

30-025 713780

Last Updated: 2/11/2017 08:04 AM

Field Name		Lease Name		Well No.
Igloo		Igloo 19 State		4H
County		State		API No.
Lea		New Mexico		30025423580000
Version		Version Tag		
1		Completed		
GL (ft)	KB (ft)	Section	Township/Block	Range/Survey
3,692.0	3,714.0	19	20S	35E
Operator		Well Status	Latitude	Longitude
Caza Oil and Gas, Inc		Completed	32.551929	-103.494528
Dist. N/S (ft)	N/S Line	Dist. E/W (ft)	E/W Line	Footage From
200	FSL	2000	FEL	Section
Prop Num		Spud Date	Comp. Date	
313780		9/7/2016	11/2/2016	
Additional Information				
OGRID	Well Type	Pool Name and Number	Lease No. and Bond No.	
249099	Horizontal Oil	Lea-Bone Spring; South (37580)		
Prepared By		Updated By	Last Updated	
Steve Morris		Steve Morris	2/11/2017 8:04 AM	

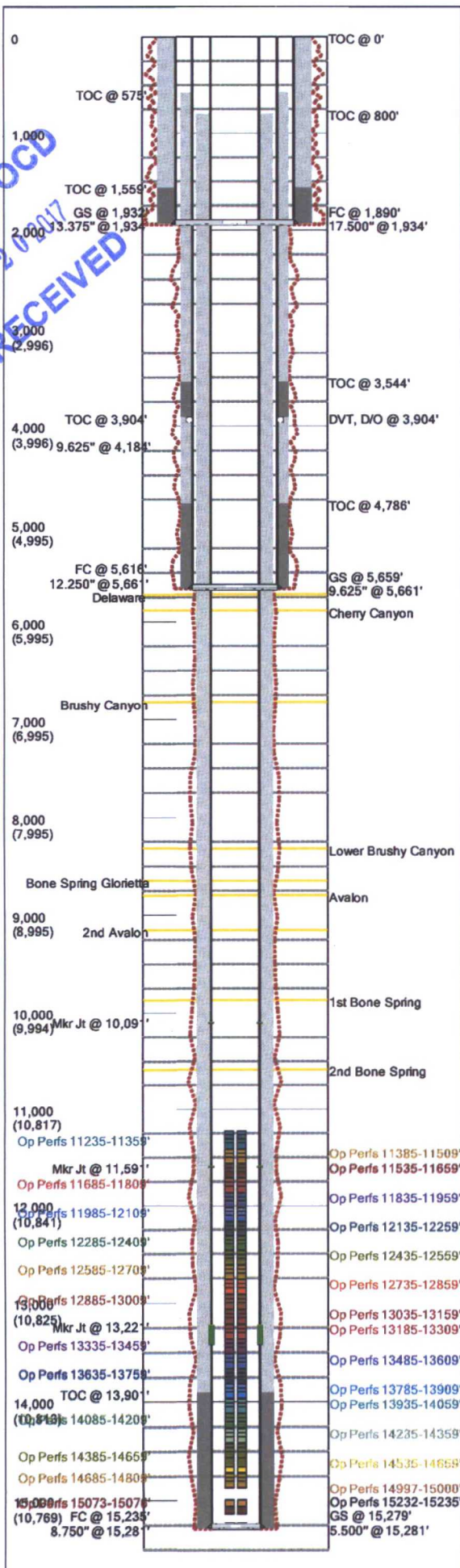
Date	O.D. (in)	Top (MD ft)	Bottom (MD ft)	Comments
9/9/2016	17.500	0	1,934	
9/14/2016	12.250	1,934	5,661	
9/24/2016	8.750	5,661	15,281	

Date	Description	O.D. (in)	Wt (lb/ft)	Grade	Top (MD ft)	Bottom (MD ft)
9/6/2016	Surface Casing	13.375	54.50	J-55	0	1,934
9/14/2016	Intermediate Casing	9.625	40.00	J-55	0	4,184
9/14/2016	Intermediate Casing	9.625	40.00	L-80	4,184	5,661
9/26/2016	Production Casing	5.500	20.00	P-110	0	15,281

C	Date	No. Sx	Csg. O.D. (in)	Top (MD ft)	Bottom (MD ft)	Comments
	9/6/2016	1,200	13.375	0	1,559	Circulated 439 sx to surface
	9/6/2016	350	13.375	1,559	1,934	
	9/15/2016	812	9.625	575	3,544	TOC - 575' temp log
	9/15/2016	150	9.625	3,544	3,904	
	9/15/2016	303	9.625	3,904	4,786	
	9/15/2016	365	9.625	4,786	5,661	
	9/26/2016	835	5.500	800	13,901	TOC 800' temp log
	2/10/2017	750	5.500	13,901	15,281	

Date	Tool Type	O.D. (in)	I.D. (in)	Top (MD ft)	Bottom (MD ft)
9/6/2016	FC	13.375	0.000	1,890	0
9/6/2016	GS	13.375	0.000	1,932	0
9/14/2016	DVT, D/O	9.625	0.000	3,904	0
9/14/2016	FC	9.625	0.000	5,616	0
9/14/2016	GS	9.625	0.000	5,659	0
9/26/2016	Mkr Jt	5.500	0.000	10,091	10,111
9/26/2016	Mkr Jt	5.500	0.000	11,591	11,611
9/26/2016	Mkr Jt	5.500	0.000	13,221	13,421
9/26/2016	FC	5.500	0.000	15,235	0
9/26/2016	GS	5.500	0.000	15,279	0

C	Date	Perf. Status	Formation	OA Top (MD ft)	OA Bottom (MD ft)	Shots
	10/22/2016	Open	2nd Bone Spring	11,235	11,359	128
	10/22/2016	Open	2nd Bone Spring	11,385	11,509	128
	10/22/2016	Open	2nd Bone Spring	11,535	11,659	128
	10/21/2016	Open	2nd Bone Spring	11,685	11,809	128
	10/21/2016	Open	2nd Bone Spring	11,835	11,959	128
	10/21/2016	Open	2nd Bone Spring	11,985	12,109	128
	10/21/2016	Open	2nd Bone Spring	12,135	12,259	128
	10/21/2016	Open	2nd Bone Spring	12,285	12,409	128
	10/20/2016	Open	2nd Bone Spring	12,435	12,559	128
	10/20/2016	Open	2nd Bone Spring	12,585	12,709	128
	10/20/2016	Open	2nd Bone Spring	12,735	12,859	128
	10/20/2016	Open	2nd Bone Spring	12,885	13,009	128



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C	Date	Perf. Status	Formation	OA Top (MD ft)	OA Bottom (MD ft)	Shots
	10/20/2016	Open	2nd Bone Spring	13,035	13,159	128
	10/20/2016	Open	2nd Bone Spring	13,185	13,309	128
	10/20/2016	Open	2nd Bone Spring	13,335	13,459	128
	10/19/2016	Open	2nd Bone Spring	13,485	13,609	128
	10/19/2016	Open	2nd Bone Spring	13,635	13,759	128
	10/19/2016	Open	2nd Bone Spring	13,785	13,909	128
	10/19/2016	Open	2nd Bone Spring	13,935	14,059	128
	10/19/2016	Open	2nd Bone Spring	14,085	14,209	128
	10/19/2016	Open	2nd Bone Spring	14,235	14,359	128
	10/19/2016	Open	2nd Bone Spring	14,385	14,659	128
	10/18/2016	Open	2nd Bone Spring	14,535	14,659	128
	10/18/2016	Open	2nd Bone Spring	14,685	14,809	128
	10/16/2016	Open	2nd Bone Spring	14,997	15,000	30
	10/16/2016	Open	2nd Bone Spring	15,073	15,076	30
	10/13/2016	Open	2nd Bone Spring	15,232	15,235	30

Formation Tops Summary

Formation	Top (TVD ft)	Comments
Delaware	5,719	
Cherry Canyon	5,880	
Brushy Canyon	6,818	
Lower Brushy Canyon	8,312	
Bone Spring Glorietta	8,641	
Avalon	8,792	
2nd Avalon	9,143	
1st Bone Spring	9,863	
2nd Bone Spring	10,536	

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Field Name		Lease Name		Well No.	County		State		API No.		
Igloo		Igloo 19 State		4H	Lea		New Mexico		30025423580000		
Version	Version Tag				Spud Date		Comp. Date		GL (ft)	KB (ft)	
1	Completed				9/7/2016		11/2/2016		3,692.0	3,714.0	
Section	Township/Block		Range/Survey		Dist. N/S (ft)	N/S Line	Dist. E/W (ft)	E/W Line	Footage From		
19	20S		35E		200	FSL	2,000	FEL	Section		
Operator			Well Status			Latitude		Longitude		Prop Num	
Caza Oil and Gas, Inc			Completed			32.551929		-103.494528		313780	
OGRID		Well Type			Pool Name and Number				Lease No. and Bond No.		
249099		Horizontal Oil			Lea-Bone Spring; South (37580)						
Last Updated		Prepared By				Updated By					
02/11/2017 8:04 AM		Steve Morris				Steve Morris					
Additional Information											

Hole Summary

Date	O.D. (in)	Top (MD ft)	Bottom (MD ft)	Comments
9/9/2016	17.500	0	1,934	
9/14/2016	12.250	1,934	5,661	
9/24/2016	8.750	5,661	15,281	

Tubular Summary

Date	Description	No. Jts	O.D. (in)	Wt (lb/ft)	Grade	Top (MD ft)	Bottom (MD ft)	Comments
9/6/2016	Surface Casing	48	13.375	54.50	J-55	0	1,934	
9/14/2016	Intermediate Casing	99	9.625	40.00	J-55	0	4,184	
9/14/2016	Intermediate Casing	34	9.625	40.00	L-80	4,184	5,661	
9/26/2016	Production Casing	364	5.500	20.00	P-110	0	15,281	

Casing Cement Summary

C	Date	No. Sx	Yield (ft3/sk)	Vol. (ft3)	Csg. O.D. (in)	Top (MD ft)	Bottom (MD ft)	Description	Comments
	9/6/2016	1,200	1.74	2,088	13.375	0	1,559	13.5ppg	Circulated 439 sx to surface
	9/6/2016	350	1.34	469	13.375	1,559	1,934	14.8ppg	
	9/15/2016	812	2.10	1,705	9.625	575	3,544	12.6ppg, 6% gel+5% salt(BWOC)+ 6%STE+2/c-41P+.25pps cellof	TOC - 575' temp log
	9/15/2016	150	1.33	200	9.625	3,544	3,904	14.8ppg 1% CaCl2	
	9/15/2016	303	2.10	636	9.625	3,904	4,786	2.6ppg, 6% gel+5% salt(BWOC)+ 6%STE+2/10% c-41P+.25pps c	
	9/15/2016	365	1.33	485	9.625	4,786	5,661	14.8ppg 1% CaCl2	
	9/26/2016	835	2.89	2,413	5.500	800	13,901	11ppg	TOC 800' temp log
	2/10/2017	750	2.16	1,620	5.500	13,901	15,281	14.5ppg	

Tools/Problems Summary

Date	Tool Type	O.D. (in)	I.D. (in)	Top (MD ft)	Bottom (MD ft)	Description	Comments
9/6/2016	Float Collar	13.375	0.000	1,890	0		
9/6/2016	Guide Shoe	13.375	0.000	1,932	0		
9/14/2016	DV tool (drilled out)	9.625	0.000	3,904	0		
9/14/2016	Float Collar	9.625	0.000	5,616	0		
9/14/2016	Guide Shoe	9.625	0.000	5,659	0		
9/26/2016	Marker Joint	5.500	0.000	10,091	10,111		
9/26/2016	Marker Joint	5.500	0.000	11,591	11,611		
9/26/2016	Marker Joint	5.500	0.000	13,221	13,421		
9/26/2016	Float Collar	5.500	0.000	15,235	0		
9/26/2016	Guide Shoe	5.500	0.000	15,279	0		

Perforation Summary

C	Date	Perf. Status	Formation		Comments	
	10/13/2016	Open	2nd Bone Spring		0.5#-5.5# sand in 3,743bbbls of 16# Justice x-link system and Liberty FR system. Pumped 12bbbls Rhino Nanosurfactant between pad stages. Total sand pumped Prolite 40/70- 24,566#. Prolite 20/40- 105,243#. AR-43bpm MaxR-64bpm. AP-6158# Max P-7386#. ISI	
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	15,232	15,235	10	30	120	
C	Date	Perf. Status	Formation		Comments	
	10/16/2016	Open	2nd Bone Spring		1,772bbbls of slurry comprised of 1259bbbls of 16# Justice and and 12bbbls of Rhino NSF. Pumped a total of 15,000# Prolite 40/70 and 104,600# Prolite 20/40 in 0.5#-4.5# increments. AR-26bpm MaxR-36bpm. AP-7015# MaxP-8185#. ISIP-3280#	
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	15,073	15,076	10	30	120	
C	Date	Perf. Status	Formation		Comments	
	10/16/2016	Open	2nd Bone Spring		1855bbbls comprised of 1164bbbls of 16# justice and 12bbbls Rhino NSF. Pumped 16,000# Prolite 40/70 and 99,540# Prolite 20/40 in 0.5#-5.5# increments. AR-17bpm MaxR-35bpm. AP-7655# MaxP-8539#. ISIP-3341#	
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	14,997	15,000	10	30	120	
C	Date	Perf. Status	Formation		Comments	

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C	Date	Perf. Status	Formation	Comments		
	10/18/2016	Open	2nd Bone Spring	2,437bbls comprised of 1577bbls 16# justice system and 12bbls of Rhino NSF. Pumped a total of 25,000# of Prolite 40/70 and 91,480# of Prolite 20/40. Concentrations from 0.5#-4#. With 4# 20/40 sd on well locked up to 8500#. Get back into well and flush		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	14,805	14,809	8	32	60	
	14,765	14,769	8	32	60	
	14,725	14,729	8	32	60	
	14,685	14,689	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/18/2016	Open	2nd Bone Spring	2578bbls 16# justice system and 19bbls of Rhino NSF. Pumped a total of 10,380# of Prolite 40/70 and 225,140# of Prolite 20/40. Concentrations from 0.5#-4#. AR-52bpm MaxR-60bpm AP-5961# MaxP-8475#. ISIP-3,497#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	14,655	14,659	8	32	60	
	14,615	14,619	8	32	60	
	14,575	14,579	8	32	60	
	14,535	14,539	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/19/2016	Open	2nd Bone Spring	3,725bbls comprised of 2,336bbls 16# Justice. Pumped 24bbls Rhino NSF. Broke down w/ 71bbls 15% HCL. Pumped 35,000# Prolite 40/70 & 235,300# Prolite 20/40. AP-6336# MaxP-7830#. AR-75bpm MaxR-82bpm. ISIP-3,889#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	14,505	14,509	8	32	60	
	14,465	14,469	8	32	60	
	14,425	14,429	8	32	60	
	14,385	14,389	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/19/2016	Open	2nd Bone Spring	3,131bbls comprised of 1,939bbls 16# Justice. Pumped 24bbls Rhino NSF. Broke down w/ 71bbls 15% HCL. Pumped 72,720# Prolite 40/70 & 144,240# Prolite 20/40. AP-6680# MaxP-7457#. AR-73bpm, MaxR-82bpm. ISIP-3665#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	14,355	14,359	8	32	60	
	14,315	14,319	8	32	60	
	14,275	14,279	8	32	60	
	14,235	14,239	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/19/2016	Open	2nd Bone Spring	3,711bbls comprised of 2,421bbls 16# Justice. Pumped 21bbls Rhino NSF. Broke down w/ 71bbls 15% HCL. Pumped 33,000# Prolite 40/70 & 234,420# Prolite 20/40. AP-6717# MaxP-7444#. AR-74bpm, MaxR-81bpm. ISIP-3533		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	14,205	14,209	8	32	60	
	14,165	14,169	8	32	60	
	14,125	14,129	8	32	60	
	14,085	14,089	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/19/2016	Open	2nd Bone Spring	3,738bbls comprised of 2,584bbls 16# Justice. Pumped 24bbls Rhino NSF. Broke down w/ 71bbls 15% HCL. Pumped 23,000# Prolite 40/70 & 235,260# Prolite 20/40. AP-6643# MaxP-7436#. AR-74bpm, MaxR-82bpm. ISIP-3581#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	14,055	14,059	8	32	60	
	14,015	14,019	8	32	60	
	13,975	13,979	8	32	60	
	13,935	13,939	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/19/2016	Open	2nd Bone Spring	3,821bbls comprised of 2,606bbls 16# Justice. Pumped 26bbls Rhino NSF. Broke down w/ 71bbls 15% HCL. Pumped 28,380# Prolite 40/70 & 233,960# Prolite 20/40. AP-6665# MaxP-8486#. AR-74bpm, MaxR-81bpm. ISIP-3514#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	13,905	13,909	8	32	60	
	13,865	13,869	8	32	60	
	13,825	13,829	8	32	60	
	13,785	13,789	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/19/2016	Open	2nd Bone Spring	3,735bbls comprised of 2,540bbls 16# Justice. Pumped 24bbls Rhino NSF. Broke down w/ 71bbls 15% HCL. Pumped 27,000# Prolite 40/70 & 229,600# Prolite 20/40. AP-7045# MaxP-8514#. AR-74bpm, MaxR-82bpm. ISIP-3411#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	13,755	13,759	8	32	60	
	13,715	13,719	8	32	60	
	13,675	13,679	8	32	60	
	13,635	13,639	8	32	60	
C	Date	Perf. Status	Formation	Comments		

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C	Date	Perf. Status	Formation	Comments		
	10/19/2016	Open	2nd Bone Spring	3,724bbls comprised of 2,503bbls 16# Justice. Pumped 24bbls Rhino NSF. Brokedown w/ 71bbls 15% HCL. Pumped 75,040# Prolite 40/70 & 229,240# Prolite 20/40. AP-6479# MaxP-8269#, AR-75bpm, MaxR-82bpm. ISIP-3181#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	13,605	13,609	8	32	60	
	13,565	13,569	8	32	60	
	13,525	13,529	8	32	60	
	13,485	13,489	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/20/2016	Open	2nd Bone Spring	3,584bbls comprised of 2,436bbls 16# Justice. Pumped 24bbls Rhino NSF. Brokedown w/ 71bbls 15% HCL. Pumped 40,000# Prolite 40/70 & 230,800# Prolite 20/40. AP-6531# MaxP-8311#, AR-76bpm MaxR-81bpm. ISIP-3,122#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	13,455	13,459	8	32	60	
	13,415	13,419	8	32	60	
	13,375	13,379	8	32	60	
	13,335	13,339	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/20/2016	Open	2nd Bone Spring	3,604bbls comprised of 2,434bbls 16# Justice. Pumped 24bbls Rhino NSF. Brokedown w/ 71bbls 15% HCL. Pumped 40,000# Prolite 40/70 & 231,920# Prolite 20/40. AP-6327# MaxP-8020#, AR-75bpm, MaxR-81bpm. ISIP-3544#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	13,305	13,309	8	32	60	
	13,265	13,269	8	32	60	
	13,225	13,229	8	32	60	
	13,185	13,189	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/20/2016	Open	2nd Bone Spring	3,541bbls comprised of 2,433bbls 16# Justice. Pumped 24bbls Rhino NSF. Brokedown w/ 71bbls 15% HCL. Pumped 37,980# Prolite 40/70 & 230,920# Prolite 20/40. AP-5930# MaxP-7831#, AR-69bpm, MaxR-81bpm. ISIP-3281#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	13,155	13,159	8	32	60	
	13,115	13,119	8	32	60	
	13,075	13,079	8	32	60	
	13,035	13,039	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/20/2016	Open	2nd Bone Spring	3,658bbls comprised of 2,497bbls 14# Justice. Pumped 24bbls Rhino NSF. Brokedown w/ 71bbls 15% HCL. Pumped 31,460# Prolite 40/70 & 232,640# Prolite 20/40. AP-6347# MaxP-7897#, AR-73bpm, MaxR-81bpm. ISIP-3262#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	13,005	13,009	8	32	60	
	12,965	12,969	8	32	60	
	12,925	12,929	8	32	60	
	12,885	12,889	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/20/2016	Open	2nd Bone Spring	3,531bbls comprised of 2,392bbls 16# Justice. Pumped 24bbls Rhino NSF. Brokedown w/ 71bbls 15% HCL. Pumped 35,940# Prolite 40/70 & 233,900# Prolite 20/40. AP-6527# MaxP-7274#, AR-74bpm, MaxR-81bpm. ISIP-3103#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	12,855	12,859	8	32	60	
	12,815	12,819	8	32	60	
	12,775	12,779	8	32	60	
	12,735	12,739	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/20/2016	Open	2nd Bone Spring	3,742bbls comprised of 2,541bbls 16# Justice. Pumped 24bbls Rhino NSF. Brokedown w/ 71bbls 15% HCL. Pumped 35,000# Prolite 40/70 & 230,140# Prolite 20/40. AP-6605# MaxP-7933#, AR-79bpm, MaxR-80bpm. ISIP-3370#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	12,705	12,709	8	32	60	
	12,665	12,669	8	32	60	
	12,625	12,629	8	32	60	
	12,585	12,589	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/20/2016	Open	2nd Bone Spring	5856bbls comprised of 2,370bbls 16# Justice. Pumped 24bbls Rhino NSF. Brokedown w/ 88bbls 15% HCL. Pumped 35,760# Prolite 40/70 & 228,360# Prolite 20/40. AP-6535# MaxP-9832#, AR-77bpm, MaxR-80bpm. ISIP-3958#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	12,555	12,559	8	32	60	
	12,515	12,519	8	32	60	
	12,475	12,479	8	32	60	
	12,435	12,439	8	32	60	
C	Date	Perf. Status	Formation	Comments		

Last Updated: 2/11/2017 08:04 AM

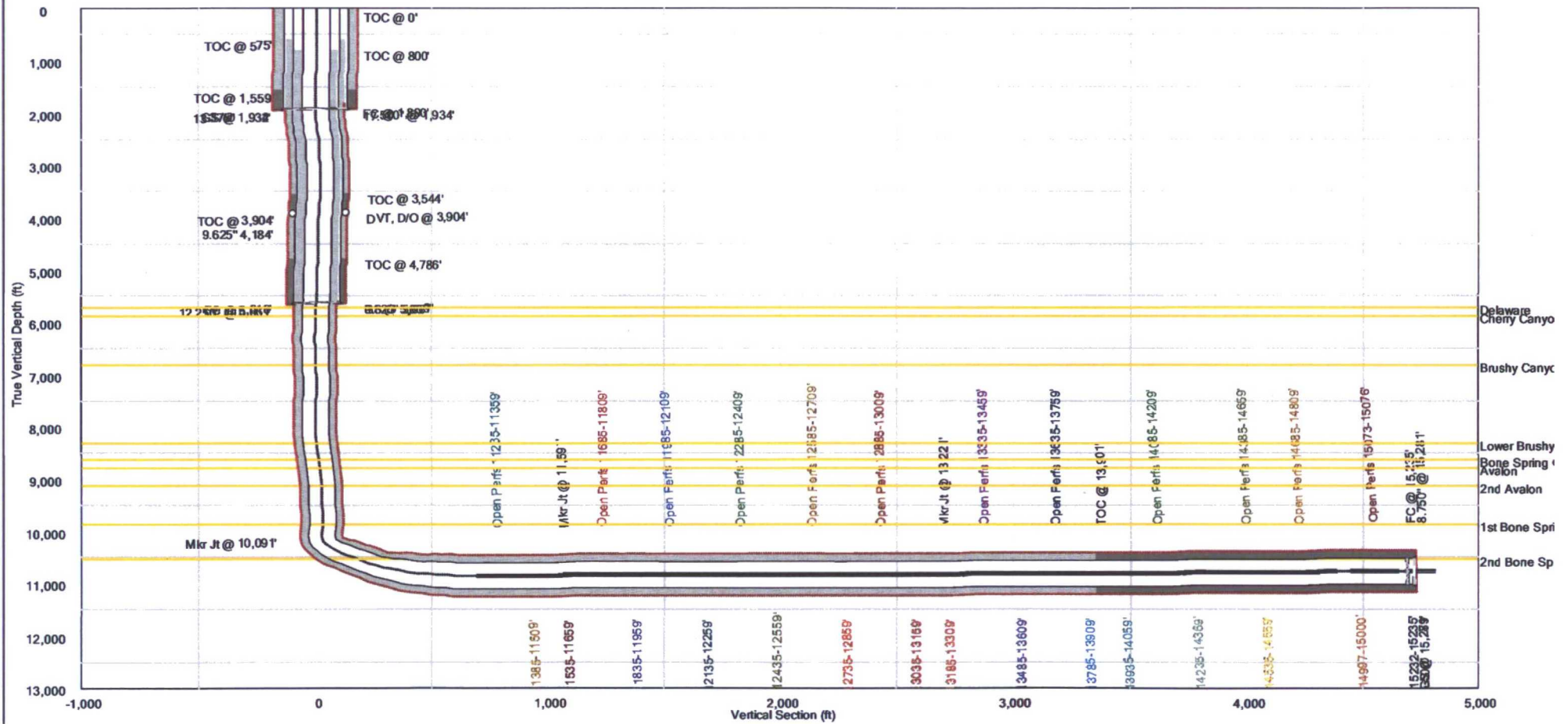
C	Date	Perf. Status	Formation	Comments		
	10/21/2016	Open	2nd Bone Spring	4161bbls comprised of 2,788bbls 16# Justice. Pumped 24bbls Rhino NSF. Brokedown w/ 71bbls 15%HCL. Pumped 31,480# Prolite 40/70 & 233,000# Prolite 20/40. AP-6537# MaxP-7491#, AR-75bpm MaxR-81bpm. ISIP-3,249#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	12,405	12,409	8	32	60	
	12,365	12,369	8	32	60	
	12,325	12,329	8	32	60	
	12,285	12,289	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/21/2016	Open	2nd Bone Spring	3,668bbls comprised of 2,523bbls 16# Justice. Pumped 24bbls Rhino NSF. Brokedown w/ 71bbls 15% HCL. Pumped 33,720# Prolite 40/70 & 231,640# Prolite 20/40. AP-6443# MaxP-7522#, AR-76bpm, MaxR-81bpm. ISIP-3346#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	12,255	12,259	8	32	60	
	12,215	12,219	8	32	60	
	12,175	12,179	8	32	60	
	12,135	12,139	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/21/2016	Open	2nd Bone Spring	3,628bbls comprised of 2,500bbls 16# Justice. Pumped 24bbls Rhino NSF. Brokedown w/ 71bbls 15% HCL. Pumped 33,000# Prolite 40/70 & 229,540# Prolite 20/40. AP-6184# MaxP-7606#, AR-75bpm, MaxR-82bpm. ISIP-3306#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	12,105	12,109	8	32	60	
	12,065	12,069	8	32	60	
	12,025	12,029	8	32	60	
	11,985	11,989	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/21/2016	Open	2nd Bone Spring	3,608bbls comprised of 2,505bbls 16# Justice. Pumped 24bbls Rhino NSF. Brokedown w/ 71bbls 15% HCL. Pumped 35,460# Prolite 40/70 & 228,840# Prolite 20/40. AP-6229# MaxP-6853#, AR-79bpm, MaxR-80bpm. ISIP-#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	11,955	11,959	8	32	60	
	11,915	11,919	8	32	60	
	11,875	11,879	8	32	60	
	11,835	11,839	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/21/2016	Open	2nd Bone Spring	3,659bbls comprised of 2,568bbls 16# Justice. Pumped 24bbls Rhino NSF. Brokedown w/ 71bbls 15% HCL. Pumped 32,480# Prolite 40/70 & 229,780# Prolite 20/40. AP-6103# MaxP-6755#, AR-80bpm, MaxR-80bpm. ISIP-3515#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	11,805	11,809	8	32	60	
	11,765	11,769	8	32	60	
	11,725	11,729	8	32	60	
	11,685	11,689	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/22/2016	Open	2nd Bone Spring	3522bbls comprised of 2,469bbls 16# Justice. Pumped 24bbls Rhino NSF. Brokedown w/ 71bbls 15%HCL. Pumped 25,000# Prolite 40/70 & 227,940# Prolite 20/40. AP-6098# MaxP-6755#. AR-80bpm MaxR-81bpm. ISIP-3,433#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	11,655	11,659	8	32	60	
	11,615	11,619	8	32	60	
	11,575	11,579	8	32	60	
	11,535	11,539	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/22/2016	Open	2nd Bone Spring	3,638bbls comprised of 2,569bbls 16# Justice. Pumped 24bbls Rhino NSF. Brokedown w/ 71bbls 15% HCL. Pumped 31,600# Prolite 40/70 & 231,720# Prolite 20/40. AP-6066# MaxP-6778#, AR-80bpm, MaxR-81bpm. ISIP-3394#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	11,505	11,509	8	32	60	
	11,465	11,469	8	32	60	
	11,425	11,429	8	32	60	
	11,385	11,389	8	32	60	
C	Date	Perf. Status	Formation	Comments		
	10/22/2016	Open	2nd Bone Spring	3,620bbls comprised of 2,532bbls 16# Justice. Pumped 24bbls Rhino NSF. Brokedown w/ 71bbls 15% HCL. Pumped 21,840# Prolite 40/70 & 231,780# Prolite 20/40. AP-6351# MaxP-7509#, AR-70bpm, MaxR-81bpm. ISIP-3752#		
	Top (MD ft)	Bottom (MD ft)	SPF	Shots	Phasing (deg)	Interval Comments
	11,355	11,359	8	32	60	
	11,315	11,319	8	32	60	
	11,275	11,279	8	32	60	
	11,235	11,239	8	32	60	

Formation Top Summary

Last Updated: 2/11/2017 08:04 AM

Formation Name	Top(TVD ft)	Comments
Delaware	5,719	
Cherry Canyon	5,880	
Brushy Canyon	6,818	
Lower Brushy Canyon	8,312	
Bone Spring Glorietta	8,641	
Avalon	8,792	
2nd Avalon	9,143	
1st Bone Spring	9,863	
2nd Bone Spring	10,536	

Field Name		Lease Name		Well No.	County		State	API No.		Version	Version Tag		Spud Date	Comp. Date	G.L. (ft)	K.B. (ft)	
Igloo		Igloo 19 State		4H	Lea		New Mexico	30025423580000		1	Completed		9/7/2016	11/2/2016	3,692.0	3,714.0	
Sec.	Township/Block	Range/Survey	Dist. N/S (ft)	N/S Line	Dist. E/W (ft)	E/W Line	Footage From		Latitude		Longitude		Well Status	PropNum		Operator	
19	20S	35E	200	FSL	2000	FEL			32.551929		-103.494528		Completed	313780		Caza Oil and Gas, Inc	
Last Updated		Prepared By		Updated By		Additional Information											
2/11/2017 8:04:33 AM		Steve Morris		Steve Morris													



Field Name		Lease Name		Well No.	API No.	Version	Version Tag			
Igloo		Igloo 19 State		4H	30025423580000	1	Completed			
Section	Township/Block		Range/Survey		County		State		GL (ft)	KB (ft)
19	20S		35E		Lea		New Mexico		3,692.0	3,714.0
Target N (-S) (ft)		Target E (-W) (ft)		Latitude		Longitude		Operator		Well Status
0		0		32.551929		-103.494528		Caza Oil and Gas, Inc		Completed
Additional Information										

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	Coordinate N (-S) (ft)	Coordinate E (-W) (ft)	DLS (deg/100 ft)
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
252.0	0.1	86.6	252.0	0.0	0.0	0.2	0.04
344.0	0.3	140.1	344.0	-0.2	-0.2	0.5	0.28
436.0	0.3	183.7	436.0	-0.6	-0.6	0.6	0.24
528.0	0.2	184.3	528.0	-1.0	-1.0	0.6	0.11
620.0	0.4	209.3	620.0	-1.4	-1.4	0.4	0.25
712.0	0.3	256.3	712.0	-1.8	-1.8	0.0	0.32
804.0	0.3	165.9	804.0	-2.1	-2.1	-0.2	0.46
896.0	0.3	179.5	896.0	-2.5	-2.5	-0.1	0.08
989.0	0.3	222.0	989.0	-3.0	-3.0	-0.3	0.23
1,080.0	0.1	207.6	1,080.0	-3.2	-3.2	-0.5	0.22
1,172.0	0.2	208.4	1,172.0	-3.4	-3.4	-0.6	0.11
1,267.0	0.2	218.5	1,267.0	-3.7	-3.7	-0.8	0.04
1,362.0	0.1	269.6	1,362.0	-3.8	-3.8	-0.9	0.17
1,456.0	0.1	259.2	1,456.0	-3.8	-3.8	-1.1	0.02
1,551.0	0.1	255.5	1,551.0	-3.9	-3.9	-1.3	0.01
1,646.0	0.1	187.0	1,646.0	-4.0	-4.0	-1.4	0.12
1,741.0	0.5	245.8	1,741.0	-4.2	-4.2	-1.8	0.48
1,835.0	0.6	244.4	1,835.0	-4.6	-4.6	-2.6	0.11
1,941.0	0.8	233.2	1,941.0	-5.3	-5.3	-3.7	0.23
2,034.0	2.3	271.5	2,033.9	-5.6	-5.6	-6.0	1.88
2,129.0	4.9	282.2	2,128.7	-4.7	-4.7	-11.9	2.81
2,223.0	6.7	287.6	2,222.3	-2.2	-2.2	-21.1	2.00
2,318.0	6.2	286.3	2,316.7	0.9	0.9	-31.3	0.55
2,413.0	6.2	287.4	2,411.1	3.9	3.9	-41.1	0.13
2,508.0	5.9	288.0	2,505.6	6.9	6.9	-50.6	0.32
2,604.0	4.5	279.7	2,601.2	9.1	9.1	-59.0	1.65
2,698.0	3.9	274.4	2,694.9	9.9	9.9	-65.9	0.76
2,793.0	3.6	276.1	2,789.7	10.5	10.5	-72.1	0.34
2,888.0	5.0	273.4	2,884.5	11.1	11.1	-79.1	1.49
2,983.0	6.4	277.0	2,979.0	12.0	12.0	-88.5	1.52
3,078.0	3.2	308.3	3,073.7	14.2	14.2	-95.9	4.24
3,172.0	0.3	323.6	3,167.6	16.1	16.1	-98.1	3.10
3,267.0	1.1	138.1	3,262.6	15.6	15.6	-97.6	1.47
3,361.0	0.6	143.8	3,356.6	14.5	14.5	-96.7	0.54
3,456.0	0.6	128.1	3,451.6	13.8	13.8	-96.0	0.17
3,550.0	0.7	138.9	3,545.6	13.1	13.1	-95.3	0.17
3,644.0	0.8	149.7	3,639.6	12.1	12.1	-94.6	0.18
3,739.0	1.0	145.8	3,734.6	10.8	10.8	-93.8	0.22
3,833.0	1.0	141.5	3,828.5	9.5	9.5	-92.8	0.08
3,928.0	1.0	154.3	3,923.5	8.1	8.1	-91.9	0.23
4,023.0	1.1	145.9	4,018.5	6.6	6.6	-91.1	0.19
4,117.0	0.6	152.4	4,112.5	5.4	5.4	-90.3	0.54
4,212.0	0.5	122.8	4,207.5	4.8	4.8	-89.7	0.31
4,307.0	0.6	119.8	4,302.5	4.3	4.3	-89.0	0.11
4,401.0	0.4	160.4	4,396.5	3.7	3.7	-88.4	0.42
4,496.0	0.3	153.8	4,491.5	3.2	3.2	-88.2	0.11
4,591.0	0.4	85.1	4,586.5	3.0	3.0	-87.8	0.42
4,686.0	0.9	87.9	4,681.5	3.1	3.1	-86.7	0.53
4,780.0	0.2	102.8	4,775.5	3.0	3.0	-85.8	0.75
4,874.0	0.4	204.5	4,869.5	2.7	2.7	-85.8	0.51
4,968.0	1.3	190.1	4,963.5	1.4	1.4	-86.1	0.98
5,063.0	0.3	191.3	5,058.4	0.1	0.1	-86.3	1.05
5,158.0	0.4	115.7	5,153.4	-0.3	-0.3	-86.1	0.46
5,252.0	0.4	105.0	5,247.4	-0.6	-0.6	-85.5	0.08
5,347.0	0.4	145.9	5,342.4	-0.9	-0.9	-85.0	0.29

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	Coordinate N (-S) (ft)	Coordinate E (-W) (ft)	DLS (deg/100 ft)
5,442.0	0.8	117.0	5,437.4	-1.5	-1.5	-84.2	0.52
5,536.0	0.9	116.3	5,531.4	-2.1	-2.1	-82.9	0.11
5,583.0	1.2	114.4	5,578.4	-2.5	-2.5	-82.2	0.64
5,704.0	1.1	123.2	5,699.4	-3.6	-3.6	-80.0	0.17
5,798.0	1.0	126.0	5,793.4	-4.6	-4.6	-78.6	0.12
5,893.0	1.0	130.8	5,888.4	-5.7	-5.7	-77.3	0.09
5,988.0	0.9	126.0	5,983.4	-6.6	-6.6	-76.1	0.13
6,083.0	0.9	132.7	6,078.3	-7.6	-7.6	-74.9	0.11
6,178.0	0.8	118.9	6,173.3	-8.4	-8.4	-73.8	0.24
6,273.0	0.7	118.4	6,268.3	-9.0	-9.0	-72.7	0.11
6,368.0	0.3	0.7	6,363.3	-9.0	-9.0	-72.2	0.93
6,462.0	0.4	337.4	6,457.3	-8.5	-8.5	-72.3	0.18
6,557.0	0.4	351.1	6,552.3	-7.8	-7.8	-72.5	0.10
6,652.0	0.6	333.1	6,647.3	-7.1	-7.1	-72.8	0.27
6,746.0	0.7	332.7	6,741.3	-6.1	-6.1	-73.3	0.11
6,841.0	0.9	320.5	6,836.3	-5.0	-5.0	-74.0	0.28
6,936.0	1.0	312.1	6,931.3	-3.9	-3.9	-75.1	0.18
7,031.0	1.0	305.2	7,026.3	-2.9	-2.9	-76.4	0.13
7,126.0	1.2	304.7	7,121.2	-1.8	-1.8	-77.9	0.21
7,220.0	1.0	263.7	7,215.2	-1.4	-1.4	-79.5	0.84
7,314.0	1.4	241.4	7,309.2	-2.0	-2.0	-81.3	0.65
7,409.0	1.5	239.7	7,404.2	-3.2	-3.2	-83.4	0.11
7,502.0	1.4	236.8	7,497.2	-4.4	-4.4	-85.4	0.13
7,597.0	1.4	238.8	7,592.1	-5.6	-5.6	-87.4	0.05
7,692.0	1.5	242.1	7,687.1	-6.8	-6.8	-89.5	0.14
7,787.0	1.6	244.9	7,782.1	-8.0	-8.0	-91.8	0.13
7,977.0	1.6	280.9	7,972.0	-8.6	-8.6	-96.8	0.52
8,167.0	1.6	15.6	8,161.9	-5.5	-5.5	-98.7	1.24
8,356.0	2.0	45.0	8,350.9	-0.7	-0.7	-95.6	0.52
8,545.0	1.5	23.2	8,539.8	3.9	3.9	-92.3	0.44
8,735.0	1.8	4.8	8,729.7	9.2	9.2	-91.1	0.32
8,924.0	1.1	354.5	8,918.6	14.0	14.0	-91.0	0.39
9,110.0	1.2	319.3	9,104.6	17.2	17.2	-92.5	0.38
9,300.0	1.4	288.9	9,294.5	19.5	19.5	-96.0	0.37
9,490.0	0.8	359.3	9,484.5	21.6	21.6	-98.2	0.72
9,679.0	1.0	63.1	9,673.5	23.6	23.6	-96.7	0.51
9,868.0	0.3	157.0	9,862.5	23.9	23.9	-95.0	0.56
10,058.0	0.9	193.2	10,052.5	22.0	22.0	-95.2	0.36
10,107.0	1.0	188.0	10,101.5	21.2	21.2	-95.3	0.27
10,202.0	7.8	11.8	10,196.2	26.7	26.7	-94.1	9.26
10,249.0	14.3	8.7	10,242.3	35.6	35.6	-92.6	13.88
10,297.0	17.1	354.9	10,288.5	48.5	48.5	-92.3	9.69
10,344.0	23.1	350.4	10,332.7	64.5	64.5	-94.5	13.17
10,391.0	28.2	346.5	10,375.0	84.4	84.4	-98.6	11.42
10,438.0	31.5	343.9	10,415.8	107.0	107.0	-104.6	7.54
10,486.0	30.9	348.0	10,456.8	131.1	131.1	-110.7	4.60
10,533.0	31.3	356.5	10,497.1	155.1	155.1	-113.9	9.37
10,581.0	33.4	3.9	10,537.7	180.7	180.7	-113.8	9.33
10,629.0	33.1	11.9	10,577.8	206.7	206.7	-110.2	9.15
10,676.0	32.8	15.0	10,617.3	231.6	231.6	-104.2	3.64
10,724.0	36.8	12.2	10,656.7	258.2	258.2	-97.8	8.97
10,770.0	43.3	11.1	10,691.9	287.2	287.2	-91.9	14.21
10,818.0	49.9	11.7	10,724.8	321.3	321.3	-85.0	13.78
10,863.0	54.4	13.8	10,752.4	356.0	356.0	-77.1	10.66
10,910.0	60.5	14.5	10,777.7	394.4	394.4	-67.4	13.04
10,958.0	63.3	17.6	10,800.3	435.1	435.1	-55.7	8.15
11,006.0	69.9	18.8	10,819.4	476.9	476.9	-41.9	13.94
11,054.0	76.4	17.8	10,833.3	520.5	520.5	-27.5	13.69
11,104.0	81.8	15.2	10,842.7	567.5	567.5	-13.6	11.95
11,140.0	82.9	14.8	10,847.5	602.0	602.0	-4.4	3.25
11,198.0	84.5	13.5	10,853.9	657.9	657.9	9.7	3.55
11,229.0	86.8	13.4	10,856.3	688.0	688.0	16.9	7.43
11,261.0	89.1	12.9	10,857.4	719.1	719.1	24.2	7.36
11,292.0	90.8	12.0	10,857.4	749.4	749.4	30.9	6.20
11,324.0	91.7	9.5	10,856.7	780.8	780.8	36.8	8.30
11,356.0	92.6	7.7	10,855.5	812.4	812.4	41.6	6.29

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	Coordinate N (-S) (ft)	Coordinate E (-W) (ft)	DLS (deg/100 ft)
11,387.0	93.2	5.5	10,854.0	843.2	843.2	45.2	7.35
11,482.0	92.3	0.9	10,849.4	937.9	937.9	50.5	4.93
11,577.0	92.4	1.2	10,845.5	1,032.8	1,032.8	52.2	0.33
11,672.0	90.1	1.9	10,843.4	1,127.7	1,127.7	54.8	2.53
11,767.0	89.5	2.3	10,843.8	1,222.6	1,222.6	58.3	0.76
11,861.0	90.9	1.0	10,843.4	1,316.6	1,316.6	61.0	2.03
11,956.0	90.7	0.4	10,842.1	1,411.6	1,411.6	62.1	0.67
12,050.0	92.0	359.8	10,839.9	1,505.6	1,505.6	62.3	1.52
12,145.0	92.1	360.0	10,836.5	1,600.5	1,600.5	62.1	0.24
12,240.0	91.5	358.5	10,833.5	1,695.4	1,695.4	60.9	1.70
12,334.0	91.5	358.4	10,831.0	1,789.4	1,789.4	58.3	0.11
12,428.0	90.5	357.0	10,829.4	1,883.3	1,883.3	54.6	1.83
12,523.0	90.0	356.4	10,829.0	1,978.1	1,978.1	49.1	0.82
12,618.0	89.9	356.4	10,829.1	2,072.9	2,072.9	43.1	0.11
12,713.0	90.6	356.4	10,828.7	2,167.7	2,167.7	37.2	0.74
12,807.0	91.3	357.0	10,827.1	2,261.6	2,261.6	31.8	0.98
12,902.0	90.4	356.9	10,825.7	2,356.4	2,356.4	26.7	0.95
12,997.0	90.5	356.8	10,824.9	2,451.3	2,451.3	21.5	0.15
13,091.0	90.7	358.1	10,824.0	2,545.2	2,545.2	17.3	1.40
13,186.0	90.5	357.9	10,823.0	2,640.1	2,640.1	14.0	0.30
13,281.0	90.1	357.8	10,822.5	2,735.0	2,735.0	10.4	0.43
13,375.0	91.1	359.4	10,821.5	2,829.0	2,829.0	8.1	2.01
13,470.0	90.8	0.0	10,819.9	2,924.0	2,924.0	7.6	0.71
13,565.0	90.5	0.2	10,818.8	3,019.0	3,019.0	7.8	0.38
13,660.0	90.2	0.0	10,818.3	3,114.0	3,114.0	8.0	0.38
13,754.0	90.4	0.2	10,817.8	3,208.0	3,208.0	8.1	0.30
13,849.0	90.2	359.8	10,817.3	3,303.0	3,303.0	8.1	0.47
13,944.0	91.8	359.1	10,815.6	3,398.0	3,398.0	7.2	1.84
14,039.0	92.8	359.2	10,811.8	3,492.9	3,492.9	5.8	1.06
14,134.0	93.0	358.9	10,807.0	3,587.7	3,587.7	4.2	0.38
14,229.0	93.0	358.6	10,802.0	3,682.6	3,682.6	2.2	0.32
14,323.0	93.0	358.7	10,797.1	3,776.4	3,776.4	-0.1	0.11
14,418.0	92.1	358.4	10,792.9	3,871.3	3,871.3	-2.5	1.00
14,513.0	92.0	358.8	10,789.5	3,966.2	3,966.2	-4.8	0.43
14,607.0	92.0	358.1	10,786.2	4,060.1	4,060.1	-7.3	0.74
14,702.0	92.0	358.0	10,782.9	4,155.0	4,155.0	-10.5	0.11
14,796.0	92.4	358.0	10,779.3	4,248.9	4,248.9	-13.8	0.43
14,891.0	92.8	358.0	10,775.0	4,343.7	4,343.7	-17.1	0.42
14,986.0	92.9	357.5	10,770.2	4,438.5	4,438.5	-20.9	0.54
15,080.0	93.6	357.8	10,764.9	4,532.3	4,532.3	-24.7	0.81
15,175.0	91.4	358.6	10,760.8	4,627.2	4,627.2	-27.7	2.46
15,221.0	91.2	358.4	10,759.7	4,673.1	4,673.1	-28.9	0.61
15,281.0	91.2	358.4	10,758.5	4,733.1	4,733.1	-30.6	0.00