



Ascent Energy, LLC

**Lea County, NM (NAD 83 NME)
(Toque) Sec-6_T-21-S_R-33-E
Toque State Com #601H**

OWB

Design: AWB

Standard Survey Report

08 November, 2019

INTREPID



Intrepid Survey Report



Company:	Ascent Energy, LLC	Local Co-ordinate Reference:	Well Toque State Com #601H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3819.0usft (Precision 553)
Site:	(Toque) Sec-6_T-21-S_R-33-E	MD Reference:	KB @ 3819.0usft (Precision 553)
Well:	Toque State Com #601H	North Reference:	True
Wellbore:	OWB	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
From:	Map	Easting:	763,075.50 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 30' 27.324 N
		Longitude:	103° 36' 50.541 W
		Grid Convergence:	0.39 °

Well	Toque State Com #601H		
Well Position	+N/-S	0.0 usft	Northing: 549,140.00 usft
	+E/-W	0.0 usft	Easting: 763,075.50 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 30' 27.324 N
		Longitude:	103° 36' 50.541 W
		Ground Level:	3,794.0 usft

Wellbore	OWB
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/24/19	6.74	60.28	47,856.27375915

Design	AWB
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Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	180.00	

Survey Program	Date 11/08/19				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
151.0	5,398.0	Total MWD (OWB)	MWD	OWSG MWD - Standard	
5,536.0	19,131.0	Intrepid MWD (OWB)	MWD	OWSG MWD - Standard	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bulld 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
151.0	0.35	98.99	151.0	-0.1	0.5	0.1	0.23	0.23	0.00
241.0	0.35	132.91	241.0	-0.3	0.9	0.3	0.23	0.00	37.69
329.0	0.13	169.30	329.0	-0.6	1.1	0.6	0.29	-0.25	41.35
417.0	0.31	146.71	417.0	-0.9	1.3	0.9	0.22	0.20	-25.67
506.0	0.09	148.56	506.0	-1.1	1.5	1.1	0.25	-0.25	2.08
594.0	0.09	266.16	594.0	-1.2	1.4	1.2	0.17	0.00	133.64
690.0	0.13	259.74	690.0	-1.2	1.2	1.2	0.04	0.04	-6.69
783.0	0.40	240.05	783.0	-1.4	0.9	1.4	0.30	0.29	-21.17
875.0	0.35	212.89	875.0	-1.8	0.4	1.8	0.20	-0.05	-29.52



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Well:	Toque State Com #601H	North Reference:	True
Wellbore:	OWB	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)
968.0	0.44	212.37	968.0	-2.3	0.1	2.3	0.10	0.10	-0.56
1,062.0	0.66	217.46	1,062.0	-3.1	-0.4	3.1	0.24	0.23	5.41
1,154.0	0.88	215.88	1,154.0	-4.1	-1.2	4.1	0.24	0.24	-1.72
1,247.0	0.92	211.49	1,247.0	-5.3	-2.0	5.3	0.09	0.04	-4.72
1,340.0	1.14	210.43	1,340.0	-6.7	-2.8	6.7	0.24	0.24	-1.14
1,419.0	1.45	195.23	1,418.9	-8.4	-3.5	8.4	0.58	0.39	-19.24
1,513.0	1.01	187.49	1,512.9	-10.3	-3.9	10.3	0.50	-0.47	-8.23
1,592.1	0.67	202.76	1,592.0	-11.5	-4.2	11.5	0.51	-0.43	19.31
Rustler									
1,606.0	0.62	207.09	1,605.9	-11.6	-4.3	11.6	0.51	-0.37	31.12
1,699.0	0.62	215.18	1,698.9	-12.5	-4.8	12.5	0.09	0.00	8.70
1,791.0	0.66	79.48	1,790.9	-12.8	-4.5	12.8	1.29	0.04	-147.50
1,885.0	1.32	62.69	1,884.9	-12.2	-3.0	12.2	0.76	0.70	-17.86
1,923.1	1.34	63.17	1,923.0	-11.8	-2.3	11.8	0.05	0.04	1.25
Salado									
1,978.0	1.36	63.83	1,977.9	-11.2	-1.1	11.2	0.05	0.04	1.21
2,071.0	1.05	64.62	2,070.8	-10.3	0.7	10.3	0.33	-0.33	0.85
2,163.0	1.49	65.06	2,162.8	-9.5	2.5	9.5	0.48	0.48	0.48
2,257.0	3.16	69.98	2,256.7	-8.1	6.0	8.1	1.79	1.78	5.23
2,350.0	5.32	71.74	2,349.5	-5.8	12.5	5.8	2.33	2.32	1.89
2,444.0	7.43	74.64	2,442.9	-2.9	22.5	2.9	2.27	2.24	3.09
2,537.0	9.32	76.31	2,534.9	0.5	35.7	-0.5	2.05	2.03	1.80
2,630.0	11.30	73.94	2,626.4	4.8	51.7	-4.8	2.18	2.13	-2.55
2,723.0	12.79	72.80	2,717.3	10.4	70.3	-10.4	1.62	1.60	-1.23
2,815.0	13.14	73.41	2,807.0	16.4	90.1	-16.4	0.41	0.38	0.66
2,908.0	13.19	74.11	2,897.5	22.3	110.4	-22.3	0.18	0.05	0.75
3,001.0	13.49	74.03	2,988.0	28.2	131.0	-28.2	0.32	0.32	-0.09
3,095.0	13.01	75.26	3,079.5	33.9	151.8	-33.9	0.59	-0.51	1.31
3,189.0	13.27	75.70	3,171.1	39.3	172.5	-39.3	0.30	0.28	0.47
3,284.0	12.22	75.87	3,263.7	44.4	192.8	-44.4	1.11	-1.11	0.18
3,326.2	12.20	75.91	3,305.0	46.6	201.5	-46.6	0.05	-0.04	0.10
Base Salado Salts									
3,376.0	12.18	75.96	3,353.6	49.1	211.7	-49.1	0.05	-0.04	0.10
3,470.0	11.60	76.31	3,445.6	53.8	230.5	-53.8	0.62	-0.62	0.37
3,545.9	11.14	76.03	3,520.0	57.3	245.0	-57.3	0.62	-0.61	-0.37
Yates									
3,563.0	11.03	75.96	3,536.8	58.1	248.2	-58.1	0.62	-0.61	-0.39
3,655.0	10.55	75.96	3,627.2	62.3	264.9	-62.3	0.52	-0.52	0.00
3,747.0	9.98	76.22	3,717.7	66.3	280.8	-66.3	0.62	-0.62	0.28
3,840.0	9.41	76.22	3,809.4	70.0	296.0	-70.0	0.61	-0.61	0.00
3,865.9	9.26	76.55	3,835.0	71.0	300.1	-71.0	0.61	-0.57	1.27
Captian Reef									
3,933.0	8.88	77.45	3,901.2	73.4	310.4	-73.4	0.61	-0.57	1.34
4,213.0	9.93	70.42	4,177.5	86.2	354.3	-86.2	0.56	0.38	-2.51



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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)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
4,306.0	6.15	70.77	4,269.5	90.5	366.5	-90.5	4.06	-4.06	0.38
4,397.0	7.69	70.77	4,359.9	94.1	376.9	-94.1	1.69	1.69	0.00
4,490.0	5.76	69.81	4,452.2	97.8	387.1	-97.8	2.08	-2.08	-1.03
4,583.0	3.30	64.62	4,544.9	100.5	393.9	-100.5	2.68	-2.65	-5.58
4,677.0	0.97	69.72	4,638.8	101.9	397.1	-101.9	2.48	-2.48	5.43
4,771.0	1.10	240.05	4,732.8	101.8	397.1	-101.8	2.19	0.14	181.20
4,864.0	1.41	241.63	4,825.8	100.8	395.3	-100.8	0.34	0.33	1.70
4,959.0	1.23	242.60	4,920.8	99.8	393.4	-99.8	0.19	-0.19	1.02
5,053.0	1.19	247.17	5,014.8	98.9	391.6	-98.9	0.11	-0.04	4.86
5,145.0	0.97	252.18	5,106.8	98.3	390.0	-98.3	0.26	-0.24	5.45
5,238.0	1.10	241.37	5,199.7	97.6	388.4	-97.6	0.25	0.14	-11.62
5,330.0	1.19	252.71	5,291.7	96.9	386.7	-96.9	0.26	0.10	12.33
5,398.0	1.14	239.88	5,359.7	96.4	385.5	-96.4	0.39	-0.07	-18.87
TIE ON									
5,536.0	1.05	225.85	5,497.7	94.8	383.4	-94.8	0.20	-0.07	-10.17
5,629.0	1.05	224.01	5,590.7	93.6	382.2	-93.6	0.04	0.00	-1.98
5,634.3	1.04	224.90	5,596.0	93.5	382.1	-93.5	0.33	-0.13	16.72
Delaware Sands									
5,721.0	0.97	240.79	5,682.7	92.6	380.9	-92.6	0.33	-0.08	18.33
5,814.0	0.79	208.98	5,775.6	91.7	379.9	-91.7	0.55	-0.19	-34.20
5,906.0	1.05	236.22	5,867.6	90.7	378.9	-90.7	0.55	0.28	29.61
5,969.4	1.04	222.02	5,931.0	89.9	378.0	-89.9	0.41	-0.02	-22.40
Cherry Canyon									
5,998.0	1.05	215.66	5,959.6	89.5	377.7	-89.5	0.41	0.05	-22.22
6,091.0	0.75	215.39	6,052.6	88.3	376.9	-88.3	0.32	-0.32	-0.29
6,183.0	0.97	214.95	6,144.6	87.2	376.1	-87.2	0.24	0.24	-0.48
6,276.0	1.14	234.11	6,237.6	86.0	374.9	-86.0	0.42	0.18	20.60
6,368.0	0.66	215.83	6,329.6	85.0	373.8	-85.0	0.60	-0.52	-19.87
6,461.0	0.57	240.70	6,422.6	84.4	373.1	-84.4	0.30	-0.10	26.74
6,553.0	0.57	206.08	6,514.6	83.7	372.5	-83.7	0.37	0.00	-37.63
6,646.0	0.40	230.42	6,607.6	83.1	372.1	-83.1	0.28	-0.18	26.17
6,739.0	0.75	242.02	6,700.5	82.6	371.3	-82.6	0.39	0.38	12.47
6,832.0	0.70	219.26	6,793.5	81.9	370.4	-81.9	0.31	-0.05	-24.47
6,924.0	0.40	215.57	6,885.5	81.2	369.8	-81.2	0.33	-0.33	-4.01
7,017.0	0.35	190.52	6,978.5	80.7	369.6	-80.7	0.18	-0.05	-26.94
7,088.5	0.59	177.62	7,050.0	80.1	369.6	-80.1	0.36	0.33	-18.05
Brushy Canyon									
7,109.0	0.66	175.67	7,070.5	79.8	369.6	-79.8	0.36	0.35	-9.49
7,202.0	0.13	189.82	7,163.5	79.2	369.6	-79.2	0.58	-0.57	15.22
7,294.0	0.53	175.23	7,255.5	78.7	369.6	-78.7	0.44	0.43	-15.86
7,387.0	0.31	175.93	7,348.5	78.0	369.7	-78.0	0.24	-0.24	0.75
7,479.0	0.97	81.27	7,440.5	77.9	370.5	-77.9	1.13	0.72	-102.89
7,572.0	0.79	78.81	7,533.5	78.1	371.9	-78.1	0.20	-0.19	-2.65
7,664.0	0.35	69.85	7,625.5	78.3	372.7	-78.3	0.49	-0.48	-9.74



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Wellbore: OWB
Design: AWB

Local Co-ordinate Reference: Well Toque State Com #601H
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North Reference: True
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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)
7,757.0	0.66	54.64	7,718.5	78.7	373.5	-78.7	0.36	0.33	-16.35
7,849.0	1.14	88.65	7,810.5	79.1	374.8	-79.1	0.76	0.52	36.97
7,942.0	1.01	79.07	7,903.5	79.2	376.5	-79.2	0.24	-0.14	-10.30
8,034.0	1.14	80.30	7,995.5	79.6	378.2	-79.6	0.14	0.14	1.34
8,127.0	1.32	79.51	8,088.4	79.9	380.2	-79.9	0.19	0.19	-0.85
8,219.0	0.79	94.28	8,180.4	80.1	381.9	-80.1	0.64	-0.58	16.05
8,312.0	0.62	101.75	8,273.4	79.9	383.0	-79.9	0.21	-0.18	8.03
8,404.0	0.62	101.93	8,365.4	79.7	384.0	-79.7	0.00	0.00	0.20
8,497.0	0.62	99.99	8,458.4	79.5	385.0	-79.5	0.02	0.00	-2.09
8,589.0	0.75	131.46	8,550.4	79.0	385.9	-79.0	0.43	0.14	34.21
8,681.0	0.48	146.75	8,642.4	78.3	386.6	-78.3	0.34	-0.29	16.62
8,773.0	0.62	138.93	8,734.4	77.6	387.1	-77.6	0.17	0.15	-8.50
8,829.6	0.67	135.40	8,791.0	77.1	387.5	-77.1	0.11	0.08	-6.24
Bone Spring Lime									
8,866.0	0.70	133.39	8,827.4	76.8	387.8	-76.8	0.11	0.09	-5.52
8,958.0	0.44	310.75	8,919.4	76.7	388.0	-76.7	1.24	-0.28	192.78
8,993.6	0.60	320.84	8,955.0	76.9	387.8	-76.9	0.52	0.45	28.32
Avalon									
9,051.0	0.88	328.95	9,012.4	77.5	387.3	-77.5	0.52	0.49	14.14
9,145.0	0.97	342.31	9,106.4	78.9	386.7	-78.9	0.25	0.10	14.21
9,205.7	1.13	348.93	9,167.0	80.0	386.5	-80.0	0.34	0.27	10.92
Leonard B									
9,239.0	1.23	351.80	9,200.3	80.7	386.3	-80.7	0.34	0.29	8.60
9,332.0	1.27	330.35	9,293.3	82.5	385.7	-82.5	0.50	0.04	-23.06
9,426.0	1.80	336.77	9,387.3	84.8	384.6	-84.8	0.59	0.56	6.83
9,516.0	1.01	39.96	9,477.3	86.7	384.5	-86.7	1.80	-0.88	70.21
9,612.0	1.45	62.46	9,573.2	87.9	386.2	-87.9	0.67	0.46	23.44
9,702.0	2.64	52.44	9,663.2	89.7	388.8	-89.7	1.38	1.32	-11.13
9,795.0	2.51	65.28	9,756.1	91.9	392.4	-91.9	0.63	-0.14	13.81
9,846.0	2.02	64.61	9,807.0	92.7	394.2	-92.7	0.96	-0.96	-1.31
1st Bone Spring Sand									
9,887.0	1.63	63.78	9,848.0	93.3	395.4	-93.3	0.96	-0.96	-2.02
9,979.0	0.66	41.02	9,940.0	94.3	396.9	-94.3	1.14	-1.05	-24.74
10,071.0	0.26	348.99	10,032.0	94.9	397.2	-94.9	0.59	-0.43	-56.55
10,146.0	0.41	294.83	10,107.0	95.2	396.9	-95.2	0.45	0.21	-72.22
2nd Bone Spring Carb									
10,164.0	0.48	288.78	10,125.0	95.2	396.8	-95.2	0.45	0.36	-33.61
10,256.0	0.18	328.77	10,217.0	95.5	396.4	-95.5	0.39	-0.33	43.47
10,349.0	0.62	191.66	10,310.0	95.1	396.2	-95.1	0.82	0.47	-147.43
10,402.0	0.71	161.17	10,363.0	94.5	396.2	-94.5	0.68	0.17	-57.52
2nd Bone Spring Sand									
10,442.0	0.88	145.52	10,403.0	94.0	396.5	-94.0	0.68	0.42	-39.13
10,535.0	0.70	200.10	10,496.0	92.9	396.7	-92.9	0.80	-0.19	58.69
10,627.0	0.97	213.72	10,588.0	91.7	396.1	-91.7	0.36	0.29	14.80



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10,720.0	1.27	201.77	10,681.0	90.1	395.2	-90.1	0.41	0.32	-12.85
10,813.0	1.71	178.30	10,773.9	87.7	394.9	-87.7	0.80	0.47	-25.24
10,911.0	1.27	149.47	10,871.9	85.4	395.5	-85.4	0.87	-0.45	-29.42
10,937.1	2.14	170.89	10,898.0	84.6	395.7	-84.6	4.09	3.35	82.01
3rd Bone Spring Carb									
10,997.0	4.48	184.63	10,957.8	81.2	395.7	-81.2	4.09	3.90	22.95
11,027.0	8.70	184.54	10,987.6	77.8	395.4	-77.8	14.07	14.07	-0.30
11,058.0	13.01	185.69	11,018.0	71.9	394.9	-71.9	13.92	13.90	3.71
11,089.0	16.66	189.90	11,048.0	64.1	393.8	-64.1	12.27	11.77	13.58
11,121.0	19.12	193.07	11,078.4	54.5	391.8	-54.5	8.27	7.69	9.91
11,151.0	21.63	193.68	11,106.5	44.3	389.4	-44.3	8.40	8.37	2.03
11,183.0	24.97	193.07	11,135.9	32.0	386.5	-32.0	10.46	10.44	-1.91
11,193.5	25.75	192.16	11,145.4	27.6	385.5	-27.6	8.26	7.39	-8.62
100' Setback Heel Crossing @ 11193.5' MD, 100' FNL & 317.6' FEL									
11,230.0	28.48	189.38	11,177.9	11.3	382.4	-11.3	8.26	7.49	-7.63
11,276.0	31.52	182.17	11,217.8	-11.6	380.2	11.6	10.24	6.61	-15.67
11,323.0	34.59	173.20	11,257.2	-37.1	381.3	37.1	12.27	6.53	-19.09
11,368.4	37.11	173.38	11,294.0	-63.6	384.4	63.6	5.55	5.54	0.39
3rd Bone Spring Sand									
11,369.0	37.14	173.38	11,294.4	-63.9	384.4	63.9	5.55	5.54	0.37
11,416.0	40.44	175.31	11,331.1	-93.2	387.3	93.2	7.48	7.02	4.11
11,461.0	45.23	179.01	11,364.1	-123.7	388.8	123.7	12.02	10.64	8.22
11,508.0	49.71	182.17	11,395.8	-158.4	388.4	158.4	10.74	9.53	6.72
11,554.0	53.27	182.08	11,424.5	-194.3	387.1	194.3	7.74	7.74	-0.20
11,601.0	58.51	183.31	11,450.8	-233.2	385.2	233.2	11.36	11.15	2.62
11,648.0	62.95	184.63	11,473.8	-274.1	382.4	274.1	9.76	9.45	2.81
11,695.0	68.09	182.61	11,493.3	-316.7	379.7	316.7	11.61	10.94	-4.30
11,741.0	73.89	180.68	11,508.2	-360.2	378.4	360.2	13.22	12.61	-4.20
11,788.0	79.34	178.65	11,519.1	-405.9	378.7	405.9	12.33	11.80	-4.32
11,834.0	84.18	178.74	11,525.7	-451.4	379.8	451.4	10.52	10.52	0.20
11,847.4	84.80	179.05	11,527.0	-464.7	380.0	464.7	5.15	4.62	2.28
3rd Bone Spring Sand Target Top									
11,927.0	88.48	180.85	11,531.7	-544.2	380.1	544.2	5.15	4.62	2.27
12,020.0	89.58	180.85	11,533.2	-637.1	378.7	637.1	1.18	1.18	0.00
12,112.0	87.74	180.24	11,535.4	-729.1	377.8	729.1	2.11	-2.00	-0.66
12,205.0	88.09	180.59	11,538.8	-822.0	377.2	822.0	0.53	0.38	0.38
12,297.0	89.10	180.32	11,541.0	-914.0	376.4	914.0	1.14	1.10	-0.29
12,390.0	90.11	180.68	11,541.7	-1,007.0	375.6	1,007.0	1.15	1.09	0.39
12,482.0	88.53	180.59	11,542.8	-1,099.0	374.6	1,099.0	1.72	-1.72	-0.10
12,574.0	88.75	180.06	11,544.9	-1,191.0	374.1	1,191.0	0.62	0.24	-0.58
12,668.0	89.54	180.32	11,546.3	-1,285.0	373.8	1,285.0	0.88	0.84	0.28
12,763.0	88.31	179.80	11,548.1	-1,379.9	373.7	1,379.9	1.41	-1.29	-0.55
12,855.0	88.70	179.80	11,550.5	-1,471.9	374.0	1,471.9	0.42	0.42	0.00
12,948.0	89.45	179.09	11,552.0	-1,564.9	374.9	1,564.9	1.11	0.81	-0.76



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 #601H
Wellbore: OWB
Design: AWB

Local Co-ordinate Reference: Well Toque State Com #601H
TVD Reference: KB @ 3819.0usft (Precision 553)
MD Reference: KB @ 3819.0usft (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)
13,041.0	87.96	178.48	11,554.1	-1,657.8	376.9	1,657.8	1.73	-1.60	-0.66
13,133.0	87.96	178.65	11,557.4	-1,749.7	379.2	1,749.7	0.18	0.00	0.18
13,225.0	89.14	178.39	11,559.7	-1,841.7	381.5	1,841.7	1.31	1.28	-0.28
13,320.0	90.07	178.04	11,560.4	-1,936.6	384.5	1,936.6	1.05	0.98	-0.37
13,413.0	90.73	177.78	11,559.7	-2,029.6	387.9	2,029.6	0.76	0.71	-0.28
13,506.0	90.02	179.01	11,559.1	-2,122.5	390.5	2,122.5	1.53	-0.76	1.32
13,599.0	88.31	179.36	11,560.5	-2,215.5	391.8	2,215.5	1.88	-1.84	0.38
13,692.0	87.96	180.68	11,563.5	-2,308.5	391.8	2,308.5	1.47	-0.38	1.42
13,783.0	88.79	181.03	11,566.1	-2,399.4	390.4	2,399.4	0.99	0.91	0.38
13,876.0	89.41	180.68	11,567.6	-2,492.4	389.0	2,492.4	0.77	0.67	-0.38
13,969.0	90.11	180.24	11,567.9	-2,585.4	388.3	2,585.4	0.89	0.75	-0.47
14,062.0	90.86	179.97	11,567.2	-2,678.4	388.1	2,678.4	0.86	0.81	-0.29
14,154.0	89.32	180.32	11,567.0	-2,770.4	387.9	2,770.4	1.72	-1.67	0.38
14,247.0	88.79	181.03	11,568.6	-2,863.4	386.8	2,863.4	0.95	-0.57	0.76
14,340.0	87.87	180.76	11,571.3	-2,956.3	385.3	2,956.3	1.03	-0.99	-0.29
14,432.0	87.74	180.94	11,574.8	-3,048.2	384.0	3,048.2	0.24	-0.14	0.20
14,525.0	88.53	180.76	11,577.8	-3,141.2	382.6	3,141.2	0.87	0.85	-0.19
14,619.0	87.38	180.06	11,581.2	-3,235.1	381.9	3,235.1	1.43	-1.22	-0.74
14,714.0	87.74	179.80	11,585.2	-3,330.0	382.0	3,330.0	0.47	0.38	-0.27
14,807.0	88.44	179.53	11,588.3	-3,423.0	382.6	3,423.0	0.81	0.75	-0.29
14,900.0	87.91	178.74	11,591.3	-3,515.9	384.0	3,515.9	1.02	-0.57	-0.85
14,992.0	88.88	179.27	11,593.8	-3,607.9	385.6	3,607.9	1.20	1.05	0.58
15,085.0	89.63	179.09	11,595.1	-3,700.8	386.9	3,700.8	0.83	0.81	-0.19
15,178.0	89.89	178.65	11,595.4	-3,793.8	388.7	3,793.8	0.55	0.28	-0.47
15,271.0	89.89	178.13	11,595.6	-3,886.8	391.4	3,886.8	0.56	0.00	-0.56
15,362.0	90.42	179.62	11,595.4	-3,977.8	393.1	3,977.8	1.74	0.58	1.64
15,391.0	90.46	179.36	11,595.2	-4,006.8	393.4	4,006.8	0.91	0.14	-0.90
15,482.0	91.60	178.92	11,593.5	-4,097.7	394.8	4,097.7	1.34	1.25	-0.48
15,575.0	90.20	179.45	11,592.1	-4,190.7	396.1	4,190.7	1.61	-1.51	0.57
15,668.0	87.78	179.27	11,593.7	-4,283.7	397.1	4,283.7	2.61	-2.60	-0.19
15,762.0	87.69	179.97	11,597.4	-4,377.6	397.8	4,377.6	0.75	-0.10	0.74
15,853.0	89.14	180.06	11,599.9	-4,468.6	397.7	4,468.6	1.60	1.59	0.10
15,946.0	88.13	180.76	11,602.1	-4,561.5	397.1	4,561.5	1.32	-1.09	0.75
16,039.0	90.07	180.68	11,603.6	-4,654.5	395.9	4,654.5	2.09	2.09	-0.09
16,132.0	89.63	180.59	11,603.9	-4,747.5	394.9	4,747.5	0.48	-0.47	-0.10
16,224.0	87.91	181.73	11,605.8	-4,839.5	393.0	4,839.5	2.24	-1.87	1.24
16,317.0	87.03	181.38	11,609.9	-4,932.3	390.5	4,932.3	1.02	-0.95	-0.38
16,410.0	89.10	181.38	11,613.1	-5,025.2	388.2	5,025.2	2.23	2.23	0.00
16,503.0	90.68	181.12	11,613.2	-5,118.2	386.2	5,118.2	1.72	1.70	-0.28
16,596.0	92.31	180.50	11,610.8	-5,211.2	384.9	5,211.2	1.88	1.75	-0.67
16,689.0	90.37	180.32	11,608.6	-5,304.1	384.2	5,304.1	2.09	-2.09	-0.19
16,782.0	90.64	179.62	11,607.8	-5,397.1	384.3	5,397.1	0.81	0.29	-0.75
16,875.0	89.67	180.06	11,607.6	-5,490.1	384.5	5,490.1	1.15	-1.04	0.47



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 #601H
Wellbore: OWB
Design: AWB

Local Co-ordinate Reference: Well Toque State Com #601H
TVD Reference: KB @ 3819.0usft (Precision 553)
MD Reference: KB @ 3819.0usft (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)
16,968.0	86.46	179.71	11,610.7	-5,583.1	384.7	5,583.1	3.47	-3.45	-0.38
17,061.0	87.34	179.18	11,615.7	-5,675.9	385.6	5,675.9	1.10	0.95	-0.57
17,153.0	86.99	178.83	11,620.3	-5,767.8	387.2	5,767.8	0.54	-0.38	-0.38
17,246.0	87.69	178.13	11,624.6	-5,860.7	389.7	5,860.7	1.06	0.75	-0.75
17,338.0	86.73	178.30	11,629.1	-5,952.5	392.6	5,952.5	1.06	-1.04	0.18
17,432.0	86.42	179.01	11,634.7	-6,046.3	394.8	6,046.3	0.82	-0.33	0.76
17,524.0	88.09	180.24	11,639.1	-6,138.2	395.4	6,138.2	2.25	1.82	1.34
17,617.0	89.63	180.15	11,641.0	-6,231.2	395.0	6,231.2	1.66	1.66	-0.10
17,711.0	89.49	180.50	11,641.7	-6,325.2	394.5	6,325.2	0.40	-0.15	0.37
17,803.0	88.92	180.94	11,643.0	-6,417.2	393.4	6,417.2	0.78	-0.62	0.48
17,897.0	87.74	180.68	11,645.7	-6,511.1	392.0	6,511.1	1.29	-1.26	-0.28
17,989.0	88.35	180.15	11,648.8	-6,603.1	391.4	6,603.1	0.88	0.66	-0.58
18,084.0	89.76	179.18	11,650.4	-6,698.0	391.9	6,698.0	1.80	1.48	-1.02
18,178.0	91.16	178.48	11,649.7	-6,792.0	393.8	6,792.0	1.67	1.49	-0.74
18,270.0	90.77	178.74	11,648.1	-6,884.0	396.1	6,884.0	0.51	-0.42	0.28
18,363.0	89.05	179.80	11,648.2	-6,977.0	397.2	6,977.0	2.17	-1.85	1.14
18,455.0	89.89	179.36	11,649.1	-7,069.0	397.9	7,069.0	1.03	0.91	-0.48
18,548.0	89.80	179.97	11,649.4	-7,162.0	398.5	7,162.0	0.66	-0.10	0.66
18,642.0	88.44	180.94	11,650.8	-7,255.9	397.7	7,255.9	1.78	-1.45	1.03
18,735.0	89.45	180.76	11,652.5	-7,348.9	396.3	7,348.9	1.10	1.09	-0.19
18,829.0	90.95	180.06	11,652.2	-7,442.9	395.7	7,442.9	1.76	1.60	-0.74
18,922.0	89.98	180.24	11,651.4	-7,535.9	395.4	7,535.9	1.06	-1.04	0.19
19,018.0	90.59	179.97	11,650.9	-7,631.9	395.2	7,631.9	0.69	0.64	-0.28
19,071.0	91.12	179.18	11,650.2	-7,684.9	395.6	7,684.9	1.79	1.00	-1.49
LAST SVY									
19,078.7	91.12	179.18	11,650.0	-7,692.6	395.8	7,692.6	0.00	0.00	0.00
100' Setback Toe Crossing @ 19078.7'MD, 100'FSL & 318'FEL									
19,131.0	91.12	179.18	11,649.0	-7,744.9	396.5	7,744.9	0.00	0.00	0.00
Projection to TD @ 19131'MD, 50.6'FSL & 317.4'FEL									



Intrepid Survey Report



Company:	Ascent Energy, LLC	Local Co-ordinate Reference:	Well Toque State Com #601H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3819.0usft (Precision 553)
Site:	(Toque) Sec-6_T-21-S_R-33-E	MD Reference:	KB @ 3819.0usft (Precision 553)
Well:	Toque State Com #601H	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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
KOP (Toque State Co - actual wellpath misses target center by 30.9usft at 11001.4usft MD (10962.1 TVD, 80.8 N, 395.7 E) - Point	0.00	0.00	10,964.1	100.0	371.5	549,242.50	763,446.29	32° 30' 28.313 N	103° 36' 46.203 W
Trgt 2 (Toque State C - actual wellpath misses target center by 186.9usft at 11463.6usft MD (11365.9 TVD, -125.6 N, 388.8 E) - Rectangle (sides W100.0 H2,349.0 D30.0)	-1.30	359.93	11,503.0	0.5	373.0	549,142.99	763,448.52	32° 30' 27.329 N	103° 36' 46.185 W
Trgt 1 (Toque State C - actual wellpath misses target center by 205.7usft at 11481.1usft MD (11378.0 TVD, -138.3 N, 388.8 E) - Rectangle (sides W100.0 H5,497.0 D30.0)	-1.00	359.93	11,529.0	0.5	373.0	549,142.99	763,448.52	32° 30' 27.329 N	103° 36' 46.185 W
Landing Pt (Toque St - actual wellpath misses target center by 0.1usft at 11927.0usft MD (11531.7 TVD, -544.2 N, 380.1 E) - Point	0.00	0.00	11,531.7	-544.2	380.0	548,598.40	763,459.20	32° 30' 21.939 N	103° 36' 46.103 W
PBHL (Toque State C - actual wellpath misses target center by 20.7usft at 19131.0usft MD (11649.0 TVD, -7744.9 N, 396.5 E) - Point	1.00	179.92	11,664.6	-7,745.5	383.0	541,397.30	763,510.71	32° 29' 10.682 N	103° 36' 46.070 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,592.1	1,592.0	Rustler			
1,923.1	1,923.0	Salado			
3,326.2	3,305.0	Base Salado Salts			
3,545.9	3,520.0	Yates			
3,865.9	3,835.0	Captian Reef			
5,634.3	5,596.0	Delaware Sands			
5,969.4	5,931.0	Cherry Canyon			
7,088.5	7,050.0	Brushy Canyon			
8,829.6	8,791.0	Bone Spring Lime			
8,993.6	8,955.0	Avalon			
9,205.7	9,167.0	Leonard B			
9,846.0	9,807.0	1st Bone Spring Sand			
10,146.0	10,107.0	2nd Bone Spring Carb			
10,402.0	10,363.0	2nd Bone Spring Sand			
10,937.1	10,898.0	3rd Bone Spring Carb			
11,368.4	11,294.0	3rd Bone Spring Sand			
11,847.4	11,527.0	3rd Bone Spring Sand Target Top			

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
5,398.0	5,359.7	96.4	385.5	TIE ON
11,193.5	11,145.4	27.6	385.5	100' Setback Heel Crossing @ 11193.5'MD, 100'FNL & 317.6'FEL
19,071.0	11,650.2	-7,684.9	395.6	LAST SVY
19,078.7	11,650.0	-7,692.6	395.8	100' Setback Toe Crossing @ 19078.7'MD, 100'FSL & 318'FEL
19,131.0	11,649.0	-7,744.9	396.5	Projection to TD @ 19131'MD, 50.6'FSL & 317.4'FEL



Intrepid
Survey Report



Company:	Ascent Energy, LLC	Local Co-ordinate Reference:	Well Toque State Corn #601H
Project:	Lea County, NM (NAD 83 NME)	TVD Reference:	KB @ 3819.0usft (Precision 553)
Site:	(Toque) Sec-6_T-21-S_R-33-E	MD Reference:	KB @ 3819.0usft (Precision 553)
Well:	Toque State Corn #601H	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Checked By: _____	Approved By: _____	Date: _____
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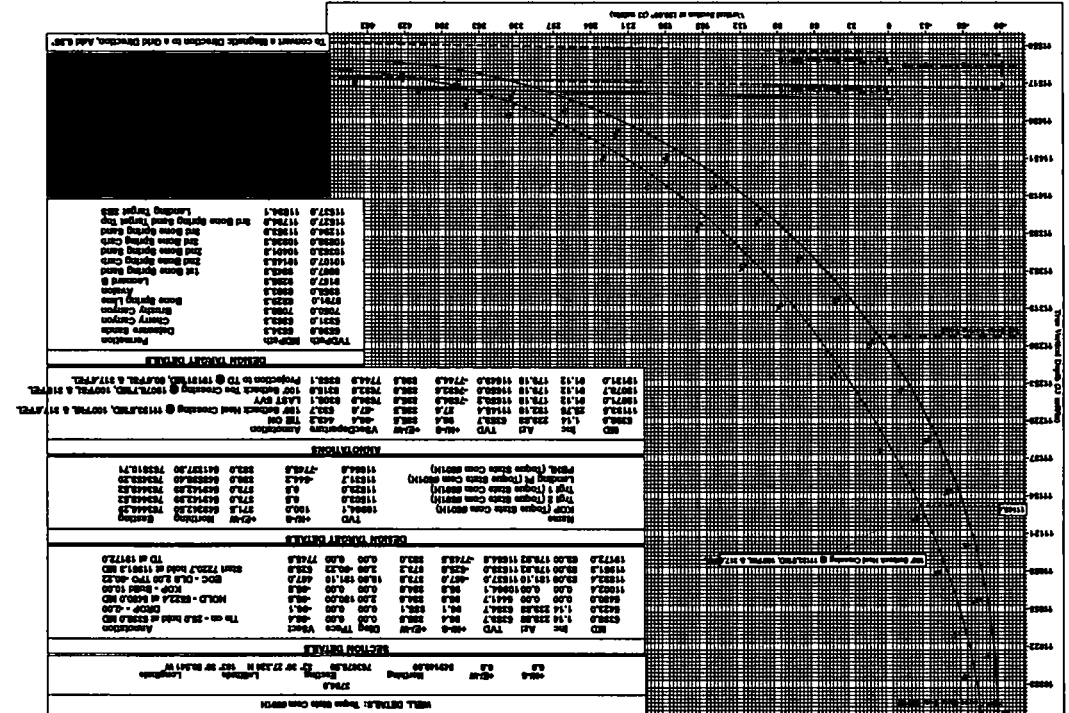
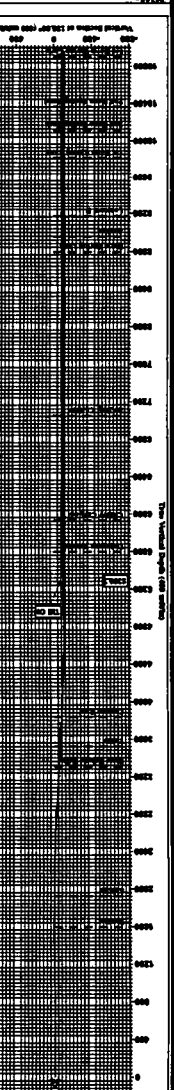
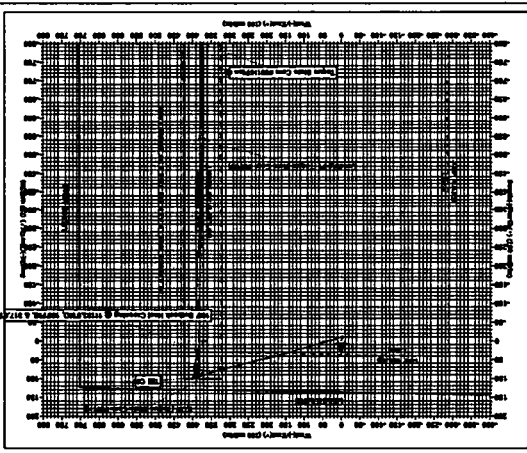
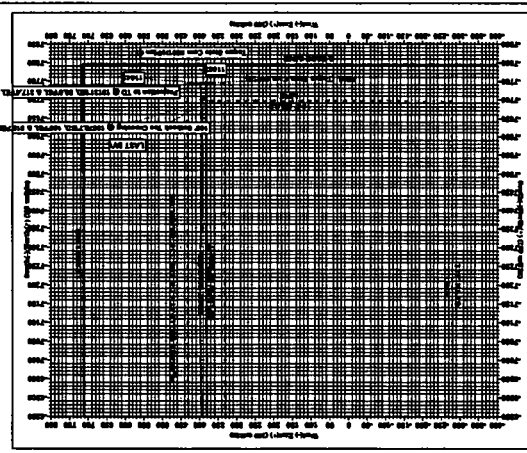
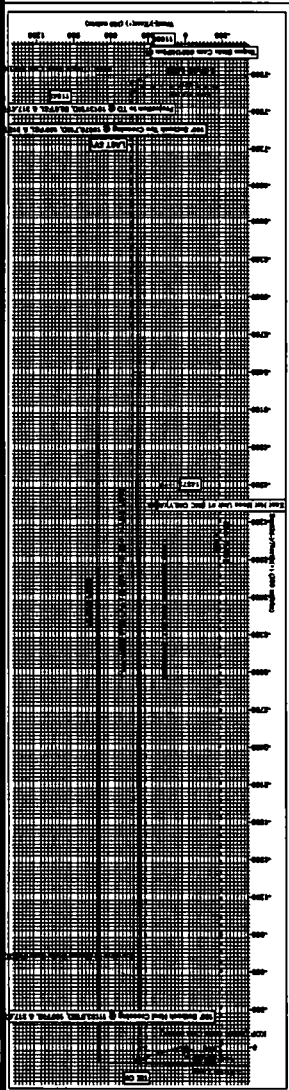
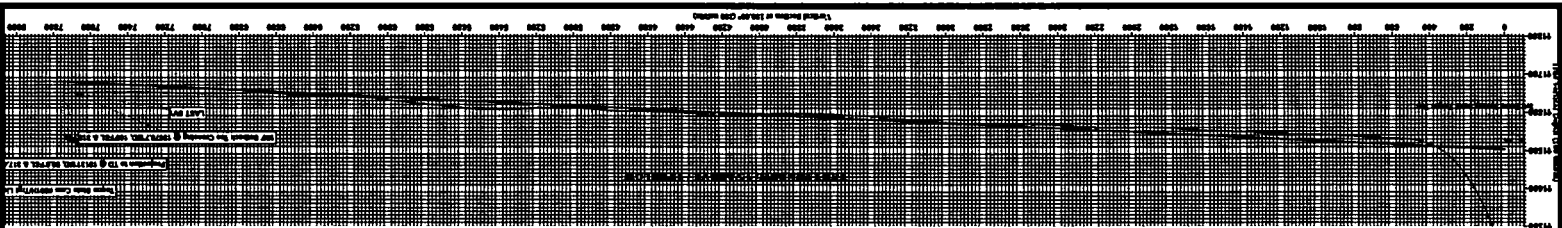
Operator: Ascent Energy, LLC
Well Name: Toque State Com #601H
County: Lea
State: New Mexico
Rig Name: Precision 553
API: 30-025-44787

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: 5536' MD – 19071' MD
Projection to Bit: 19131' MD
Dates Performed: 10/25/2019 – 11/08/2019
Type of Survey: MWD

Sincerely,

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



Project: Las County Road 23 (MAD)
 Sht: (Road) Sd-1-A, 1-B, 1-C
 Wdd: (Road) Sd-1-A, 1-B, 1-C
 Design: AWD
 Lst: 27 37 32.24 N
 Long: 107 30 04.51 W
 Pcd: 0.1, 37.40
 KB: KB @ 3018000 (Precision 533)



INTREPID