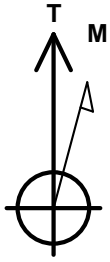
PDC ENERGY

Project: WELD COUNTY, COLORADO (TRUE)
Site: SW SE SEC 14 T7N R66W 6th P.M. (CALIFORNIA)
Well: CALIFORNIA 11C
Wellbore: Wellbore #1
Design: PROPOSAL #1

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
1300.0	0.00	0.00	1300.0	0.0	0.0	0.0	0.0	START NUDGE @2.00°/100FT)
2052.8	15.06	9.23	2044.2	97.1	15.8	29.3	98.3	EOB TO 15.06° INC
6934.9	15.06	9.23	6758.7	1348.8	219.2	407.0	1366.5	KOP (8.00°/100FT)
8033.5	90.18	90.37	7423.0	1521.4	938.1	1143.1	2178.3	HZ LANDING POINT/EP
17364.5	90.18	90.37	7393.0	1461.4	10268.9	10372.4	11509.2	BHL



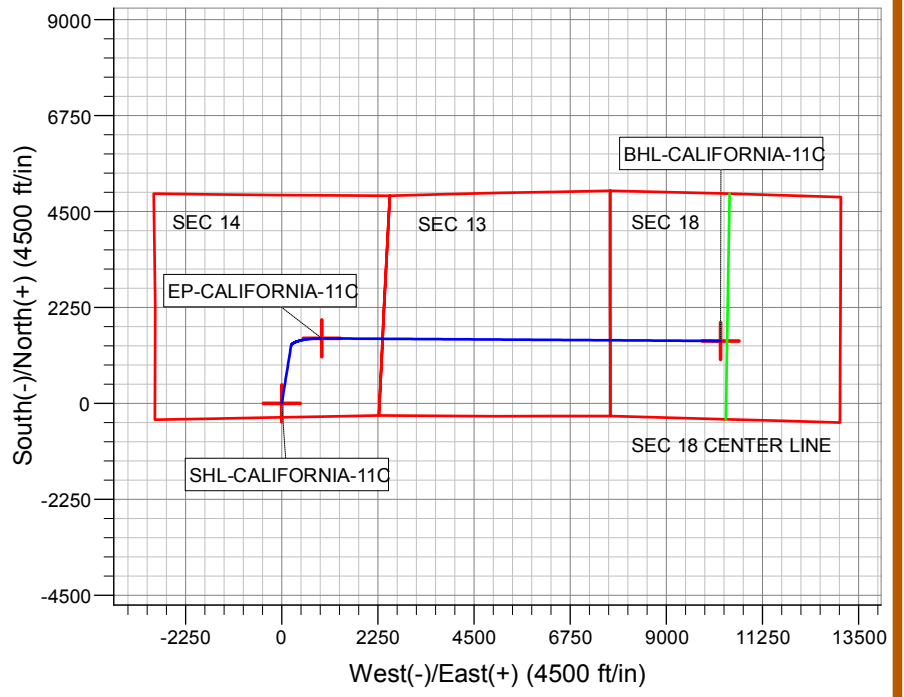
Azimuths to True North
Magnetic North: 8.02°

Magnetic Field
Strength: 52269.4nT
Dip Angle: 66.94°
Date: 4/25/2019
Model: IGRF2015

SHL FOOTAGE: SEC 14			
329	FSL	2287	FEL
BHL FOOTAGE: SEC 18			
1833	FSL	2580	FWL
EP FOOTAGE: SEC 14			
1833	FSL	1421	FEL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
SHL-CALIFORNIA-11C	0.0	0.0	0.0	40.5690365	-104.7435282
BHL-CALIFORNIA-11C	7393.0	1461.4	10268.9	40.5730419	-104.7065641
EP-CALIFORNIA-11C	7423.0	1521.4	938.1	40.5732123	-104.7401512



PDC ENERGY

WELD COUNTY, COLORADO (TRUE)
SW SE SEC 14 T7N R66W 6th P.M. (CALIFORNIA)
CALIFORNIA 11C

Wellbore #1
PROPOSAL #1

Anticollision Report

29 April, 2019

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well CALIFORNIA 11C - Slot CALIFORNIA 11C
Project:	WELD COUNTY, COLORADO (TRUE)	**TVD Reference:**	WELL @ 4923.0ft (Original Well Elev)
Reference Site:	SW SE SEC 14 T7N R66W 6th P.M. (CALIFORNIA)	**MD Reference:**	WELL @ 4923.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	CALIFORNIA 11C	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM
Reference Design:	PROPOSAL #1	**Offset TVD Reference:**	Offset Datum

Reference	PROPOSAL #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum ellipse separation of 1,000.0 ft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 4/29/2019

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	17,364.5	PROPOSAL #1 (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
SW SE SEC 14 T7N R66W 6th P.M. (CALIFORNIA)						
ABDN HZ WAAG 3 N/C - Wellbore #1 - Wellbore #1	17,177.5	7,354.0	2,299.6	2,003.3	7.761	CC
ABDN HZ WAAG 3 N/C - Wellbore #1 - Wellbore #1	17,200.0	7,354.0	2,299.7	2,002.9	7.749	ES
ABDN HZ WAAG 3 N/C - Wellbore #1 - Wellbore #1	17,364.5	7,269.0	2,305.4	2,005.5	7.687	SF
ABDN HZ WAAG 7 N/C - Wellbore #1 - Wellbore #1	13,927.6	10,829.5	3,090.5	2,803.8	10.779	CC
ABDN HZ WAAG 7 N/C - Wellbore #1 - Wellbore #1	14,100.0	10,707.0	3,091.5	2,803.5	10.734	ES
ABDN HZ WAAG 7 N/C - Wellbore #1 - Wellbore #1	17,364.5	7,613.3	3,160.1	2,859.7	10.518	SF
ABDN VERT ACHZIGER 1 - Wellbore #1 - Design #1	15,467.7	7,358.1	1,142.1	764.4	3.024	CC, ES
ABDN VERT ACHZIGER 1 - Wellbore #1 - Design #1	15,500.0	7,358.0	1,142.6	764.6	3.023	SF
ABDN VERT GOODELL 1 - Wellbore #1 - Wellbore #1	0.0	35.5	9,419.9			
ABDN VERT GOODELL 1 - Wellbore #1 - Wellbore #1	7,000.0	6,632.5	9,998.6	9,967.4	320.354	SF
ABDN VERT PAWNEE HILLS BIG BEAR 1 - Wellbore #1	6,070.6	10,928.0	6,492.1	6,377.8	56.829	CC
ABDN VERT PAWNEE HILLS BIG BEAR 1 - Wellbore #1	6,100.0	10,928.0	6,492.1	6,377.7	56.725	ES
ABDN VERT PAWNEE HILLS BIG BEAR 1 - Wellbore #1	7,000.0	10,928.0	6,560.3	6,440.6	54.774	SF
ABDN VERT TRACY #32-23 - Wellbore #1 - Wellbore #1	1,345.6	1,345.5	2,223.5	2,218.0	402.524	CC, ES
ABDN VERT TRACY #32-23 - Wellbore #1 - Wellbore #1	10,500.0	7,313.8	4,721.2	4,643.4	60.697	SF
ABDN VERT TRACY 41-23 - Wellbore #1 - Wellbore #1	1,424.6	1,425.0	1,699.5	1,695.7	442.998	CC, ES
ABDN VERT TRACY 41-23 - Wellbore #1 - Wellbore #1	9,500.0	7,409.3	2,444.5	2,390.1	44.892	SF
CALIFORNIA 10N - Wellbore #1 - PROPOSAL #1	1,200.0	1,200.0	17.0	11.9	3.327	CC
CALIFORNIA 10N - Wellbore #1 - PROPOSAL #1	17,364.5	17,339.7	351.4	-188.9	0.650	Level 1, ES, SF
CALIFORNIA 12N - Wellbore #1 - PROPOSAL #1	1,300.0	1,300.0	17.0	11.5	3.060	CC
CALIFORNIA 12N - Wellbore #1 - PROPOSAL #1	17,364.5	17,203.0	351.6	-182.3	0.659	Level 1, ES, SF
CALIFORNIA 13N - Wellbore #1 - PROPOSAL #1	1,300.0	1,300.0	34.0	28.4	6.108	CC, ES
CALIFORNIA 13N - Wellbore #1 - PROPOSAL #1	17,354.6	17,086.6	686.7	139.1	1.254	Level 3, SF
CALIFORNIA 14N - Wellbore #1 - PROPOSAL #1	1,300.0	1,300.0	51.0	45.5	9.164	CC, ES
CALIFORNIA 14N - Wellbore #1 - PROPOSAL #1	17,364.5	16,948.6	1,041.0	499.4	1.922	SF
CALIFORNIA 15N - Wellbore #1 - PROPOSAL #1	1,300.0	1,300.0	68.0	62.4	12.210	CC, ES
CALIFORNIA 15N - Wellbore #1 - PROPOSAL #1	17,364.5	17,125.2	1,303.3	739.0	2.310	SF
CALIFORNIA 16N - Wellbore #1 - PROPOSAL #1	300.0	300.0	85.0	83.9	79.266	CC
CALIFORNIA 16N - Wellbore #1 - PROPOSAL #1	400.0	399.6	85.3	83.8	56.753	ES
CALIFORNIA 16N - Wellbore #1 - PROPOSAL #1	17,100.0	16,736.0	1,661.2	1,114.4	3.038	SF
CALIFORNIA 1C - Wellbore #1 - PROPOSAL #1	300.0	300.0	186.9	185.9	174.369	CC, ES
CALIFORNIA 1C - Wellbore #1 - PROPOSAL #1	8,500.0	7,557.9	638.3	561.3	8.292	SF
CALIFORNIA 2N - Wellbore #1 - PROPOSAL #1	400.0	400.0	169.9	168.4	111.686	CC, ES
CALIFORNIA 2N - Wellbore #1 - PROPOSAL #1	7,900.0	7,887.4	298.8	241.7	5.232	SF
CALIFORNIA 3C - Wellbore #1 - PROPOSAL #1	7,843.3	7,942.9	49.9	-5.6	0.900	Level 1, CC, ES, SF

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well CALIFORNIA 11C - Slot CALIFORNIA 11C
Project:	WELD COUNTY, COLORADO (TRUE)	**TVD Reference:**	WELL @ 4923.0ft (Original Well Elev)
Reference Site:	SW SE SEC 14 T7N R66W 6th P.M. (CALIFORNIA)	**MD Reference:**	WELL @ 4923.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	CALIFORNIA 11C	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM
Reference Design:	PROPOSAL #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
SW SE SEC 14 T7N R66W 6th P.M. (CALIFORNIA)						
CALIFORNIA 4N - Wellbore #1 - PROPOSAL #1	600.0	600.0	118.9	116.5	49.137	CC, ES
CALIFORNIA 4N - Wellbore #1 - PROPOSAL #1	7,550.0	8,038.8	351.6	299.2	6.708	SF
CALIFORNIA 5N - Wellbore #1 - PROPOSAL #1	700.0	700.0	101.9	99.1	35.509	CC, ES
CALIFORNIA 5N - Wellbore #1 - PROPOSAL #1	7,350.0	8,043.7	655.2	603.8	12.740	SF
CALIFORNIA 6N - Wellbore #1 - PROPOSAL #1	800.0	800.0	85.0	81.6	25.590	CC, ES
CALIFORNIA 6N - Wellbore #1 - PROPOSAL #1	7,150.0	7,988.2	950.4	899.6	18.705	SF
CALIFORNIA 7N - Wellbore #1 - PROPOSAL #1	900.0	900.0	68.0	64.2	18.037	CC
CALIFORNIA 7N - Wellbore #1 - PROPOSAL #1	1,000.0	999.9	68.1	63.9	16.183	ES
CALIFORNIA 7N - Wellbore #1 - PROPOSAL #1	1,400.0	1,394.6	80.3	74.3	13.378	SF
CALIFORNIA 8N - Wellbore #1 - PROPOSAL #1	531.7	532.0	50.1	48.0	23.885	CC, ES
CALIFORNIA 8N - Wellbore #1 - PROPOSAL #1	800.0	796.6	60.6	57.2	17.727	SF
CALIFORNIA 9C - Wellbore #1 - PROPOSAL #1	1,100.0	1,100.0	33.9	29.3	7.271	CC, ES
CALIFORNIA 9C - Wellbore #1 - PROPOSAL #1	17,364.5	17,525.1	664.1	97.8	1.173	Level 2, SF
EXIST HZ (TO BE PLUGGED PDC WELL) TRACY 14P-	2,313.1	2,278.5	90.2	79.9	8.742	CC, ES
EXIST HZ (TO BE PLUGGED PDC WELL) TRACY 14P-	14,782.3	15,109.0	663.2	233.3	1.543	SF
EXIST HZ DALTON #24L-201 - Wellbore #1 - Wellbore #	10,710.9	11,689.0	2,300.0	2,183.5	19.747	CC, ES
EXIST HZ DALTON #24L-201 - Wellbore #1 - Wellbore #	11,800.0	11,689.0	2,544.8	2,406.8	18.439	SF
EXIST HZ DALTON #24L-441 - Wellbore #1 - Wellbore #	10,188.2	11,816.0	2,297.4	2,197.9	23.099	CC
EXIST HZ DALTON #24L-441 - Wellbore #1 - Wellbore #	10,200.0	11,816.0	2,297.4	2,197.8	23.061	ES
EXIST HZ DALTON #24L-441 - Wellbore #1 - Wellbore #	11,400.0	11,816.0	2,597.4	2,462.7	19.283	SF
EXIST HZ DALTON #24Q-441 - Wellbore #1 - Wellbore #	11,375.0	11,797.0	2,293.2	2,157.5	16.902	CC
EXIST HZ DALTON #24Q-441 - Wellbore #1 - Wellbore #	11,500.0	11,797.0	2,296.6	2,155.7	16.307	ES
EXIST HZ DALTON #24Q-441 - Wellbore #1 - Wellbore #	12,300.0	11,797.0	2,472.7	2,303.5	14.618	SF
EXIST HZ DALTON 24Q-241 - Wellbore #1 - Wellbore #1	11,771.7	11,637.0	2,301.1	2,158.3	16.115	CC
EXIST HZ DALTON 24Q-241 - Wellbore #1 - Wellbore #1	11,800.0	11,637.0	2,301.3	2,157.6	16.018	ES
EXIST HZ DALTON 24Q-241 - Wellbore #1 - Wellbore #1	12,700.0	11,637.0	2,481.3	2,308.2	14.337	SF
EXIST HZ DANIELSON 15G-412 - Wellbore #1 - Wellbor	7,050.0	12,034.0	3,917.0	3,840.2	51.029	SF
EXIST HZ DANIELSON 15G-412 - Wellbore #1 - Wellbor	7,063.5	12,034.0	3,916.9	3,840.1	51.038	CC, ES
EXIST HZ MAGNUSON #23I-221 - Wellbore #1 - Wellbo	6,749.6	11,715.0	3,763.5	3,667.9	39.364	CC, ES
EXIST HZ MAGNUSON #23I-221 - Wellbore #1 - Wellbo	7,000.0	11,715.0	3,774.2	3,677.4	38.999	SF
EXIST HZ MAGNUSON #23I-421 - Wellbore #1 - Wellbo	6,936.3	11,863.0	3,465.9	3,378.2	39.480	CC, ES
EXIST HZ MAGNUSON #23I-421 - Wellbore #1 - Wellbo	7,050.0	11,863.0	3,474.4	3,386.2	39.357	SF
EXIST HZ MAGNUSON 23L-201 - Wellbore #1 - Wellbor	6,795.5	11,736.0	2,952.5	2,881.1	41.341	CC
EXIST HZ MAGNUSON 23L-201 - Wellbore #1 - Wellbor	6,800.0	11,736.0	2,952.5	2,881.0	41.336	ES
EXIST HZ MAGNUSON 23L-201 - Wellbore #1 - Wellbor	6,934.9	11,736.0	2,955.8	2,884.1	41.262	SF
EXIST HZ MAGNUSON 23L-421 - Wellbore #1 - Wellbor	6,958.2	12,000.0	2,602.0	2,549.8	49.851	CC, ES
EXIST HZ MAGNUSON 23L-421 - Wellbore #1 - Wellbor	9,000.0	12,000.0	3,733.8	3,649.9	44.514	SF
EXIST HZ THORNTON 14K-441 - Wellbore #1 - Wellbor	6,958.6	6,791.0	2,296.5	2,248.6	47.958	CC, ES
EXIST HZ THORNTON 14K-441 - Wellbore #1 - Wellbor	7,100.0	6,839.4	2,311.9	2,263.3	47.567	SF
EXIST HZ THORNTON 15Y-414 - Wellbore #1 - Wellbor	3,583.4	3,864.0	3,237.3	3,210.8	122.158	CC
EXIST HZ THORNTON 15Y-414 - Wellbore #1 - Wellbor	3,600.0	3,864.0	3,237.3	3,210.7	121.748	ES
EXIST HZ THORNTON 15Y-414 - Wellbore #1 - Wellbor	6,950.0	6,802.0	3,581.9	3,532.5	72.476	SF
EXIST HZ THORNTON 18L-401 - Wellbore #1 - Wellbore	16,178.2	8,926.8	4.8	-78.1	0.057	Level 1, CC, ES, SF
EXIST HZ TRACY #23M-203 - Wellbore #1 - Wellbore #1	2,416.3	2,578.5	781.3	767.9	58.178	CC, ES
EXIST HZ TRACY #23M-203 - Wellbore #1 - Wellbore #1	4,400.0	4,392.0	1,109.4	1,080.3	38.099	SF
EXIST HZ TRACY #23U-203 - Wellbore #1 - Wellbore #1	0.0	0.0	1,096.0			
EXIST HZ TRACY #23U-203 - Wellbore #1 - Wellbore #1	100.0	76.3	1,096.0	1,095.9	10,000.000	ES
EXIST HZ TRACY #23U-203 - Wellbore #1 - Wellbore #1	9,800.0	6,877.0	2,100.9	2,011.8	23.591	SF
EXIST HZ TRACY #31-23H - Wellbore #1 - Wellbore #1	1,400.2	1,395.4	1,026.0	1,021.2	211.335	CC, ES
EXIST HZ TRACY #31-23H - Wellbore #1 - Wellbore #1	9,000.0	6,766.3	2,282.6	2,233.3	46.299	SF
EXIST HZ WAAG 1 N/C - Wellbore #1 - Wellbore #1	16,490.5	8,341.3	1,795.2	1,505.4	6.195	CC

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well CALIFORNIA 11C - Slot CALIFORNIA 11C
Project:	WELD COUNTY, COLORADO (TRUE)	**TVD Reference:**	WELL @ 4923.0ft (Original Well Elev)
Reference Site:	SW SE SEC 14 T7N R66W 6th P.M. (CALIFORNIA)	**MD Reference:**	WELL @ 4923.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	CALIFORNIA 11C	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM
Reference Design:	PROPOSAL #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
SW SE SEC 14 T7N R66W 6th P.M. (CALIFORNIA)						
EXIST HZ WAAG 1 N/C - Wellbore #1 - Wellbore #1	16,500.0	8,335.7	1,795.2	1,505.3	6.193	ES
EXIST HZ WAAG 1 N/C - Wellbore #1 - Wellbore #1	16,700.0	8,245.1	1,801.1	1,508.9	6.163	SF
EXIST HZ WAAG 2 N/C - Wellbore #1 - Wellbore #1	15,916.9	8,513.7	1,946.0	1,664.8	6.919	CC
EXIST HZ WAAG 2 N/C - Wellbore #1 - Wellbore #1	16,000.0	8,448.7	1,946.6	1,664.7	6.907	ES
EXIST HZ WAAG 2 N/C - Wellbore #1 - Wellbore #1	17,300.0	7,216.8	2,010.2	1,715.4	6.818	SF
EXIST HZ WAAG 4 N/C - Wellbore #1 - Wellbore #1	16,546.9	8,181.0	2,434.5	2,147.2	8.472	CC
EXIST HZ WAAG 4 N/C - Wellbore #1 - Wellbore #1	16,600.0	8,147.8	2,434.6	2,146.5	8.449	ES
EXIST HZ WAAG 4 N/C - Wellbore #1 - Wellbore #1	17,364.5	7,391.1	2,472.3	2,169.3	8.159	SF
EXIST HZ WAAG 5 N/C - Wellbore #1 - Wellbore #1	13,532.6	11,002.3	2,599.0	2,320.2	9.324	CC
EXIST HZ WAAG 5 N/C - Wellbore #1 - Wellbore #1	13,600.0	10,966.6	2,599.4	2,320.0	9.306	ES
EXIST HZ WAAG 5 N/C - Wellbore #1 - Wellbore #1	17,364.5	7,177.0	2,640.1	2,340.0	8.797	SF
EXIST HZ WAAG 6 N/C - Wellbore #1 - Wellbore #1	14,812.7	9,796.4	2,951.6	2,665.9	10.330	CC
EXIST HZ WAAG 6 N/C - Wellbore #1 - Wellbore #1	14,900.0	9,741.0	2,952.4	2,665.8	10.302	ES
EXIST HZ WAAG 6 N/C - Wellbore #1 - Wellbore #1	17,364.5	7,321.0	2,974.0	2,675.6	9.966	SF
EXIST VERT HERRELL 1-22 - Wellbore #1 - Wellbore #1	1,307.5	1,308.8	3,831.5	3,827.9	1,086.663	CC, ES
EXIST VERT HERRELL 1-22 - Wellbore #1 - Wellbore #1	7,150.0	6,909.7	4,782.3	4,754.2	170.510	SF
EXIST VERT HERRELL 17-22 - Wellbore #1 - Wellbore #	211.1	219.1	4,670.4	4,669.8	8,203.632	CC
EXIST VERT HERRELL 17-22 - Wellbore #1 - Wellbore #	1,100.0	1,100.0	4,671.1	4,668.2	1,584.813	ES
EXIST VERT HERRELL 17-22 - Wellbore #1 - Wellbore #	7,200.0	6,965.6	5,552.1	5,523.9	197.276	SF
EXIST VERT HERRELL 2-22 - Wellbore #1 - Wellbore #1	0.0	0.0	5,061.9			
EXIST VERT HERRELL 2-22 - Wellbore #1 - Wellbore #1	1,200.0	1,195.2	5,063.2	5,060.0	1,576.951	ES
EXIST VERT HERRELL 2-22 - Wellbore #1 - Wellbore #1	7,200.0	6,984.2	5,838.7	5,809.6	200.324	SF