLC
Project: Lea County, NM (NAD 83 NME)
Site: (Toque) Sec-6_T-21-S_R-33-E
Well: Toque State Com #502H
Wellbore: ST01
Design: AWB

Local Co-ordinate Reference: Well Toque State Com #502H
TVD Reference: KB @ 3820.0usft (Precision 553)
MD Reference: KB @ 3820.0usft (Precision 553)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.15 Single User Db

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)
12,696.0	89.05	181.02	10,833.2	-1,940.2	-1,008.9	1,940.0	0.99	0.99	0.00
12,789.0	89.67	181.28	10,834.2	-2,033.2	-1,010.8	2,033.0	0.72	0.67	0.28
12,882.0	90.64	182.34	10,834.0	-2,126.1	-1,013.7	2,125.9	1.54	1.04	1.14
12,974.0	91.60	183.30	10,832.2	-2,218.0	-1,018.2	2,217.8	1.48	1.04	1.04
13,066.0	90.20	182.86	10,830.7	-2,309.8	-1,023.2	2,309.6	1.60	-1.52	-0.48
13,158.0	88.40	181.37	10,831.8	-2,401.7	-1,026.6	2,401.6	2.54	-1.96	-1.62
13,251.0	87.16	179.26	10,835.4	-2,494.7	-1,027.1	2,494.5	2.63	-1.33	-2.27
13,345.0	87.74	178.64	10,839.6	-2,588.6	-1,025.4	2,588.4	0.90	0.62	-0.66
13,437.0	87.43	178.38	10,843.5	-2,680.4	-1,023.0	2,680.3	0.44	-0.34	-0.28
13,529.0	85.23	177.06	10,849.4	-2,772.2	-1,019.3	2,772.0	2.79	-2.39	-1.43
13,622.0	85.32	175.83	10,857.1	-2,864.7	-1,013.6	2,864.5	1.32	0.10	-1.32
13,715.0	86.81	175.83	10,863.4	-2,957.2	-1,006.8	2,957.0	1.60	1.60	0.00
13,808.0	88.40	176.80	10,867.3	-3,049.9	-1,000.8	3,049.8	2.00	1.71	1.04
13,900.0	89.41	179.26	10,869.1	-3,141.9	-997.7	3,141.7	2.89	1.10	2.67
13,993.0	90.42	179.70	10,869.2	-3,234.9	-996.8	3,234.7	1.18	1.09	0.47
14,085.0	91.25	179.17	10,867.9	-3,326.8	-995.9	3,326.7	1.07	0.90	-0.58
14,179.0	90.29	180.14	10,866.6	-3,420.8	-995.4	3,420.7	1.45	-1.02	1.03
14,272.0	89.98	181.81	10,866.4	-3,513.8	-997.0	3,513.6	1.83	-0.33	1.80
14,365.0	90.73	182.07	10,865.8	-3,606.8	-1,000.1	3,606.6	0.85	0.81	0.28
14,458.0	89.80	181.63	10,865.4	-3,699.7	-1,003.1	3,699.5	1.11	-1.00	-0.47
14,552.0	88.22	180.67	10,867.0	-3,793.7	-1,005.0	3,793.5	1.97	-1.68	-1.02
14,645.0	89.23	180.40	10,869.1	-3,886.6	-1,005.9	3,886.5	1.12	1.09	-0.29
14,736.0	90.07	180.23	10,869.6	-3,977.6	-1,006.4	3,977.5	0.94	0.92	-0.19
14,830.0	90.90	179.44	10,868.8	-4,071.6	-1,006.1	4,071.5	1.22	0.88	-0.84
14,922.0	90.02	179.52	10,868.1	-4,163.6	-1,005.2	4,163.4	0.96	-0.96	0.09
15,015.0	89.23	178.64	10,868.7	-4,256.6	-1,003.8	4,256.4	1.27	-0.85	-0.95
15,108.0	90.55	178.73	10,868.9	-4,349.6	-1,001.6	4,349.4	1.42	1.42	0.10
15,200.0	92.66	180.05	10,866.3	-4,441.5	-1,000.6	4,441.4	2.70	2.29	1.43
15,293.0	93.67	180.05	10,861.2	-4,534.4	-1,000.7	4,534.2	1.09	1.09	0.00
15,386.0	91.38	180.49	10,857.1	-4,627.3	-1,001.2	4,627.1	2.51	-2.46	0.47
15,479.0	89.27	180.84	10,856.6	-4,720.3	-1,002.2	4,720.1	2.30	-2.27	0.38
15,573.0	87.52	181.46	10,859.2	-4,814.2	-1,004.1	4,814.0	1.97	-1.86	0.66
15,667.0	87.82	181.28	10,863.0	-4,908.1	-1,006.4	4,907.9	0.37	0.32	-0.19
15,761.0	87.74	180.67	10,866.7	-5,002.0	-1,008.0	5,001.9	0.65	-0.09	-0.65
15,854.0	88.70	179.70	10,869.5	-5,095.0	-1,008.3	5,094.8	1.47	1.03	-1.04
15,946.0	89.76	180.23	10,870.8	-5,187.0	-1,008.2	5,186.8	1.29	1.15	0.58
16,038.0	90.51	179.96	10,870.6	-5,279.0	-1,008.4	5,278.8	0.87	0.82	-0.29
16,131.0	89.54	180.67	10,870.5	-5,372.0	-1,008.9	5,371.8	1.29	-1.04	0.76
16,224.0	90.11	180.31	10,870.8	-5,465.0	-1,009.7	5,464.8	0.72	0.61	-0.39
16,318.0	88.88	180.40	10,871.6	-5,559.0	-1,010.3	5,558.8	1.31	-1.31	0.10
16,412.0	89.23	180.31	10,873.2	-5,652.9	-1,010.8	5,652.8	0.38	0.37	-0.10
16,506.0	89.27	179.61	10,874.4	-5,746.9	-1,010.8	5,746.8	0.75	0.04	-0.74
16,600.0	89.63	179.00	10,875.3	-5,840.9	-1,009.6	5,840.7	0.75	0.38	-0.65
16,694.0	90.11	178.56	10,875.5	-5,934.9	-1,007.6	5,934.7	0.69	0.51	-0.47



Intrepid Survey Report



Company:	Ascent Energy, LLC	Local Co-ordinate Reference:	Well Toque State Com #502H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3820.0usft (Precision 553)
Site:	(Toque) Sec-6_T-21-S_R-33-E	MD Reference:	KB @ 3820.0usft (Precision 553)
Well:	Toque State Com #502H	North Reference:	True
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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)
16,786.0	88.84	178.82	10,876.4	-6,026.9	-1,005.5	6,026.7	1.41	-1.38	0.28
16,880.0	88.18	180.31	10,878.8	-6,120.8	-1,004.8	6,120.7	1.73	-0.70	1.59
16,974.0	87.34	180.40	10,882.5	-6,214.8	-1,005.4	6,214.6	0.90	-0.89	0.10
17,068.0	88.18	179.87	10,886.2	-6,308.7	-1,005.6	6,308.5	1.06	0.89	-0.56
17,161.0	92.79	180.58	10,885.4	-6,401.7	-1,006.0	6,401.5	5.02	4.96	0.76
17,253.0	92.44	180.67	10,881.2	-6,493.5	-1,007.0	6,493.4	0.39	-0.38	0.10
17,345.0	90.68	181.46	10,878.7	-6,585.5	-1,008.7	6,585.3	2.10	-1.91	0.86
17,440.0	88.92	181.28	10,879.0	-6,680.5	-1,011.0	6,680.3	1.86	-1.85	-0.19
17,534.0	87.47	180.58	10,882.0	-6,774.4	-1,012.5	6,774.2	1.71	-1.54	-0.74
17,628.0	88.40	180.14	10,885.4	-6,868.3	-1,013.1	6,868.2	1.09	0.99	-0.47
17,723.0	89.32	179.44	10,887.2	-6,963.3	-1,012.7	6,963.1	1.22	0.97	-0.74
17,817.0	90.07	178.56	10,887.7	-7,057.3	-1,011.1	7,057.1	1.23	0.80	-0.94
17,910.0	89.85	177.59	10,887.8	-7,150.2	-1,008.0	7,150.1	1.07	-0.24	-1.04
17,974.0	89.71	177.06	10,888.1	-7,214.2	-1,005.0	7,214.0	0.86	-0.22	-0.83
18,002.0	89.80	177.06	10,888.2	-7,242.1	-1,003.5	7,242.0	0.32	0.32	0.00
18,094.0	89.05	179.17	10,889.1	-7,334.1	-1,000.5	7,333.9	2.43	-0.82	2.29
18,187.0	89.49	179.52	10,890.3	-7,427.1	-999.5	7,426.9	0.60	0.47	0.38
18,279.0	89.49	178.82	10,891.1	-7,519.0	-998.1	7,518.9	0.76	0.00	-0.76
18,371.0	90.02	178.38	10,891.5	-7,611.0	-995.9	7,610.8	0.75	0.58	-0.48
18,447.0	90.64	178.20	10,891.1	-7,687.0	-993.6	7,686.8	0.85	0.82	-0.24
LAST SVY									
18,455.0	90.64	178.20	10,891.0	-7,695.0	-993.4	7,694.8	0.00	0.00	0.00
100' Toe Setback, 100'FSL & 676.1'FWL									
18,505.0	90.64	178.20	10,890.4	-7,745.0	-991.8	7,744.8	0.00	0.00	0.00
Projection to TD, 50'FSL & 677.7'FWL									

Design Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL (Toque State C - actual wellpath misses target center by 93.1usft at 18505.0usft MD (10890.4 TVD, -7745.0 N, -991.8 E) - Rectangle (sides W30.0 H7,773.0 D0.0)	0.00	179.99	10,799.0	-7,745.0	-1,009.5	541,388.21	761,998.34	32° 29' 10.693 N	103° 37' 3.726 W
LTP (Toque State Cor - actual wellpath misses target center by 93.4usft at 18455.0usft MD (10891.0 TVD, -7695.0 N, -993.4 E) - Point	0.00	0.00	10,799.0	-7,695.0	-1,009.5	541,438.20	761,998.00	32° 29' 11.187 N	103° 37' 3.726 W
FTP (Toque State Cor - actual wellpath misses target center by 194.8usft at 10817.8usft MD (10669.0 TVD, -116.8 N, -996.7 E) - Point	0.00	0.00	10,799.0	27.6	-1,010.2	549,160.60	761,945.20	32° 30' 27.603 N	103° 37' 3.738 W



Intrepid
Survey Report



Company: Ascent Energy, LLC	Local Co-ordinate Reference: Well Toque State Com #502H
Project: Lea County, NM (NAD 83 NME)	TVD Reference: KB @ 3820.0usft (Precision 553)
Site: (Toque) Sec-6_T-21-S_R-33-E	MD Reference: KB @ 3820.0usft (Precision 553)
Well: Toque State Com #502H	North Reference: True
Wellbore: ST01	Survey Calculation Method: Minimum Curvature
Design: AWB	Database: EDM 5000.15 Single User Db

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,658.0	5,585.0	TOP_DELAWARE_SAND			
5,983.4	5,904.0	CHERRY_CANYON			
7,156.8	7,057.0	BRUSHY_CANYON			
8,501.5	8,400.0	JABALINA_SAND			
8,586.5	8,485.0	JABALINA_SAND_BASE			
8,859.5	8,758.0	BC1			
8,925.5	8,824.0	BSPG_LIME			
9,079.5	8,978.0	AVLN			
9,281.5	9,180.0	Leonard B		0.00	
9,945.6	9,844.0	1ST_BSPG_SND			
10,225.7	10,124.0	2ND_BSPG			
10,470.4	10,366.0	2ND_BSPG_SND			
10,670.3	10,549.0	2ND_BSPG_S_LM_MRKR_A			
10,751.4	10,617.0	2ND_BS_S_MRKR_B			
10,817.8	10,669.0	2ND_BS_S_MRKR_C			
10,905.5	10,731.0	2ND_BSPG_S_MID_SAND			
10,956.5	10,764.0	2ND_BSPG_S_MID_SAND_BASE			
11,002.5	10,790.0	2ND_BS_TARGET_TOP			
11,023.2	10,800.0	2ND_BS_TARGET_Landing			

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
18,447.0	10,891.1	-7,687.0	-993.6	LAST SVY
18,455.0	10,891.0	-7,695.0	-993.4	100' Toe Setback, 100'FSL & 676.1'FWL
18,505.0	10,890.4	-7,745.0	-991.8	Projection to TD, 50'FSL & 677.7'FWL

Checked By: _____	Approved By: _____	Date: _____
--------------------------	---------------------------	--------------------



HOBBS OCD
FEB 12 2020
RECEIVED

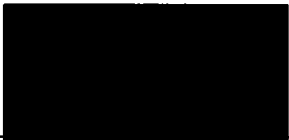
Operator: Ascent Energy, LLC
Well Name: Toque State Com #502H
County: Lea
State: New Mexico
Rig Name: Precision 553
API: 30-025-44785

Intrepid Directional Drilling Specialists certifies that the surveys performed on the above referenced well are true and correct MWD surveys, data provided as follows:

Surveyor: Intrepid Directional Drilling Specialists
Survey Depths: 5522' MD – 18447' MD
Projection to Bit: 18505' MD
Dates Performed: 11/28/2019 – 12/20/2019
Type of Survey: MWD

Sincerely,

James Burleson
Vice President of MWD Operations
Intrepid Directional Drilling Specialists
INTREPID



Ascent Energy, LLC
Project: Lea County, NM (NAD 83 NME)
Site: (Togus) Sec-6 T-21-S R-33-E
Well: Togus State Com #502H
Wellbore: ST01
Design: AWB
Lat: 32° 30' 27.330 N
Long: 103° 38' 51.941 W
Pad GL: 3795.0
KB: KB @ 3820.0usft (Precision 553)

INTREPID

