



OCD – HOBBS
09/25/2020
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ASCENT ENERGY

LEA COUNTY, NEW MEXICO (NAD 83)

SEC. 6 T21S R33E N.M.P.M.

TOQUE STATE COM #701H

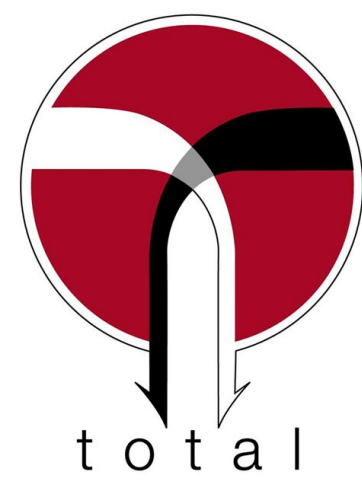
JOB # 2019-441-553

Design: SURVEYS

Standard Survey Report

13 September, 2019



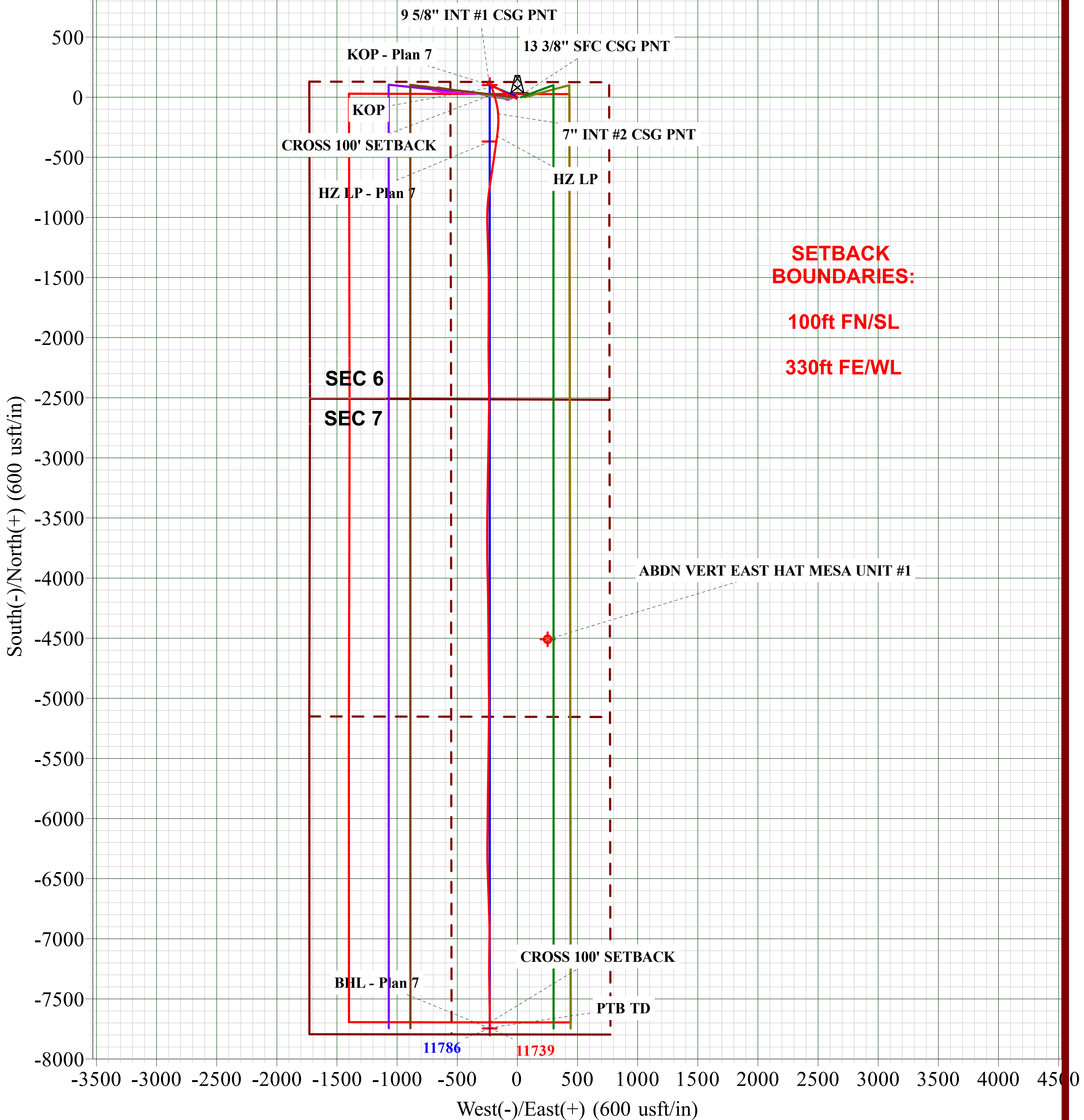
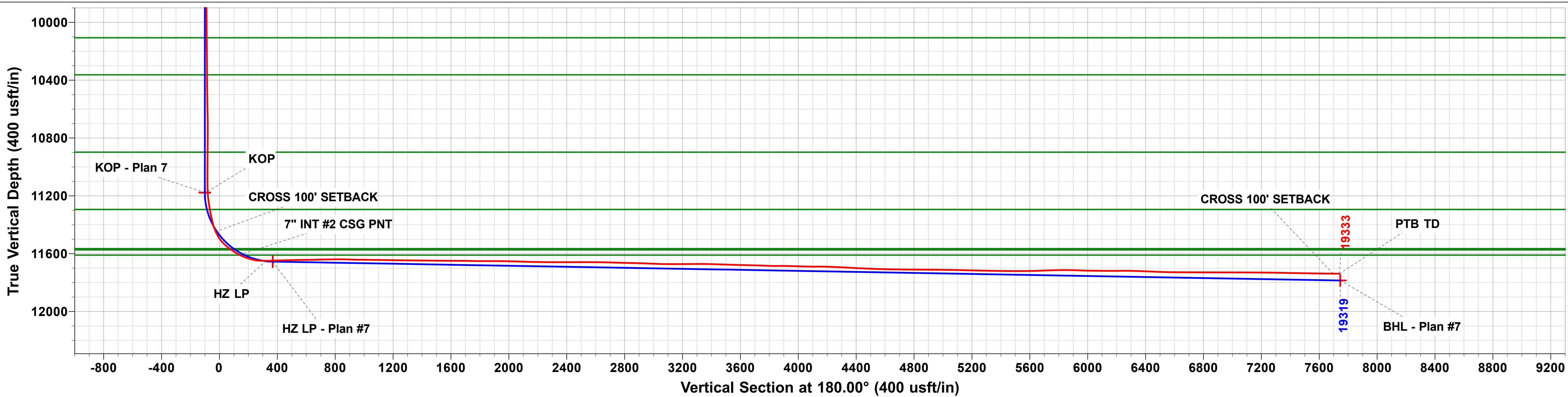
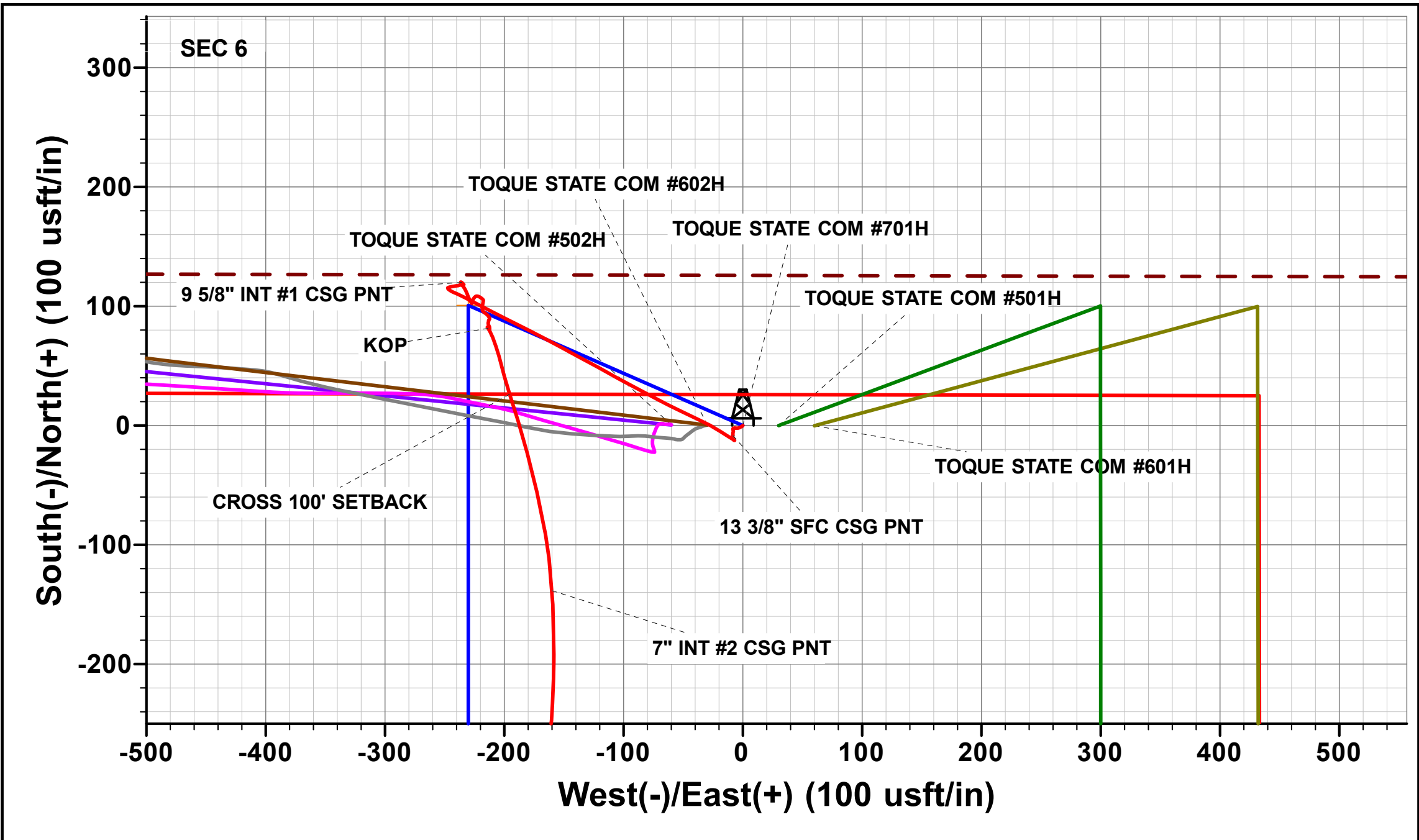
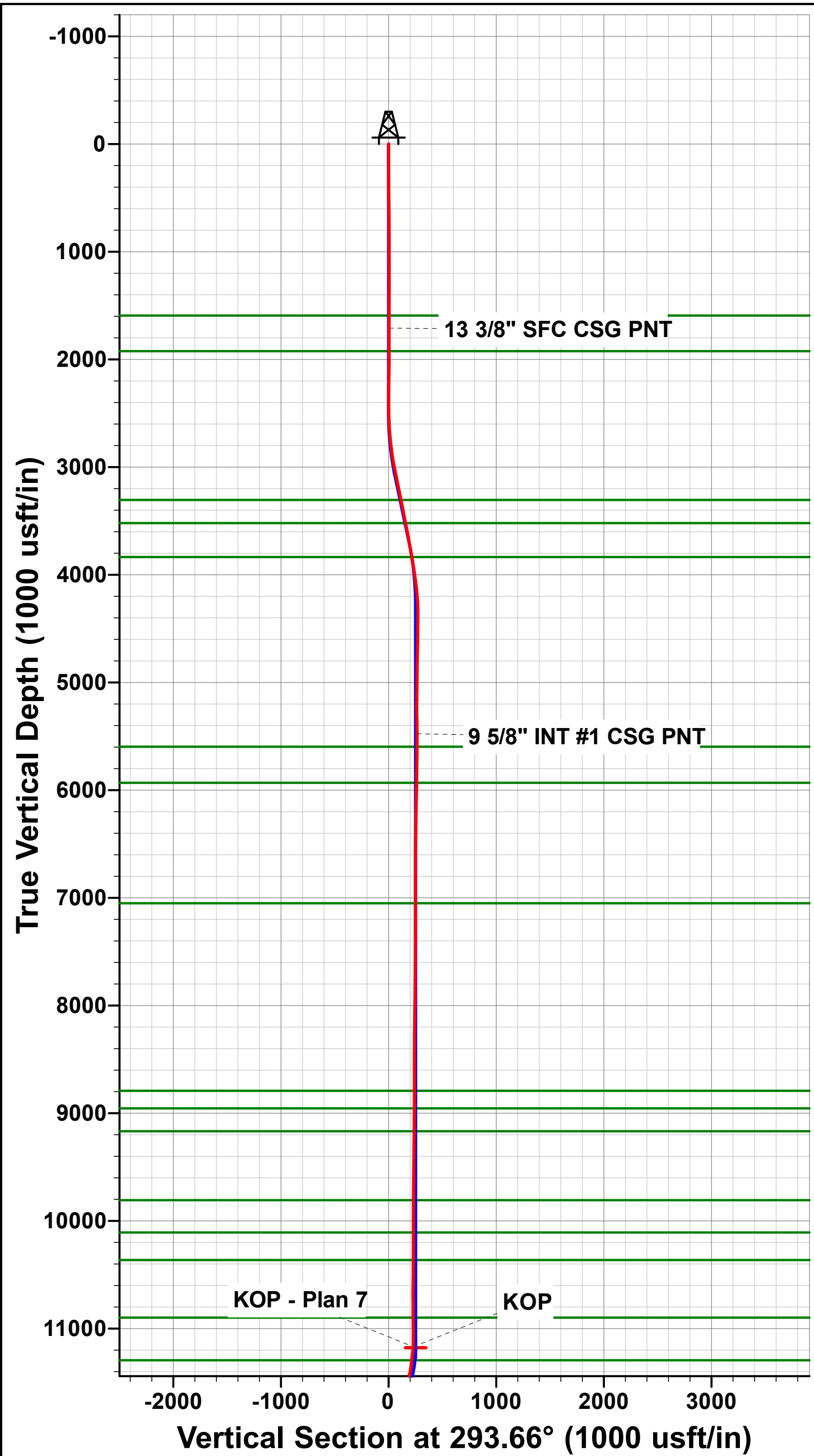


Project: LEA COUNTY, NEW MEXICO (NAD 83)
Site: SEC. 6 T21S R33E N.M.P.M.
Well: TOQUE STATE COM #701H
Wellbore: JOB # 2019-441-553
Design: SURVEYS

ANNOTATIONS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Dep	Annotation
1710.00	0.17	229.77	1709.91	-8.42	-8.23	8.42	16.32	13 3/8" SFC CSG PNT
5500.00	0.51	298.08	5476.82	119.96	-235.64	-119.96	311.92	9 5/8" INT #1 CSG PNT
11193.00	2.75	148.31	11169.32	81.47	-213.54	-81.47	382.27	KOP
11479.18	25.51	162.83	11448.32	26.34	-195.38	-26.34	440.50	CROSS 100' SETBACK
11716.00	62.98	176.14	11608.06	-138.41	-159.90	138.41	609.50	7" INT #2 CSG PNT
11908.00	90.55	188.02	11649.24	-323.13	-168.59	323.13	794.53	HZ LP
19287.91	89.32	179.14	11738.25	-7694.84	-228.23	7694.84	8172.67	CROSS 100' SETBACK
19333.00	89.32	179.14	11738.78	-7739.92	-227.55	7739.92	8217.76	PTB TD

ACTUAL LOCAL COORDINATES:
SHL: 2514ft FSL & 1730ft FWL Sec 6
HZ LP: 2190.10' FSL & 1560.69' FWL Sec 6
BHL: 55.46' FSL & 1501.84' FWL Sec 7

WELLBORE TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
KOP - TOQUE STATE COM #701H (P7)	11177.61	100.77	-230.03	549238.91	762784.70	32° 30' 28.322052 N	103° 36' 53.928609 W	
HZ LP - TOQUE STATE COM #701H (P7)	11655.00	-368.28	-230.04	548769.89	762787.86	32° 30' 23.680963 N	103° 36' 53.928613 W	
BHL - TOQUE STATE COM #701H (P7)	11785.56	-7745.39	-229.41	541393.21	762838.25	32° 29' 10.686384 N	103° 36' 53.920431 W	





Total Directional Services

Survey Report



Company:	ASCENT ENERGY	Local Co-ordinate Reference:	Well TOQUE STATE COM #701H
Project:	LEA COUNTY, NEW MEXICO (NAD 83)	TVD Reference:	GE: 3794' + KB: 25' @ 3819.00usft (Precision 553)
Site:	SEC. 6 T21S R33E N.M.P.M.	MD Reference:	GE: 3794' + KB: 25' @ 3819.00usft (Precision 553)
Well:	TOQUE STATE COM #701H	North Reference:	True
Wellbore:	JOB # 2019-441-553	Survey Calculation Method:	Minimum Curvature
Design:	SURVEYS	Database:	EDM 5000.15 Single User Db

Project	LEA COUNTY, NEW MEXICO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site	SEC. 6 T21S R33E N.M.P.M.		
Site Position:		Northing:	549,139.90 usft
From:	Map	Easting:	762,985.60 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 30' 27.328963 N
		Longitude:	103° 36' 51.590446 W
		Grid Convergence:	0.39 °

Well	TOQUE STATE COM #701H		
Well Position	+N/-S	0.00 usft	Northing: 549,139.70 usft
	+E/-W	0.00 usft	Easting: 763,015.40 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 30' 27.324995 N
		Longitude:	103° 36' 51.242480 W
		Ground Level:	3,794.00 usft

Wellbore	JOB # 2019-441-553				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/17/2019	6.79	60.29	47,901.49714357

Design	SURVEYS				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	180.00	

Survey Program	Date	9/13/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
150.00	19,333.00	SURVEYS (JOB # 2019-441-553)	OWSG (Rev2) 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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
150.00	0.35	214.21	150.00	-0.38	-0.26	0.38	0.23	0.23	0.00	
240.00	0.70	255.87	240.00	-0.74	-0.95	0.74	0.55	0.39	46.29	
328.00	0.84	235.75	327.99	-1.23	-2.00	1.23	0.34	0.16	-22.86	
416.00	0.44	251.21	415.98	-1.71	-2.85	1.71	0.49	-0.45	17.57	
505.00	0.53	242.60	504.98	-2.01	-3.54	2.01	0.13	0.10	-9.67	
593.00	0.48	280.66	592.98	-2.13	-4.27	2.13	0.38	-0.06	43.25	
689.00	0.62	258.33	688.97	-2.16	-5.17	2.16	0.26	0.15	-23.26	
782.00	0.40	297.97	781.97	-2.11	-5.95	2.11	0.43	-0.24	42.62	



Total Directional Services

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Site:	SEC. 6 T21S R33E N.M.P.M.	MD Reference:	GE: 3794' + KB: 25' @ 3819.00usft (Precision 553)
Well:	TOQUE STATE COM #701H	North Reference:	True
Wellbore:	JOB # 2019-441-553	Survey Calculation Method:	Minimum Curvature
Design:	SURVEYS	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)
874.00	0.66	260.79	873.96	-2.04	-6.76	2.04	0.45	0.28	-40.41
967.00	0.53	257.01	966.96	-2.22	-7.70	2.22	0.15	-0.14	-4.06
1,061.00	0.18	58.03	1,060.96	-2.24	-8.00	2.24	0.75	-0.37	171.30
1,153.00	0.57	220.72	1,152.96	-2.51	-8.18	2.51	0.81	0.42	176.84
1,246.00	0.75	161.39	1,245.95	-3.44	-8.29	3.44	0.72	0.19	-63.80
1,339.00	0.40	152.42	1,338.95	-4.30	-7.94	4.30	0.39	-0.38	-9.65
1,432.00	1.49	198.22	1,431.93	-5.74	-8.17	5.74	1.34	1.17	49.25
1,525.00	0.88	164.64	1,524.91	-7.58	-8.36	7.58	0.97	-0.66	-36.11
1,592.09	0.34	161.00	1,592.00	-8.26	-8.16	8.26	0.81	-0.81	-5.42
Rustler									
1,618.00	0.13	151.46	1,617.91	-8.36	-8.12	8.36	0.81	-0.80	-36.83
1,652.00	0.09	291.12	1,651.91	-8.38	-8.12	8.38	0.61	-0.12	410.76
1,710.00	0.17	229.77	1,709.91	-8.42	-8.23	8.42	0.26	0.14	-105.78
13 3/8" SFC CSG PNT									
1,803.00	0.40	211.31	1,802.91	-8.79	-8.51	8.79	0.26	0.24	-19.85
1,895.00	0.22	150.93	1,894.91	-9.22	-8.59	9.22	0.38	-0.20	-65.63
1,923.09	0.30	156.48	1,923.00	-9.33	-8.53	9.33	0.29	0.27	19.74
Salado									
1,989.00	0.48	162.44	1,988.91	-9.75	-8.38	9.75	0.29	0.28	9.05
2,083.00	0.40	137.66	2,082.90	-10.37	-8.04	10.37	0.22	-0.09	-26.36
2,175.00	0.57	165.08	2,174.90	-11.05	-7.71	11.05	0.31	0.18	29.80
2,268.00	0.48	172.82	2,267.90	-11.88	-7.54	11.88	0.12	-0.10	8.32
2,361.00	0.31	117.53	2,360.89	-12.39	-7.27	12.39	0.43	-0.18	-59.45
2,455.00	0.22	70.07	2,454.89	-12.44	-6.87	12.44	0.24	-0.10	-50.49
2,549.00	1.63	298.06	2,548.88	-11.75	-7.88	11.75	1.90	1.50	-140.44
2,642.00	4.13	301.93	2,641.76	-9.36	-11.89	9.36	2.69	2.69	4.16
2,735.00	5.76	303.07	2,734.41	-5.04	-18.65	5.04	1.76	1.75	1.23
2,827.00	6.86	298.50	2,825.85	0.10	-27.35	-0.10	1.31	1.20	-4.97
2,919.00	8.97	295.25	2,916.97	5.78	-38.66	-5.78	2.34	2.29	-3.53
3,012.00	11.12	295.86	3,008.54	12.79	-53.29	-12.79	2.31	2.31	0.66
3,105.00	12.31	297.44	3,099.60	21.27	-70.16	-21.27	1.33	1.28	1.70
3,200.00	12.09	298.06	3,192.45	30.62	-87.93	-30.62	0.27	-0.23	0.65
3,294.00	11.43	298.50	3,284.48	39.69	-104.80	-39.69	0.71	-0.70	0.47
3,314.93	11.39	298.65	3,305.00	41.67	-108.44	-41.67	0.24	-0.19	0.74
Base Salado Salts									
3,388.00	11.25	299.20	3,376.64	48.61	-120.99	-48.61	0.24	-0.19	0.75
3,481.00	10.95	298.06	3,467.90	57.19	-136.70	-57.19	0.40	-0.32	-1.23
3,534.05	10.77	298.36	3,520.00	61.91	-145.51	-61.91	0.35	-0.33	0.56
Yates									
3,575.00	10.64	298.59	3,560.24	65.54	-152.20	-65.54	0.35	-0.33	0.57
3,667.00	10.55	297.71	3,650.67	73.52	-167.12	-73.52	0.20	-0.10	-0.96
3,759.00	10.11	296.92	3,741.18	81.09	-181.77	-81.09	0.50	-0.48	-0.86



Total Directional Services

Survey Report



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Wellbore:	JOB # 2019-441-553	Survey Calculation Method:	Minimum Curvature
Design:	SURVEYS	Database:	EDM 5000.15 Single User Db

Survey									
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3,851.00	9.85	296.30	3,831.79	88.24	-196.03	-88.24	0.31	-0.28	-0.67
3,854.26	9.83	296.35	3,835.00	88.48	-196.53	-88.48	0.59	-0.53	1.54
Captian Reef									
3,944.00	9.36	297.80	3,923.49	95.29	-209.85	-95.29	0.59	-0.53	1.62
4,131.00	6.73	296.74	4,108.63	107.31	-233.09	-107.31	1.41	-1.41	-0.57
4,224.00	4.75	293.40	4,201.16	111.29	-241.49	-111.29	2.16	-2.13	-3.59
4,317.00	2.24	309.13	4,293.98	113.97	-246.43	-113.97	2.86	-2.70	16.91
4,410.00	0.70	56.62	4,386.96	115.43	-247.37	-115.43	2.73	-1.66	115.58
4,501.00	1.32	71.30	4,477.94	116.07	-245.91	-116.07	0.73	0.68	16.13
4,594.00	1.19	85.80	4,570.92	116.49	-243.94	-116.49	0.37	-0.14	15.59
4,688.00	1.27	76.49	4,664.90	116.80	-241.95	-116.80	0.23	0.09	-9.90
4,781.00	0.88	78.51	4,757.88	117.18	-240.25	-117.18	0.42	-0.42	2.17
4,875.00	1.05	86.07	4,851.87	117.39	-238.68	-117.39	0.23	0.18	8.04
4,969.00	0.92	67.00	4,945.85	117.74	-237.13	-117.74	0.37	-0.14	-20.29
5,063.00	0.75	92.22	5,039.84	118.01	-235.82	-118.01	0.43	-0.18	26.83
5,157.00	0.97	88.97	5,133.83	118.00	-234.41	-118.00	0.24	0.23	-3.46
5,249.00	0.35	302.72	5,225.83	118.17	-233.87	-118.17	1.39	-0.67	-158.97
5,342.00	0.66	322.14	5,318.83	118.74	-234.43	-118.74	0.38	0.33	20.88
5,435.00	0.66	316.43	5,411.82	119.56	-235.13	-119.56	0.07	0.00	-6.14
5,500.00	0.51	298.08	5,476.82	119.96	-235.64	-119.96	0.37	-0.24	-28.23
9 5/8" INT #1 CSG PNT									
5,515.00	0.48	292.35	5,491.82	120.02	-235.76	-120.02	0.37	-0.17	-38.22
5,604.00	0.48	293.40	5,580.81	120.31	-236.45	-120.31	0.01	0.00	1.18
5,619.19	0.30	278.80	5,596.00	120.34	-236.54	-120.34	1.35	-1.19	-96.12
Delaware Sands									
5,694.00	0.79	147.77	5,670.81	119.93	-236.46	-119.93	1.35	0.66	-175.15
5,783.00	1.41	147.85	5,759.79	118.49	-235.55	-118.49	0.70	0.70	0.09
5,873.00	1.32	147.59	5,849.77	116.67	-234.41	-116.67	0.10	-0.10	-0.29
5,954.25	1.36	147.27	5,931.00	115.07	-233.38	-115.07	0.05	0.04	-0.39
Cherry Canyon									
5,962.00	1.36	147.24	5,938.74	114.92	-233.28	-114.92	0.05	0.04	-0.38
6,050.00	1.41	153.30	6,026.72	113.07	-232.23	-113.07	0.18	0.06	6.89
6,139.00	1.19	159.10	6,115.70	111.23	-231.41	-111.23	0.29	-0.25	6.52
6,228.00	1.19	158.05	6,204.68	109.51	-230.74	-109.51	0.02	0.00	-1.18
6,317.00	1.10	158.23	6,293.66	107.86	-230.07	-107.86	0.10	-0.10	0.20
6,406.00	1.23	152.60	6,382.64	106.22	-229.32	-106.22	0.19	0.15	-6.33
6,496.00	1.14	152.78	6,472.62	104.57	-228.46	-104.57	0.10	-0.10	0.20
6,585.00	1.10	150.84	6,561.60	103.03	-227.64	-103.03	0.06	-0.04	-2.18
6,674.00	0.09	38.87	6,650.60	102.34	-227.18	-102.34	1.28	-1.13	-125.81
6,764.00	0.57	3.63	6,740.60	102.84	-227.11	-102.84	0.55	0.53	-39.16
6,853.00	0.53	13.47	6,829.59	103.68	-226.99	-103.68	0.12	-0.04	11.06
6,943.00	0.48	22.35	6,919.59	104.44	-226.75	-104.44	0.10	-0.06	9.87
7,032.00	0.48	29.20	7,008.59	105.11	-226.42	-105.11	0.06	0.00	7.70



Total Directional Services

Survey Report



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Project:	LEA COUNTY, NEW MEXICO (NAD 83)	TVD Reference:	GE: 3794' + KB: 25' @ 3819.00usft (Precision 553)
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Wellbore:	JOB # 2019-441-553	Survey Calculation Method:	Minimum Curvature
Design:	SURVEYS	Database:	EDM 5000.15 Single User Db

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7,073.42	0.48	29.20	7,050.00	105.41	-226.25	-105.41	0.00	0.00	0.00
Brushy Canyon									
7,122.00	0.48	27.97	7,098.58	105.77	-226.06	-105.77	0.02	0.00	-2.53
7,211.00	0.48	29.91	7,187.58	106.42	-225.70	-106.42	0.02	0.00	2.18
7,301.00	0.53	41.51	7,277.58	107.06	-225.24	-107.06	0.13	0.06	12.89
7,390.00	0.40	45.81	7,366.57	107.59	-224.74	-107.59	0.15	-0.15	4.83
7,480.00	0.31	50.56	7,456.57	107.96	-224.33	-107.96	0.11	-0.10	5.28
7,569.00	0.31	56.98	7,545.57	108.24	-223.94	-108.24	0.04	0.00	7.21
7,658.00	0.40	81.15	7,634.57	108.42	-223.43	-108.42	0.19	0.10	27.16
7,748.00	0.48	91.34	7,724.57	108.46	-222.74	-108.46	0.12	0.09	11.32
7,837.00	0.66	106.90	7,813.56	108.30	-221.88	-108.30	0.26	0.20	17.48
7,927.00	0.66	116.04	7,903.56	107.93	-220.92	-107.93	0.12	0.00	10.16
8,016.00	0.75	122.72	7,992.55	107.39	-219.97	-107.39	0.14	0.10	7.51
8,106.00	0.84	127.55	8,082.54	106.67	-218.95	-106.67	0.12	0.10	5.37
8,195.00	0.92	135.90	8,171.53	105.76	-217.93	-105.76	0.17	0.09	9.38
8,284.00	0.44	180.55	8,260.52	104.90	-217.44	-104.90	0.77	-0.54	50.17
8,374.00	0.53	190.39	8,350.52	104.15	-217.52	-104.15	0.14	0.10	10.93
8,463.00	0.62	193.82	8,439.52	103.27	-217.71	-103.27	0.11	0.10	3.85
8,553.00	0.62	190.66	8,529.51	102.32	-217.91	-102.32	0.04	0.00	-3.51
8,642.00	0.70	186.79	8,618.50	101.31	-218.07	-101.31	0.10	0.09	-4.35
8,732.00	0.79	188.64	8,708.50	100.15	-218.23	-100.15	0.10	0.10	2.06
8,814.51	0.63	186.48	8,791.00	99.13	-218.36	-99.13	0.19	-0.19	-2.62
Bone Spring Lime									
8,821.00	0.62	186.26	8,797.49	99.06	-218.37	-99.06	0.19	-0.19	-3.34
8,911.00	0.53	180.55	8,887.49	98.16	-218.43	-98.16	0.12	-0.10	-6.34
8,978.52	0.63	176.14	8,955.00	97.48	-218.41	-97.48	0.16	0.15	-6.54
Avalon									
9,000.00	0.66	175.01	8,976.48	97.24	-218.39	-97.24	0.16	0.15	-5.24
9,089.00	0.40	159.10	9,065.48	96.44	-218.23	-96.44	0.33	-0.29	-17.88
9,179.00	0.35	129.05	9,155.48	95.97	-217.91	-95.97	0.22	-0.06	-33.39
9,190.53	0.38	131.82	9,167.00	95.93	-217.85	-95.93	0.33	0.29	24.07
Leonard B									
9,268.00	0.62	142.41	9,244.47	95.42	-217.40	-95.42	0.33	0.31	13.66
9,357.00	0.75	127.02	9,333.47	94.69	-216.64	-94.69	0.25	0.15	-17.29
9,447.00	0.79	121.22	9,423.46	94.01	-215.64	-94.01	0.10	0.04	-6.44
9,536.00	0.66	129.40	9,512.45	93.37	-214.72	-93.37	0.19	-0.15	9.19
9,626.00	0.75	143.55	9,602.44	92.57	-213.97	-92.57	0.22	0.10	15.72
9,716.00	0.92	143.46	9,692.43	91.51	-213.19	-91.51	0.19	0.19	-0.10
9,805.00	1.05	147.50	9,781.42	90.25	-212.33	-90.25	0.17	0.15	4.54
9,830.58	0.80	160.10	9,807.00	89.89	-212.14	-89.89	1.26	-0.98	49.24
1st Bone Spring Sand									
9,895.00	0.62	228.54	9,871.41	89.23	-212.25	-89.23	1.26	-0.28	106.25



Total Directional Services

Survey Report



Company:	ASCENT ENERGY	Local Co-ordinate Reference:	Well TOQUE STATE COM #701H
Project:	LEA COUNTY, NEW MEXICO (NAD 83)	TVD Reference:	GE: 3794' + KB: 25' @ 3819.00usft (Precision 553)
Site:	SEC. 6 T21S R33E N.M.P.M.	MD Reference:	GE: 3794' + KB: 25' @ 3819.00usft (Precision 553)
Well:	TOQUE STATE COM #701H	North Reference:	True
Wellbore:	JOB # 2019-441-553	Survey Calculation Method:	Minimum Curvature
Design:	SURVEYS	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)
9,984.00	0.44	220.54	9,960.41	88.65	-212.83	-88.65	0.22	-0.20	-8.99
10,074.00	0.40	176.16	10,050.41	88.08	-213.04	-88.08	0.35	-0.04	-49.31
10,130.59	0.40	186.79	10,107.00	87.69	-213.05	-87.69	0.13	-0.01	18.78
2nd Bone Spring Carb									
10,163.00	0.40	192.85	10,139.41	87.47	-213.08	-87.47	0.13	0.01	18.71
10,253.00	0.53	190.39	10,229.40	86.75	-213.23	-86.75	0.15	0.14	-2.73
10,342.00	0.44	197.78	10,318.40	86.02	-213.41	-86.02	0.12	-0.10	8.30
10,386.60	0.45	182.69	10,363.00	85.68	-213.47	-85.68	0.26	0.01	-33.83
2nd Bone Spring Sand									
10,431.00	0.48	168.95	10,407.40	85.33	-213.44	-85.33	0.26	0.08	-30.95
10,521.00	0.97	154.45	10,497.39	84.27	-213.04	-84.27	0.58	0.54	-16.11
10,610.00	1.27	155.33	10,586.37	82.69	-212.30	-82.69	0.34	0.34	0.99
10,699.00	1.19	194.88	10,675.35	80.91	-212.13	-80.91	0.94	-0.09	44.44
10,788.00	0.70	323.99	10,764.35	80.45	-212.69	-80.45	1.93	-0.55	145.07
10,877.00	0.79	349.91	10,853.34	81.50	-213.11	-81.50	0.39	0.10	29.12
10,921.66	0.57	329.31	10,898.00	81.99	-213.28	-81.99	0.73	-0.50	-46.12
3rd Bone Spring Carb									
10,967.00	0.48	293.31	10,943.34	82.26	-213.57	-82.26	0.73	-0.19	-79.41
11,056.00	0.22	269.50	11,032.33	82.40	-214.08	-82.40	0.33	-0.29	-26.75
11,138.00	0.13	69.10	11,114.33	82.43	-214.15	-82.43	0.42	-0.11	194.63
11,183.00	1.85	150.75	11,159.33	81.82	-213.75	-81.82	4.08	3.82	181.44
11,193.00	2.75	148.31	11,169.32	81.47	-213.54	-81.47	9.00	8.95	-24.40
KOP									
11,227.00	5.80	145.66	11,203.22	79.36	-212.15	-79.36	9.00	8.99	-7.79
11,272.00	9.63	161.83	11,247.81	73.91	-209.69	-73.91	9.70	8.51	35.93
11,317.00	10.99	158.31	11,292.08	66.34	-206.93	-66.34	3.33	3.02	-7.82
11,318.96	10.96	158.69	11,294.00	66.00	-206.79	-66.00	3.93	-1.34	19.40
3rd Bone Spring Sand									
11,362.00	10.51	167.45	11,336.29	58.35	-204.45	-58.35	3.93	-1.05	20.35
11,437.00	17.19	163.59	11,409.07	41.02	-199.83	-41.02	8.99	8.91	-5.15
11,479.18	25.51	162.83	11,448.32	26.34	-195.38	-26.34	19.74	19.73	-1.79
CROSS 100' SETBACK									
11,482.00	26.07	162.80	11,450.86	25.17	-195.02	-25.17	19.74	19.74	-1.21
11,526.00	34.33	162.88	11,488.86	4.04	-188.50	-4.04	18.77	18.77	0.18
11,571.00	43.82	164.82	11,523.75	-23.19	-180.66	23.19	21.26	21.09	4.31
11,616.00	52.44	166.93	11,553.76	-55.66	-172.53	55.66	19.47	19.16	4.69
11,634.75	53.93	168.39	11,565.00	-70.33	-169.33	70.33	10.10	7.94	7.80
Wolfcamp A									
11,650.27	55.17	169.56	11,574.00	-82.73	-166.91	82.73	10.10	8.02	7.53
WC Y									
11,661.00	56.04	170.35	11,580.06	-91.45	-165.37	91.45	10.10	8.08	7.34
11,685.00	58.81	172.99	11,592.98	-111.46	-162.45	111.46	14.80	11.54	11.00
11,716.00	62.98	176.14	11,608.06	-138.41	-159.90	138.41	16.12	13.45	10.16



Total Directional Services

Survey Report



Company:	ASCENT ENERGY	Local Co-ordinate Reference:	Well TOQUE STATE COM #701H
Project:	LEA COUNTY, NEW MEXICO (NAD 83)	TVD Reference:	GE: 3794' + KB: 25' @ 3819.00usft (Precision 553)
Site:	SEC. 6 T21S R33E N.M.P.M.	MD Reference:	GE: 3794' + KB: 25' @ 3819.00usft (Precision 553)
Well:	TOQUE STATE COM #701H	North Reference:	True
Wellbore:	JOB # 2019-441-553	Survey Calculation Method:	Minimum Curvature
Design:	SURVEYS	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" INT #2 CSG PNT										
11,720.31	63.57	176.56	11,610.00	-142.26	-159.65	142.26	16.12	13.58	9.71	
WC X										
11,729.00	64.75	177.39	11,613.79	-150.07	-159.24	150.07	16.12	13.62	9.57	
11,774.00	70.86	180.20	11,630.78	-191.70	-158.39	191.70	14.76	13.58	6.24	
11,818.00	78.11	183.01	11,642.55	-234.04	-159.59	234.04	17.59	16.48	6.39	
11,863.00	87.12	186.00	11,648.33	-278.48	-163.10	278.48	21.08	20.02	6.64	
11,908.00	90.55	188.02	11,649.24	-323.13	-168.59	323.13	8.85	7.62	4.49	
HZ LP										
11,953.00	91.52	187.93	11,648.43	-367.68	-174.84	367.68	2.16	2.16	-0.20	
12,042.00	92.26	188.28	11,645.49	-455.75	-187.38	455.75	0.92	0.83	0.39	
12,131.00	90.24	188.20	11,643.55	-543.80	-200.13	543.80	2.27	-2.27	-0.09	
12,221.00	91.03	188.55	11,642.55	-632.84	-213.24	632.84	0.96	0.88	0.39	
12,310.00	91.65	188.90	11,640.47	-720.78	-226.73	720.78	0.80	0.70	0.39	
12,400.00	90.11	186.44	11,639.09	-809.96	-238.74	809.96	3.22	-1.71	-2.73	
12,489.00	88.13	184.07	11,640.46	-898.56	-246.89	898.56	3.47	-2.22	-2.66	
12,579.00	89.54	180.46	11,642.29	-988.45	-250.45	988.45	4.31	1.57	-4.01	
12,668.00	88.97	178.09	11,643.44	-1,077.43	-249.32	1,077.43	2.74	-0.64	-2.66	
12,758.00	89.63	178.18	11,644.54	-1,167.38	-246.39	1,167.38	0.74	0.73	0.10	
12,847.00	88.79	178.79	11,645.77	-1,256.34	-244.04	1,256.34	1.17	-0.94	0.69	
12,937.00	89.01	178.35	11,647.50	-1,346.29	-241.79	1,346.29	0.55	0.24	-0.49	
13,026.00	89.85	178.35	11,648.38	-1,435.25	-239.23	1,435.25	0.94	0.94	0.00	
13,115.00	89.54	180.11	11,648.86	-1,524.24	-238.03	1,524.24	2.01	-0.35	1.98	
13,205.00	90.15	179.76	11,649.10	-1,614.24	-237.93	1,614.24	0.78	0.68	-0.39	
13,294.00	88.79	180.37	11,649.92	-1,703.23	-238.03	1,703.23	1.67	-1.53	0.69	
13,384.00	89.49	180.29	11,651.28	-1,793.22	-238.55	1,793.22	0.78	0.78	-0.09	
13,473.00	90.20	180.29	11,651.52	-1,882.22	-239.00	1,882.22	0.80	0.80	0.00	
13,563.00	89.14	180.46	11,652.03	-1,972.21	-239.59	1,972.21	1.19	-1.18	0.19	
13,652.00	87.87	179.58	11,654.36	-2,061.18	-239.62	2,061.18	1.74	-1.43	-0.99	
13,742.00	88.70	179.67	11,657.05	-2,151.14	-239.03	2,151.14	0.93	0.92	0.10	
13,831.00	89.32	179.32	11,658.59	-2,240.12	-238.25	2,240.12	0.80	0.70	-0.39	
13,920.00	89.89	179.23	11,659.20	-2,329.11	-237.12	2,329.11	0.65	0.64	-0.10	
14,009.00	90.64	179.14	11,658.79	-2,418.10	-235.86	2,418.10	0.85	0.84	-0.10	
14,098.00	89.45	180.20	11,658.72	-2,507.09	-235.35	2,507.09	1.79	-1.34	1.19	
14,188.00	90.07	179.93	11,659.10	-2,597.09	-235.45	2,597.09	0.75	0.69	-0.30	
14,277.00	88.13	181.43	11,660.49	-2,686.07	-236.50	2,686.07	2.76	-2.18	1.69	
14,367.00	88.44	181.25	11,663.19	-2,776.00	-238.61	2,776.00	0.40	0.34	-0.20	
14,456.00	89.10	181.08	11,665.10	-2,864.96	-240.42	2,864.96	0.77	0.74	-0.19	
14,545.00	87.38	180.81	11,667.83	-2,953.91	-241.88	2,953.91	1.96	-1.93	-0.30	
14,635.00	88.18	180.73	11,671.32	-3,043.83	-243.09	3,043.83	0.89	0.89	-0.09	
14,724.00	90.15	180.90	11,672.62	-3,132.81	-244.36	3,132.81	2.22	2.21	0.19	
14,814.00	90.81	180.99	11,671.86	-3,222.79	-245.84	3,222.79	0.74	0.73	0.10	



Total Directional Services

Survey Report



Company:	ASCENT ENERGY	Local Co-ordinate Reference:	Well TOQUE STATE COM #701H
Project:	LEA COUNTY, NEW MEXICO (NAD 83)	TVD Reference:	GE: 3794' + KB: 25' @ 3819.00usft (Precision 553)
Site:	SEC. 6 T21S R33E N.M.P.M.	MD Reference:	GE: 3794' + KB: 25' @ 3819.00usft (Precision 553)
Well:	TOQUE STATE COM #701H	North Reference:	True
Wellbore:	JOB # 2019-441-553	Survey Calculation Method:	Minimum Curvature
Design:	SURVEYS	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)	
14,903.00	90.20	181.16	11,671.08	-3,311.77	-247.51	3,311.77	0.71	-0.69	0.19	
14,993.00	88.00	181.08	11,672.49	-3,401.74	-249.27	3,401.74	2.45	-2.44	-0.09	
15,082.00	88.53	180.90	11,675.19	-3,490.68	-250.81	3,490.68	0.63	0.60	-0.20	
15,171.00	87.69	179.93	11,678.12	-3,579.63	-251.45	3,579.63	1.44	-0.94	-1.09	
15,261.00	89.54	180.20	11,680.30	-3,669.60	-251.55	3,669.60	2.08	2.06	0.30	
15,350.00	87.03	178.97	11,682.96	-3,758.55	-250.91	3,758.55	3.14	-2.82	-1.38	
15,440.00	90.29	179.76	11,685.06	-3,848.51	-249.91	3,848.51	3.73	3.62	0.88	
15,529.00	89.05	178.18	11,685.58	-3,937.49	-248.31	3,937.49	2.26	-1.39	-1.78	
15,618.00	87.60	178.62	11,688.18	-4,026.41	-245.83	4,026.41	1.70	-1.63	0.49	
15,708.00	90.55	179.14	11,689.63	-4,116.37	-244.07	4,116.37	3.33	3.28	0.58	
15,797.00	88.09	179.32	11,690.69	-4,205.35	-242.88	4,205.35	2.77	-2.76	0.20	
15,886.00	87.21	179.58	11,694.34	-4,294.27	-242.02	4,294.27	1.03	-0.99	0.29	
15,975.00	86.99	179.58	11,698.84	-4,383.15	-241.37	4,383.15	0.25	-0.25	0.00	
16,065.00	87.47	179.58	11,703.19	-4,473.05	-240.71	4,473.05	0.53	0.53	0.00	
16,154.00	88.31	179.58	11,706.46	-4,561.98	-240.06	4,561.98	0.94	0.94	0.00	
16,244.00	88.88	179.67	11,708.67	-4,651.95	-239.47	4,651.95	0.64	0.63	0.10	
16,333.00	89.27	179.58	11,710.11	-4,740.94	-238.89	4,740.94	0.45	0.44	-0.10	
16,422.00	89.93	179.50	11,710.73	-4,829.93	-238.17	4,829.93	0.75	0.74	-0.09	
16,512.00	89.19	179.14	11,711.42	-4,919.92	-237.11	4,919.92	0.91	-0.82	-0.40	
16,601.00	90.11	179.23	11,711.96	-5,008.91	-235.84	5,008.91	1.04	1.03	0.10	
16,691.00	88.66	180.37	11,712.93	-5,098.90	-235.53	5,098.90	2.05	-1.61	1.27	
16,780.00	88.35	180.90	11,715.25	-5,187.87	-236.51	5,187.87	0.69	-0.35	0.60	
16,870.00	88.70	180.64	11,717.57	-5,277.83	-237.72	5,277.83	0.48	0.39	-0.29	
16,959.00	89.23	180.73	11,719.18	-5,366.81	-238.78	5,366.81	0.60	0.60	0.10	
17,049.00	89.23	180.64	11,720.39	-5,456.79	-239.86	5,456.79	0.10	0.00	-0.10	
17,138.00	90.59	180.64	11,720.53	-5,545.79	-240.85	5,545.79	1.53	1.53	0.00	
17,228.00	91.16	181.25	11,719.15	-5,635.76	-242.34	5,635.76	0.93	0.63	0.68	
17,317.00	92.92	180.20	11,715.98	-5,724.69	-243.46	5,724.69	2.30	1.98	-1.18	
17,407.00	90.59	181.43	11,713.23	-5,814.63	-244.74	5,814.63	2.93	-2.59	1.37	
17,496.00	87.96	180.55	11,714.35	-5,903.60	-246.28	5,903.60	3.12	-2.96	-0.99	
17,585.00	88.35	180.29	11,717.22	-5,992.56	-246.93	5,992.56	0.53	0.44	-0.29	
17,675.00	89.71	180.81	11,718.74	-6,082.54	-247.80	6,082.54	1.62	1.51	0.58	
17,764.00	90.07	180.73	11,718.91	-6,171.53	-248.99	6,171.53	0.41	0.40	-0.09	
17,853.00	90.24	180.20	11,718.67	-6,260.52	-249.72	6,260.52	0.63	0.19	-0.60	
17,942.00	87.69	178.70	11,720.28	-6,349.50	-248.86	6,349.50	3.32	-2.87	-1.69	
18,032.00	87.78	178.26	11,723.84	-6,439.39	-246.48	6,439.39	0.50	0.10	-0.49	
18,121.00	88.26	178.26	11,726.91	-6,528.30	-243.78	6,528.30	0.54	0.54	0.00	
18,211.00	89.36	177.65	11,728.78	-6,618.22	-240.56	6,618.22	1.40	1.22	-0.68	
18,300.00	90.07	178.53	11,729.22	-6,707.17	-237.60	6,707.17	1.27	0.80	0.99	
18,390.00	89.54	178.09	11,729.53	-6,797.13	-234.94	6,797.13	0.77	-0.59	-0.49	
18,479.00	90.95	178.26	11,729.15	-6,886.08	-232.11	6,886.08	1.60	1.58	0.19	
18,569.00	89.32	181.16	11,728.94	-6,976.07	-231.65	6,976.07	3.70	-1.81	3.22	

Company:	ASCENT ENERGY	Local Co-ordinate Reference:	Well TOQUE STATE COM #701H
Project:	LEA COUNTY, NEW MEXICO (NAD 83)	TVD Reference:	GE: 3794' + KB: 25' @ 3819.00usft (Precision 553)
Site:	SEC. 6 T21S R33E N.M.P.M.	MD Reference:	GE: 3794' + KB: 25' @ 3819.00usft (Precision 553)
Well:	TOQUE STATE COM #701H	North Reference:	True
Wellbore:	JOB # 2019-441-553	Survey Calculation Method:	Minimum Curvature
Design:	SURVEYS	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)	
18,658.00	89.58	180.99	11,729.79	-7,065.05	-233.32	7,065.05	0.35	0.29	-0.19	
18,748.00	89.36	180.37	11,730.62	-7,155.04	-234.39	7,155.04	0.73	-0.24	-0.69	
18,837.00	89.58	179.93	11,731.45	-7,244.03	-234.63	7,244.03	0.55	0.25	-0.49	
18,927.00	89.10	179.23	11,732.48	-7,334.02	-233.97	7,334.02	0.94	-0.53	-0.78	
19,016.00	88.88	179.23	11,734.05	-7,423.00	-232.77	7,423.00	0.25	-0.25	0.00	
19,105.00	89.05	178.97	11,735.66	-7,511.97	-231.37	7,511.97	0.35	0.19	-0.29	
19,195.00	89.19	178.97	11,737.04	-7,601.95	-229.75	7,601.95	0.16	0.16	0.00	
19,284.00	89.32	179.14	11,738.20	-7,690.93	-228.29	7,690.93	0.24	0.15	0.19	
19,287.91	89.32	179.14	11,738.25	-7,694.84	-228.23	7,694.84	0.00	0.00	0.00	
CROSS 100' SETBACK										
19,333.00	89.32	179.14	11,738.78	-7,739.92	-227.55	7,739.92	0.00	0.00	0.00	
PTB TD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
KOP - TOQUE STATE C	0.00	0.00	11,177.61	100.77	-230.03	549,238.91	762,784.70	32° 30' 28.322052 N	103° 36' 53.928609 W	
- hit/miss target										
- Shape										
- actual wellpath misses target center by 25.79usft at 11199.39usft MD (11175.70 TVD, 81.19 N, -213.36 E)										
- Point										
HZ LP - TOQUE STATE	0.00	0.00	11,655.00	-368.28	-230.04	548,769.89	762,787.86	32° 30' 23.680963 N	103° 36' 53.928613 W	
- actual wellpath misses target center by 55.01usft at 11961.15usft MD (11648.21 TVD, -375.75 N, -175.96 E)										
- Point										
BHL - TOQUE STATE C	0.00	0.00	11,785.56	-7,745.39	-229.41	541,393.21	762,838.25	32° 29' 10.686384 N	103° 36' 53.920431 W	
- actual wellpath misses target center by 47.13usft at 19333.00usft MD (11738.78 TVD, -7739.92 N, -227.55 E)										
- Point										



Total Directional Services

Survey Report



Company:	ASCENT ENERGY	Local Co-ordinate Reference:	Well TOQUE STATE COM #701H
Project:	LEA COUNTY, NEW MEXICO (NAD 83)	TVD Reference:	GE: 3794' + KB: 25' @ 3819.00usft (Precision 553)
Site:	SEC. 6 T21S R33E N.M.P.M.	MD Reference:	GE: 3794' + KB: 25' @ 3819.00usft (Precision 553)
Well:	TOQUE STATE COM #701H	North Reference:	True
Wellbore:	JOB # 2019-441-553	Survey Calculation Method:	Minimum Curvature
Design:	SURVEYS	Database:	EDM 5000.15 Single User Db

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,592.09	1,592.00	Rustler		0.00	180.00	
1,923.09	1,923.00	Salado		0.00	180.00	
3,314.93	3,305.00	Base Salado Salts		0.00	180.00	
3,534.05	3,520.00	Yates		0.00	180.00	
3,854.26	3,835.00	Captian Reef		0.00	180.00	
5,619.19	5,596.00	Delaware Sands		0.00	180.00	
5,954.25	5,931.00	Cherry Canyon		0.00	180.00	
7,073.42	7,050.00	Brushy Canyon		0.00	180.00	
8,814.51	8,791.00	Bone Spring Lime		0.00	180.00	
8,978.52	8,955.00	Avalon		0.00	180.00	
9,190.53	9,167.00	Leonard B		0.00	180.00	
9,830.58	9,807.00	1st Bone Spring Sand		0.00	180.00	
10,130.59	10,107.00	2nd Bone Spring Carb		0.00	180.00	
10,386.60	10,363.00	2nd Bone Spring Sand		0.00	180.00	
10,921.66	10,898.00	3rd Bone Spring Carb		0.00	180.00	
11,318.96	11,294.00	3rd Bone Spring Sand		0.00	180.00	
11,634.75	11,565.00	Wolfcamp A		0.00	180.00	
11,650.27	11,574.00	WC Y		0.00	180.00	
11,720.31	11,610.00	WC X		0.00	180.00	

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,710.00	1,709.91	-8.42	-8.23	13 3/8" SFC CSG PNT	
5,500.00	5,476.82	119.96	-235.64	9 5/8" INT #1 CSG PNT	
11,193.00	11,169.32	81.47	-213.54	KOP	
11,479.18	11,448.32	26.34	-195.38	CROSS 100' SETBACK	
11,716.00	11,608.06	-138.41	-159.90	7" INT #2 CSG PNT	
11,908.00	11,649.24	-323.13	-168.59	HZ LP	
19,287.91	11,738.25	-7,694.84	-228.23	CROSS 100' SETBACK	
19,333.00	11,738.78	-7,739.92	-227.55	PTB TD	

Checked By: _____	Approved By: _____	Date: _____
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