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District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

RECEIVED
State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
District Office
South St. Francis
Santa Fe, NM 87505
RECEIVED
DISTRICT II-ARTESIA O.C.D.
DISTRICT II-ARTESIA O.C.D.

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office
☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT AS-DRILLED PLAT

¹ API Number 30-015- 45134	² Pool Code 97020	³ Pool Name HACKBERRY; BONE SPRING, NW
⁴ Property Code 322180	⁵ Property Name BUTTERCUP 27-34 FEDERAL	⁶ Well Number 2H
⁷ OGRID No. 005380	⁸ Operator Name XTO ENERGY, INC.	⁹ Elevation 3,297'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	22	19 S	30 E		1,329	SOUTH	2,380	EAST	EDDY

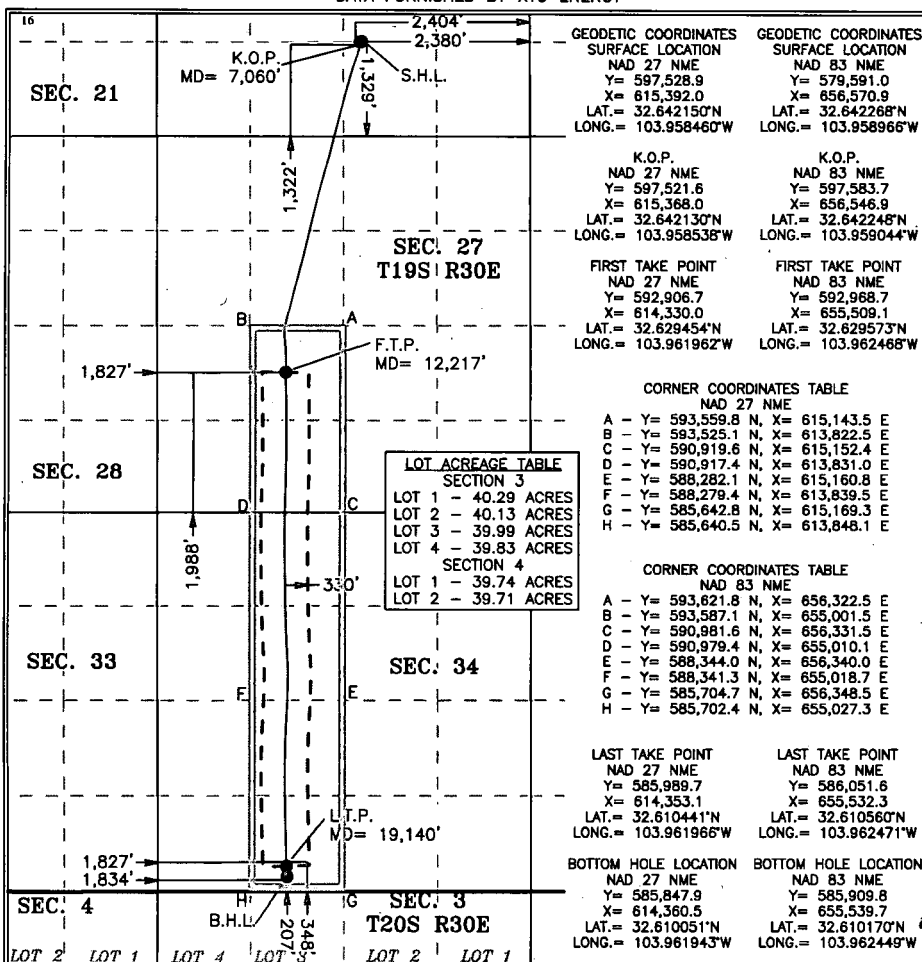
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	34	19 S	30 E		207	SOUTH	1,834	WEST	EDDY

¹² Dedicated Acres 240	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

NOTE: AS-DRILLED BOTTOM HOLE PLOTTED FROM
DATA FURNISHED BY XTO ENERGY



¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature: Cheryl Rowell
Date: 12/19/19

Printed Name: Cheryl Rowell

E-mail Address: cheryl_rowell@xtoenergy.com

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey: 12-18-2019

Signature and Seal of Professional Surveyor:

MARK DILLON HARP 23786
Certificate Number



AW/JC 2017091479

Revised SHL & BHL
for Drill Island
Slots/PAD Adjustments
AS Drilled.

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DEC 26 2019

Intent ☐ As Drilled ☒

DISTRICT 7 - ARTESIA O.C.D.

API # 30-015-45134		
Operator Name: XTO ENERGY INC.	Property Name: BUTTECUP 27-34 FEDERAL	Well Number 2H

Kick Off Point (KOP)

UL J	Section 22	Township 19S	Range 30E	Lot	Feet 1322	From N/S FSL	Feet 2404	From E/W FEL	County EDDY
Latitude 32.642248					Longitude 103.959044			NAD 83	

First Take Point (FTP)

UL K	Section 27	Township 19S	Range 30E	Lot	Feet 1988	From N/S FSL	Feet 1827	From E/W FWL	County EDDY
Latitude 32.629573					Longitude 103.962468			NAD 83	

Last Take Point (LTP)

UL N	Section 34	Township 19S	Range 30E	Lot	Feet 348	From N/S FSL	Feet 1827	From E/W FWL	County EDDY
Latitude 32.610560					Longitude 103.962471			NAD 83	

Is this well the defining well for the Horizontal Spacing Unit?

☒ YES

Is this well an infill well?

☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018



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DEC 26 2019

DISTRICT/ARTESIAO.C.D.

5D Survey Report

XTO Energy

Field Name: *Eddy Co., NM (NAD 27 NME)*
Site Name: *Buttercup 27-34 Federal Pad*
Well Name: *Buttercup 27-34 Federal #2H*
Survey: *Definitive survey*

2 January 2019





Buttercup 27-34 Federal #2H

Field Name: Eddy Co., NM (NAD 27 NME)	Map Units: US ft		Company Name: XTO Energy	
	Vertical Reference Datum (VRD): Mean Sea Level			
	Projected Coordinate System: NAD27 / New Mexico East			
	Comment:			
Site: Buttercup 27-34 Federal Pad	Units: US ft	North Reference: Grid	Convergence Angle: 0.20	
	Position:	Northing: 597581.00 US ft	Latitude: 32° 38' 32.25"	
		Easting: 615405.80 US ft	Longitude: -103° 57' 30.29"	
	Elevation above MSL: 3296.00 US ft		Comment: Eddy Co., NM	
Slot: Buttercup 27-34 Federal #2H	Position (Relative to Site Centre)			
	+N/-S: -52.10 US ft	Northing: 597528.90 US ft	Latitude: 32° 38' 31.74"	
	+E/-W: -13.80 US ft	Easting: 615392.00 US ft	Longitude: -103° 57' 30.46"	
	Elevation above MSL: 3297.00 US ft		Comment:	
Well: Buttercup 27-34 Federal #2H	Type: Main well		UWI:	
	File Number:	Comment: Nabors F26		
	Closure Distance: 11726.5 US ft		Closure Azimuth: 185.05°	
	Vertical Section: Position of Origin (Relative to Slot centre)			
	+N/-S: -0.00 US ft	+E/-W: 0.00 US ft	Az: 179.82°	

Drill floor: Survey Name: Definitive Survey

Rig Height (Well TVD Reference): Elevation above MSL: 3327.50 US ft **Inclination:** 0.00° **Azimuth:** 0.00°
30.50 US ft

Survey Name: Definitive Survey

Date: 10/Oct/2018 **Survey Tool:** See Survey **Comment:** **Company:**
Tool Ranges below.

Magnetic Model:

Model Name: bggm2018 **Date:** 25/Nov/2018 **Field Strength:** 48059.9 nT **Declination:** 7.06° **Dip:** 60.34°

Tie Point:

MD: 0.00 US ft **Inclination:** 0.00° **Azimuth:** 0.00° **TVD:** -0.00 US ft **North Offset:** -0.00 US ft **East Offset:** 0.00 US ft

Survey Tool Ranges:

Name	Start MD(USFt)	End MD(USFt)	Source Survey
MWD	0.00	1426.00	WellBenders
MWD	1426.00	3998.00	WFT MWD_1
MWD	3998.00	6734.00	WFT MWD_2

5D Survey Report

Survey Tool Ranges:			
Name	Start MD(usft)	End MD(usft)	Source Survey
MWD	6734.00	6968.00	WFT MWD_3
MWD	6968.00	8282.00	WFT MWD_4
MWD	8282.00	11527.00	WFT MWD_5
MWD	11527.00	16896.00	WFT MWD_6
MWD	16896.00	19282.00	WFT MWD_9

Casing Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)									
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	Name
1550.00	2.19	110.10	1548.97	-1778.53	-40.06	-3.57	597488.84	615388.43	13 3/8 in
4080.00	2.02	310.39	4076.91	749.41	2.91	-18.88	597531.81	615373.12	9 5/8 in

Wellpath created using minimum curvature.

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
0.00	0.00	0.00	-0.00	-3327.50	-0.00	-0.00	0.00	597528.90	615392.00	0.00	
140.00	1.20	172.40	139.99	-3187.51	1.45	-1.45	0.19	597527.45	615392.19	0.86	
203.00	1.40	212.90	202.97	-3124.53	2.75	-2.75	-0.14	597526.15	615391.86	1.46	
295.00	2.10	215.90	294.93	-3032.57	5.06	-5.06	-1.74	597523.84	615390.26	0.77	
388.00	2.40	201.20	387.86	-2939.64	8.25	-8.26	-3.44	597520.64	615388.56	0.70	
406.00	2.50	263.00	405.85	-2921.65	8.64	-8.66	-3.97	597520.24	615388.03	13.98	
501.00	2.60	213.20	500.76	-2826.74	10.69	-10.71	-7.20	597518.19	615384.80	2.26	
561.00	2.30	209.80	560.71	-2766.79	12.87	-12.90	-8.55	597516.00	615383.45	0.56	
655.00	2.40	206.20	654.63	-2672.87	16.27	-16.30	-10.35	597512.60	615381.65	0.19	
751.00	2.90	206.70	750.53	-2576.97	20.23	-20.27	-12.33	597508.63	615379.67	0.52	
774.00	3.00	209.50	773.50	-2554.00	21.28	-21.32	-12.89	597507.58	615379.11	0.76	
868.00	3.50	210.00	867.34	-2460.16	25.89	-25.94	-15.53	597502.96	615376.47	0.53	
957.00	1.70	182.40	956.25	-2371.25	29.56	-29.61	-16.95	597499.29	615375.05	2.41	
1047.00	1.40	146.70	1046.22	-2281.28	31.82	-31.87	-16.40	597497.03	615375.60	1.10	
1142.00	1.40	134.20	1141.19	-2186.31	33.60	-33.65	-14.93	597495.25	615377.07	0.32	
1284.00	1.50	128.70	1283.15	-2044.35	35.98	-36.02	-12.24	597492.88	615379.76	0.12	
1332.00	1.80	120.80	1331.13	-1996.37	36.76	-36.80	-11.10	597492.10	615380.90	0.78	
1426.00	2.30	112.80	1425.07	-1902.43	38.26	-38.28	-8.09	597490.62	615383.91	0.61	
1550.00	2.19	110.10	1548.97	-1778.53	40.05	-40.06	-3.57	597488.84	615388.43	0.12	Tie On WellBenders
1630.00	2.13	108.22	1628.92	-1698.58	41.05	-41.05	-0.72	597487.85	615391.28	0.12	13 3/8 in First WFT SVY
1725.00	1.19	115.15	1723.87	-1603.63	42.03	-42.03	1.85	597486.87	615393.85	1.01	
1820.00	0.63	287.10	1818.87	-1508.63	42.30	-42.29	2.25	597486.61	615394.25	1.91	
1914.00	1.61	291.10	1912.85	-1414.65	41.67	-41.66	0.52	597487.24	615392.52	1.05	
2008.00	2.45	285.22	2006.79	-1320.71	40.65	-40.66	-2.65	597488.24	615389.35	0.92	
2102.00	3.95	286.35	2100.64	-1226.86	39.20	-39.22	-7.70	597489.68	615384.30	1.60	
2196.00	4.92	286.55	2194.36	-1133.14	37.12	-37.16	-14.67	597491.74	615377.33	1.03	
2290.00	3.66	282.81	2288.09	-1039.41	35.28	-35.35	-21.46	597493.55	615370.54	1.37	
2385.00	2.22	248.70	2382.97	-944.53	35.26	-35.35	-26.13	597493.55	615365.87	2.32	
2479.00	1.12	217.90	2476.93	-850.57	36.64	-36.73	-28.39	597492.17	615363.61	1.47	
2573.00	1.22	77.53	2570.93	-756.57	37.15	-37.24	-27.98	597491.66	615364.02	2.34	
2668.00	2.39	47.16	2665.88	-661.62	35.59	-35.68	-25.54	597493.22	615366.46	1.55	
2762.00	3.23	22.58	2759.77	-567.73	31.82	-31.90	-23.08	597497.00	615368.92	1.54	
2857.00	2.70	16.59	2854.64	-472.86	27.21	-27.28	-21.42	597501.62	615370.58	0.65	
2951.00	2.52	341.83	2948.55	-378.95	23.13	-23.20	-21.43	597505.70	615370.57	1.67	
3046.00	2.79	322.46	3043.45	-284.05	19.30	-19.38	-23.49	597509.52	615368.51	0.98	
3141.00	2.04	338.50	3138.36	-189.14	15.89	-15.97	-25.52	597512.93	615366.48	1.06	
3235.00	1.77	24.64	3232.32	-95.18	13.01	-13.10	-25.52	597515.80	615366.48	1.61	
3329.00	1.83	56.55	3326.27	-1.23	10.87	-10.95	-23.67	597517.95	615368.33	1.05	
3424.00	1.95	54.00	3421.22	93.72	9.10	-9.16	-21.09	597519.74	615370.91	0.15	
3518.00	2.20	57.00	3515.16	187.66	7.18	-7.24	-18.29	597521.66	615373.71	0.29	
3613.00	2.28	52.77	3610.09	282.59	5.06	-5.10	-15.25	597523.80	615376.75	0.19	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
3707.00	1.22	51.56	3704.04	376.54	3.31	-3.35	-12.98	597525.55	615379.02	1.13	
3802.00	1.00	316.48	3799.03	471.53	2.08	-2.12	-12.76	597526.78	615379.24	1.73	
3896.00	1.60	308.16	3893.01	565.51	0.67	-0.71	-14.36	597528.19	615377.64	0.67	
3989.00	1.75	310.49	3985.97	658.47	-1.06	1.01	-16.46	597529.91	615375.54	0.18	
3998.00	1.89	305.79	3994.96	667.46	-1.24	1.19	-16.68	597530.09	615375.32	2.27	
4080.00	2.02	310.39	4076.91	749.41	-2.97	2.91	-18.88	597531.81	615373.12	0.25	9 5/8 in
4183.00	2.20	315.35	4179.85	852.35	-5.56	5.50	-21.65	597534.40	615370.35	0.25	
4278.00	0.30	250.24	4274.82	947.32	-6.78	6.71	-23.17	597535.61	615368.83	2.20	
4373.00	0.20	221.08	4369.82	1042.32	-6.57	6.50	-23.51	597535.40	615368.49	0.17	
4467.00	0.69	256.85	4463.82	1136.32	-6.32	6.25	-24.17	597535.15	615367.83	0.58	
4562.00	0.45	173.13	4558.81	1231.31	-5.83	5.75	-24.68	597534.65	615367.32	0.82	
4657.00	0.78	134.44	4653.81	1326.31	-5.00	4.92	-24.18	597533.82	615367.82	0.54	
4751.00	0.58	116.53	4747.80	1420.30	-4.34	4.26	-23.29	597533.16	615368.71	0.31	
4845.00	0.44	116.17	4841.80	1514.30	-3.96	3.89	-22.54	597532.79	615369.46	0.15	
4939.00	0.49	97.71	4935.79	1608.29	-3.75	3.68	-21.82	597532.58	615370.18	0.17	
5033.00	0.38	97.23	5029.79	1702.29	-3.65	3.59	-21.11	597532.49	615370.89	0.12	
5127.00	0.36	105.74	5123.79	1796.29	-3.53	3.47	-20.52	597532.37	615371.48	0.06	
5221.00	0.36	73.63	5217.79	1890.29	-3.53	3.47	-19.95	597532.37	615372.05	0.21	
5316.00	0.60	51.96	5312.78	1985.28	-3.92	3.86	-19.27	597532.76	615372.73	0.31	
5410.00	0.44	43.95	5406.78	2079.28	-4.48	4.42	-18.64	597533.32	615373.36	0.19	
5505.00	0.63	31.60	5501.78	2174.28	-5.19	5.13	-18.11	597534.03	615373.89	0.23	
5599.00	0.56	55.34	5595.77	2268.27	-5.89	5.83	-17.46	597534.73	615374.54	0.27	
5694.00	0.79	24.81	5690.76	2363.26	-6.74	6.69	-16.80	597535.59	615375.20	0.44	
5789.00	0.77	215.48	5785.76	2458.26	-6.82	6.77	-16.90	597535.67	615375.10	1.63	
5883.00	1.26	207.90	5879.75	2552.25	-5.39	5.34	-17.75	597534.24	615374.25	0.54	
5978.00	1.43	216.62	5974.72	2647.22	-3.52	3.46	-18.95	597532.36	615373.05	0.28	
6073.00	1.39	234.52	6069.69	2742.19	-1.91	1.84	-20.59	597530.74	615371.41	0.46	
6168.00	1.14	220.39	6164.67	2837.17	-0.52	0.45	-22.14	597529.35	615369.86	0.42	
6262.00	1.33	222.30	6258.65	2931.15	0.99	-1.06	-23.48	597527.84	615368.52	0.21	
6357.00	0.84	145.49	6353.63	3026.13	2.38	-2.45	-23.83	597526.45	615368.17	1.48	
6452.00	0.80	144.49	6448.62	3121.12	3.49	-3.57	-23.05	597525.33	615368.95	0.04	
6546.00	1.75	346.27	6542.61	3215.11	2.63	-2.71	-23.01	597526.19	615368.99	2.67	
6640.00	1.64	330.72	6636.57	3309.07	0.06	-0.14	-24.01	597528.76	615367.99	0.50	
6734.00	0.73	264.87	6730.55	3403.05	-1.06	0.98	-25.26	597529.88	615366.74	1.59	
6828.00	0.87	157.06	6824.55	3497.05	-0.35	0.27	-25.58	597529.17	615366.42	1.38	
6968.00	1.77	165.17	6964.51	3637.01	2.72	-2.80	-24.61	597526.10	615367.39	0.65	
7025.00	2.73	174.24	7021.47	3693.97	4.92	-5.00	-24.25	597523.90	615367.75	1.79	
7057.00	4.51	173.27	7053.40	3725.90	6.93	-7.01	-24.03	597521.89	615367.97	5.57	
7088.00	5.96	189.19	7084.27	3756.77	9.73	-9.81	-24.14	597519.09	615367.86	6.58	
7119.00	9.13	196.00	7115.00	3787.50	13.68	-13.76	-25.08	597515.14	615366.92	10.61	
7150.00	13.03	194.13	7145.42	3817.92	19.43	-19.52	-26.61	597509.38	615365.39	12.63	
7197.00	19.03	191.91	7190.57	3863.07	32.07	-32.16	-29.49	597496.74	615362.51	12.83	
7244.00	21.99	191.55	7234.59	3907.09	48.18	-48.29	-32.83	597480.61	615359.17	6.30	
7291.00	27.48	186.22	7277.26	3949.76	67.59	-67.71	-35.77	597461.19	615356.23	12.60	
7339.00	32.23	188.81	7318.88	3991.38	91.26	-91.38	-38.93	597437.52	615353.07	10.25	
7386.00	35.70	193.38	7357.86	4030.36	116.98	-117.12	-44.03	597411.78	615347.97	9.16	
7433.00	39.21	196.66	7395.17	4067.67	144.54	-144.70	-51.46	597384.20	615340.54	8.59	
7480.00	43.57	198.17	7430.42	4102.92	174.15	-174.34	-60.78	597354.56	615331.22	9.52	
7527.00	47.44	197.63	7463.36	4135.86	206.01	-206.24	-71.07	597322.66	615320.93	8.27	
7574.00	50.69	198.23	7494.15	4166.65	239.75	-240.01	-82.01	597288.89	615309.99	6.98	
7621.00	54.13	200.74	7522.82	4195.32	274.81	-275.11	-94.44	597253.79	615297.56	8.45	
7668.00	59.65	199.80	7548.48	4220.98	311.68	-312.02	-108.07	597216.88	615283.93	11.86	
7715.00	65.79	197.71	7570.02	4242.52	351.18	-351.56	-121.47	597177.34	615270.53	13.65	
7762.00	68.66	197.42	7588.21	4260.71	392.45	-392.87	-134.55	597136.03	615257.45	6.13	
7808.00	71.58	196.92	7603.85	4276.35	433.74	-434.20	-147.31	597094.70	615244.69	6.43	
7839.00	75.43	196.03	7612.65	4285.15	462.21	-462.70	-155.74	597066.20	615236.26	12.72	
7871.00	77.46	195.52	7620.15	4292.65	492.12	-492.64	-164.20	597036.26	615227.80	6.53	
7902.00	77.81	195.39	7626.79	4299.29	521.28	-521.82	-172.27	597007.08	615219.73	1.20	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
7934.00	77.81	195.76	7633.54	4306.04	551.38	-551.95	-180.66	596976.95	615211.34	1.13	
7965.00	78.10	196.26	7640.01	4312.51	580.50	-581.09	-189.03	596947.81	615202.97	1.83	
7997.00	78.18	196.04	7646.59	4319.09	610.55	-611.17	-197.74	596917.73	615194.26	0.72	
8091.00	77.88	195.30	7666.09	4338.59	699.01	-699.71	-222.57	596829.19	615169.43	0.83	
8186.00	77.31	194.97	7686.49	4358.99	788.49	-789.27	-246.80	596739.63	615145.20	0.69	
8282.00	76.17	194.14	7708.51	4381.01	878.86	-879.71	-270.28	596649.19	615121.72	1.46	
8376.00	79.10	194.59	7728.64	4401.14	967.73	-968.65	-293.06	596560.25	615098.94	3.15	
8471.00	78.17	194.71	7747.36	4419.86	1057.76	-1058.76	-316.62	596470.14	615075.38	0.99	
8566.00	78.31	194.77	7766.72	4439.22	1147.63	-1148.70	-340.28	596380.20	615051.72	0.16	
8661.00	78.45	194.63	7785.86	4458.36	1237.56	-1238.71	-363.89	596290.19	615028.11	0.21	
8757.00	78.32	194.50	7805.19	4477.69	1328.50	-1329.72	-387.54	596199.18	615004.46	0.19	
8852.00	77.45	194.47	7825.12	4497.62	1418.36	-1419.65	-410.77	596109.25	614981.23	0.92	
8947.00	76.09	194.51	7846.86	4519.36	1507.82	-1509.19	-433.91	596019.71	614958.09	1.43	
9040.00	75.94	195.78	7869.34	4541.84	1594.85	-1596.30	-457.49	595932.60	614934.51	1.33	
9135.00	76.66	196.16	7891.84	4564.34	1683.51	-1685.03	-482.88	595843.87	614909.12	0.85	
9230.00	76.80	195.81	7913.65	4586.15	1772.31	-1773.92	-508.35	595754.98	614883.65	0.39	
9324.00	77.53	195.71	7934.53	4607.03	1860.44	-1862.12	-533.24	595666.78	614858.76	0.78	
9418.00	80.37	194.91	7952.54	4625.04	1949.34	-1951.10	-557.59	595577.80	614834.41	3.13	
9513.00	80.94	195.22	7967.97	4640.47	2039.78	-2041.62	-581.96	595487.28	614810.04	0.68	
9608.00	78.52	194.36	7984.91	4657.41	2130.07	-2131.99	-605.82	595396.91	614786.18	2.70	
9702.00	77.46	194.17	8004.46	4676.96	2219.11	-2221.09	-628.48	595307.81	614763.52	1.14	
9797.00	76.60	194.23	8025.79	4698.29	2308.78	-2310.84	-651.19	595218.06	614740.81	0.91	
9891.00	77.53	194.29	8046.83	4719.33	2397.50	-2399.63	-673.75	595129.27	614718.25	0.99	
9986.00	78.16	193.97	8066.83	4739.33	2487.49	-2489.69	-696.42	595039.21	614695.58	0.74	
10081.00	78.09	194.04	8086.38	4758.88	2577.62	-2579.90	-718.92	594949.00	614673.08	0.10	
10175.00	78.25	193.91	8105.65	4778.15	2666.83	-2669.18	-741.14	594859.72	614650.86	0.22	
10269.00	78.38	193.82	8124.69	4797.19	2756.13	-2758.55	-763.20	594770.35	614628.80	0.17	
10364.00	77.23	193.57	8144.76	4817.26	2846.28	-2848.76	-785.18	594680.14	614606.82	1.24	
10458.00	76.65	193.83	8166.00	4838.50	2935.17	-2937.72	-806.87	594591.18	614585.13	0.67	
10552.00	76.59	193.87	8187.75	4860.25	3023.89	-3026.51	-828.76	594502.39	614563.24	0.08	
10646.00	76.31	194.07	8209.77	4882.27	3112.50	-3115.19	-850.82	594413.71	614541.18	0.36	
10740.00	77.89	195.88	8230.76	4903.26	3200.94	-3203.70	-874.50	594325.20	614517.50	2.52	
10835.00	78.45	196.06	8250.24	4922.74	3290.25	-3293.09	-900.08	594235.81	614491.92	0.62	
10930.00	78.46	196.77	8269.25	4941.75	3379.45	-3382.38	-926.39	594146.52	614465.61	0.73	
11023.00	77.75	193.99	8288.42	4960.92	3467.11	-3470.11	-950.52	594058.79	614441.48	3.02	
11116.00	76.31	193.66	8309.29	4981.79	3555.04	-3558.11	-972.18	593970.79	614419.82	1.59	
11211.00	77.24	194.18	8331.03	5003.53	3644.73	-3647.87	-994.43	593881.03	614397.57	1.11	
11306.00	77.88	194.54	8351.49	5023.99	3734.53	-3737.74	-1017.43	593791.16	614374.57	0.77	
11400.00	77.96	194.41	8371.16	5043.66	3823.46	-3826.74	-1040.41	593702.16	614351.59	0.16	
11432.00	78.31	193.67	8377.74	5050.24	3853.81	-3857.12	-1048.01	593671.78	614343.99	2.51	
11464.00	78.37	192.93	8384.21	5056.71	3884.29	-3887.62	-1055.22	593641.28	614336.78	2.27	
11495.00	79.10	192.03	8390.27	5062.77	3913.95	-3917.31	-1061.79	593611.59	614330.21	3.69	
11527.00	80.30	191.46	8395.99	5068.49	3944.76	-3948.13	-1068.20	593580.77	614323.80	4.14	
11613.00	78.39	185.78	8411.90	5084.40	4028.24	-4031.65	-1080.87	593497.25	614311.13	6.86	
11660.00	77.52	180.64	8421.72	5094.22	4074.10	-4077.53	-1083.45	593451.37	614308.55	10.85	
11707.00	77.95	175.96	8431.70	5104.20	4120.00	-4123.42	-1082.08	593405.48	614309.92	9.77	
11754.00	78.89	173.64	8441.14	5113.64	4165.86	-4169.27	-1077.91	593359.63	614314.09	5.23	
11802.00	79.88	173.39	8449.98	5122.48	4212.76	-4216.15	-1072.58	593312.75	614319.42	2.13	
11849.00	77.31	175.42	8459.28	5131.78	4258.62	-4261.99	-1068.08	593266.91	614323.92	6.92	
11896.00	77.66	175.83	8469.46	5141.96	4304.38	-4307.74	-1064.58	593221.16	614327.42	1.13	
11991.00	78.24	179.38	8489.30	5161.80	4397.20	-4400.55	-1060.71	593128.35	614331.29	3.71	
12084.00	78.23	180.53	8508.26	5180.76	4488.24	-4491.60	-1060.63	593037.30	614331.37	1.21	
12177.00	79.09	180.57	8526.55	5199.05	4579.42	-4582.78	-1061.51	592946.12	614330.49	0.93	
12271.00	81.08	180.70	8542.73	5215.23	4672.00	-4675.36	-1062.54	592853.54	614329.46	2.12	
12366.00	86.43	180.04	8553.06	5225.56	4766.40	-4769.76	-1063.14	592759.14	614328.86	5.67	
12460.00	89.44	178.49	8556.45	5228.95	4860.32	-4863.68	-1061.94	592665.22	614330.06	3.60	
12555.00	91.68	178.39	8555.52	5228.02	4955.28	-4958.63	-1059.35	592570.27	614332.65	2.36	
12650.00	90.56	178.72	8553.67	5226.17	5050.24	-5053.58	-1056.96	592475.32	614335.04	1.23	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	VS (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
12744.00	88.04	180.14	8554.81	5227.31	5144.22	-5147.56	-1056.02	592381.34	614335.98	3.08	
12839.00	89.30	180.53	8557.02	5229.52	5239.19	-5242.53	-1056.58	592286.37	614335.42	1.39	
12933.00	88.11	179.92	8559.14	5231.64	5333.16	-5336.50	-1056.95	592192.40	614335.05	1.42	
13028.00	89.58	179.65	8561.06	5233.56	5428.14	-5431.48	-1056.59	592097.42	614335.41	1.57	
13123.00	87.69	180.37	8563.32	5235.82	5523.10	-5526.45	-1056.61	592002.45	614335.39	2.13	
13217.00	88.53	179.95	8566.42	5238.92	5617.05	-5620.40	-1056.87	591908.50	614335.13	1.00	
13311.00	89.93	179.57	8567.69	5240.19	5711.04	-5714.39	-1056.47	591814.51	614335.53	1.54	
13405.00	91.54	179.66	8566.48	5238.98	5805.03	-5808.37	-1055.84	591720.53	614336.16	1.72	
13499.00	90.56	180.92	8564.76	5237.26	5899.00	-5902.35	-1056.32	591626.55	614335.68	1.70	
13593.00	91.75	181.52	8562.86	5235.36	5992.96	-5996.31	-1058.32	591532.59	614333.68	1.42	
13688.00	89.79	181.17	8561.59	5234.09	6087.91	-6091.27	-1060.55	591437.63	614331.45	2.10	
13782.00	90.56	181.30	8561.30	5233.80	6181.88	-6185.25	-1062.57	591343.65	614329.43	0.83	
13876.00	91.89	181.16	8559.29	5231.79	6275.83	-6279.20	-1064.59	591249.70	614327.41	1.42	
13971.00	90.77	181.70	8557.08	5229.58	6370.76	-6374.14	-1066.96	591154.76	614325.04	1.31	
14065.00	92.03	182.18	8554.79	5227.29	6464.67	-6468.08	-1070.14	591060.84	614321.86	1.43	
14159.00	91.12	181.43	8552.20	5224.70	6558.57	-6561.98	-1073.10	590966.92	614318.90	1.25	
14254.00	89.72	180.26	8551.51	5224.01	6653.55	-6656.96	-1074.50	590871.94	614317.50	1.92	
14348.00	91.40	180.79	8550.59	5223.09	6747.54	-6750.95	-1075.36	590777.95	614316.64	1.87	
14442.00	89.86	180.23	8549.56	5222.06	6841.52	-6844.94	-1076.20	590683.96	614315.80	1.74	
14536.00	87.69	179.17	8551.56	5224.06	6935.49	-6938.91	-1075.71	590589.99	614316.29	2.57	
14630.00	89.16	179.49	8554.15	5226.65	7029.45	-7032.86	-1074.61	590496.04	614317.39	1.60	
14724.00	91.47	179.43	8553.63	5226.13	7123.44	-7126.85	-1073.72	590402.05	614318.28	2.46	
14819.00	93.29	179.53	8549.69	5222.19	7218.35	-7221.76	-1072.86	590307.14	614319.14	1.92	
14913.00	91.82	179.08	8545.50	5218.00	7312.25	-7315.66	-1071.72	590213.24	614320.28	1.64	
15007.00	90.21	179.12	8543.83	5216.33	7406.23	-7409.63	-1070.25	590119.27	614321.75	1.71	
15101.00	92.17	179.17	8541.88	5214.38	7500.20	-7503.59	-1068.85	590025.31	614323.15	2.09	
15196.00	90.35	179.69	8539.79	5212.29	7595.17	-7598.56	-1067.90	589930.34	614324.10	1.99	
15290.00	91.61	179.55	8538.18	5210.68	7689.15	-7692.54	-1067.28	589836.36	614324.72	1.35	
15385.00	91.33	178.75	8535.75	5208.25	7784.11	-7787.50	-1065.87	589741.40	614326.13	0.89	
15479.00	88.95	178.63	8535.52	5208.02	7878.09	-7881.47	-1063.72	589647.43	614328.28	2.54	
15572.00	90.63	178.68	8535.86	5208.36	7971.06	-7974.44	-1061.54	589554.46	614330.46	1.81	
15667.00	91.40	178.42	8534.17	5206.67	8066.02	-8069.39	-1059.13	589459.51	614332.87	0.86	
15762.00	88.88	178.15	8533.94	5206.44	8160.98	-8164.34	-1056.29	589364.56	614335.71	2.67	
15856.00	89.09	177.64	8535.61	5208.11	8254.91	-8258.26	-1052.84	589270.64	614339.16	0.59	
15951.00	90.49	177.25	8535.95	5208.45	8349.83	-8353.16	-1048.60	589175.74	614343.40	1.53	
16045.00	91.96	177.05	8533.95	5206.45	8443.70	-8447.02	-1043.93	589081.88	614348.07	1.58	
16140.00	91.40	177.05	8531.16	5203.66	8538.55	-8541.86	-1039.04	588987.04	614352.96	0.59	
16234.00	90.49	176.07	8529.61	5202.11	8632.38	-8635.67	-1033.40	588893.23	614358.60	1.42	
16329.00	90.28	176.96	8528.97	5201.47	8727.22	-8730.49	-1027.63	588798.41	614364.37	0.96	
16423.00	90.56	179.17	8528.28	5200.78	8821.17	-8824.43	-1024.46	588704.47	614367.54	2.37	
16518.00	90.42	180.29	8527.47	5199.97	8916.17	-8919.43	-1024.01	588609.47	614367.99	1.19	
16612.00	90.49	181.09	8526.72	5199.22	9010.15	-9013.42	-1025.14	588515.48	614366.86	0.85	
16707.00	92.87	182.21	8523.94	5196.44	9105.05	-9108.33	-1027.87	588420.57	614364.13	2.77	
16802.00	94.83	182.01	8517.56	5190.06	9199.76	-9203.04	-1031.36	588325.86	614360.64	2.07	
16896.00	93.63	182.37	8510.63	5183.13	9293.42	-9296.72	-1034.95	588232.18	614357.05	1.33	
17004.00	88.88	183.03	8508.26	5180.76	9401.23	-9404.54	-1040.03	588124.36	614351.97	4.44	
17099.00	90.00	183.10	8509.19	5181.69	9496.07	-9499.40	-1045.11	588029.50	614346.89	1.18	
17193.00	92.03	182.55	8507.53	5180.03	9589.92	-9593.26	-1049.74	587935.64	614342.26	2.24	
17287.00	90.49	182.81	8505.46	5177.96	9683.78	-9687.14	-1054.14	587841.76	614337.86	1.66	
17382.00	92.31	182.68	8503.14	5175.64	9778.62	-9781.99	-1058.68	587746.91	614333.32	1.92	
17476.00	91.12	181.32	8500.32	5172.82	9872.51	-9875.89	-1061.96	587653.01	614330.04	1.92	
17571.00	90.35	181.47	8499.11	5171.61	9967.46	-9970.85	-1064.28	587558.05	614327.72	0.83	
17665.00	89.23	180.73	8499.45	5171.95	10061.44	-10064.83	-1066.08	587464.07	614325.92	1.43	
17760.00	91.12	180.51	8499.16	5171.66	10156.42	-10159.82	-1067.11	587369.08	614324.89	2.00	
17854.00	90.70	179.99	8497.67	5170.17	10250.41	-10253.81	-1067.52	587275.09	614324.48	0.71	
17949.00	88.95	179.53	8497.96	5170.46	10345.40	-10348.81	-1067.12	587180.09	614324.88	1.90	
18043.00	90.21	178.97	8498.65	5171.15	10439.39	-10442.79	-1065.89	587086.11	614326.11	1.47	
18138.00	89.16	179.24	8499.17	5171.67	10534.38	-10537.78	-1064.41	586991.12	614327.59	1.14	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)											Comment
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	
18233.00	90.21	179.22	8499.69	5172.19	10629.37	-10632.77	-1063.13	586896.13	614328.87	1.11	
18328.00	91.19	178.57	8498.53	5171.03	10724.35	-10727.74	-1061.30	586801.16	614330.70	1.24	
18422.00	89.44	178.55	8498.01	5170.51	10818.33	-10821.71	-1058.94	586707.19	614333.06	1.86	
18517.00	87.62	179.36	8500.45	5172.95	10913.28	-10916.65	-1057.20	586612.25	614334.80	2.10	
18612.00	87.41	178.62	8504.57	5177.07	11008.18	-11011.55	-1055.53	586517.35	614336.47	0.81	
18707.00	90.07	178.43	8506.66	5179.16	11103.12	-11106.49	-1053.09	586422.41	614338.91	2.81	
18801.00	91.33	177.56	8505.51	5178.01	11197.07	-11200.42	-1049.80	586328.48	614342.20	1.63	
18897.00	90.84	178.86	8503.69	5176.19	11293.01	-11296.35	-1046.80	586232.55	614345.20	1.45	
18991.00	90.07	178.34	8502.95	5175.45	11386.98	-11390.32	-1044.50	586138.58	614347.50	0.99	
19085.00	90.35	177.83	8502.60	5175.10	11480.94	-11484.27	-1041.36	586044.63	614350.64	0.62	
19179.00	90.63	177.21	8501.80	5174.30	11574.86	-11578.17	-1037.29	585950.73	614354.71	0.72	
19229.00	90.56	176.64	8501.28	5173.78	11624.79	-11628.10	-1034.61	585900.80	614357.39	1.15	Last WFT SVY
19282.00	90.56	176.64	8500.76	5173.26	11677.71	-11681.01	-1031.51	585847.89	614360.49	0.00	PTB

Formation Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										Comment
Name	MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	
Second Bone Spring 'B' Sand	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Rustler	237.54	1.66	214.32	237.50	-3090.00	-3.52	-0.65	597525.38	615391.35	
Top Salt	492.73	2.52	216.98	492.50	-2835.00	-10.41	-6.99	597518.49	615385.01	
Base Salt	1493.48	2.24	111.36	1492.50	-1835.00	-39.29	-5.61	597489.61	615386.39	
Yates	1678.61	1.65	110.78	1677.50	-1650.00	-41.58	0.79	597487.32	615392.79	
Capitan	2309.44	3.30	278.38	2307.50	-1020.00	-35.13	-22.61	597493.77	615369.39	
Delaware	4005.54	1.90	306.24	4002.50	675.00	1.33	-16.88	597530.23	615375.12	
Brushy Canyon	4605.69	0.57	149.92	4602.50	1275.00	5.39	-24.55	597534.29	615367.45	
Bone Spring	6115.82	1.27	228.84	6112.50	2785.00	1.23	-21.37	597530.13	615370.63	
Avalon Sand	6224.84	1.25	221.61	6221.50	2894.00	-0.44	-22.92	597528.46	615369.08	
First Bone Spring Sand	7741.40	67.40	197.55	7580.50	4253.00	-374.65	-128.81	597154.25	615263.19	
Second Bone Spring Limestone	8461.89	78.26	194.70	7745.50	4418.00	-1050.13	-314.35	596478.77	615077.65	
Second Bone Spring Sand	11574.88	79.22	188.31	8404.50	5077.00	-3994.54	-1076.28	593534.36	614315.72	