

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

OCT 04 2018

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

5. Lease Serial No. NMNM 136672

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

7. If Unit of CA/Agreement, Name and/or No.

CA NMNM 138467

8. Well Name and No. Federal 2307 7P Com 3H

9. API Well No. 30-039-31368

10. Field and Pool or Exploratory Area
Basin Mancos / Lybrook Gallup

11. Country or Parish, State
Rio Arriba County, NM

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator LOGOS Operating, LLC

3a. Address 2010 Afton Place
Farmington, NM 87401

3b. Phone No. (include area code)
(505) 787-2218

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1288 FSL & 337 FEL, SE/SE, P Sec 7 T23N R07W

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☒ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleation in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

LOGOS Operating LLC, requests a change in plans to the formation Tops and the lateral curve per the attached Drilling and Directional Drill Plans.

NMOCD

OCT 11 2018

DISTRICT III

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Tamra Sessions

Regulatory Specialist

Title

Signature

Date

10/04/2018

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

NMOCD

14

Sundry Drilling Plan
LOGOS Operating, LLC

October 4, 2018

Federal 2307 7P Com 3H
Lease Serial # NMNM136672
CA # NMNM138467

Surface Location: 1288 FSL, 337 FEL

Legal Description: Sec 7, T23N, R7W (36.237916° N, 107.607415° W – NAD83)

Bottom Hole Location: 74 FSL, 148 FWL

Legal Description: Sec 6, T23N, R7W (36.249173° N, 107.623737° W – NAD83)

Rio Arriba County, NM

1. The elevation of the unprepared ground is 7,268 feet above sea level.
2. The geological name of the surface formation is the Nacimiento.
3. A rotary rig will be used to drill the well to a Proposed Total Depth of 5,793' TVD/13,462' MD.
4. Estimated top of important geological markers:

<u>Formation</u>	<u>Depth (TVD)(ft)</u>	<u>Depth (MD)(ft)</u>
Nacimiento	Surface	Surface
Ojo Alamo	1462	1481
Kirtland	1622	1653
Fruitland	1813	1858
Pictured Cliffs	2122	2191
Chacra	2952	3085
Cliff House	3625	3809
Menefee	3705	3895
Point Lookout	4473	4722
Mancos	4689	4955
Gallup	5630	6059

5. Estimated depth at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered:

<u>Formation</u>	<u>Depth (TVD)(ft)</u>	<u>Water/HydroCarbon</u>
Fruitland	1813	Gas
Pictured Cliffs	2122	Gas
Cliffhouse	3625	Gas
Point Lookout	4473	Gas
Mancos	4689	Oil/Gas

6. All proposed casing is new and the program is as follows:

(Note: Combination of varied Grade and/or Weight for the 7" Intermediate Casing may be utilized)

Casing	Size	Depth		Grade	Weight	Connection	PSI			x1000 lbs
		MD	TVD				Burst	Collapse	Tension	
Surface	9-5/8"	0-320'	0-320'	J-55	36.00	STC	3520	2020	394	
Intermediate	7"	0-6,413'	0-5,717'	P-110	26.00	LTC	9960	6230	830	
Intermediate	7"	0-6,413'	0-5,717'	L-80	26.00	LTC	7240	5410	604	
Intermediate	7"	0-6,413'	0-5,717'	J-55	23.00	LTC	4360	3270	313	
Production	4-1/2"	6,263'-13,420'	5,717'-5,782'	P-110	11.60	LTC	10690	7560	279	

7. Cementing Program:

- a. 12-1/4" hole x 9-5/8" casing at **320'** will have cement circulated to surface with **100 sks** (100% excess true hole) Class H Cement with 1.0 % CaCl₂, 1/2 #/sk Poly-E-Flake 15.8 ppg, 1.17 ft³/sk. Note: CEMENT MUST BE CIRCULATED TO SURFACE. STANDARD BOW SPRING CENTRALIZERS SHALL BE PLACED ON THE FIRST 3 (BOTTOM 3) JOINTS OF CASING (1 PER JOINT) AND 1 EVERY 3RD JOINT TO SURFACE. 20 BBLS OF WATER FOLLOWED BY 20 BBLS OF MUDFLUSH AHEAD OF CEMENT AS SPACER. Test Surface Casing to 1500psi.

OR

12-1/4" hole x 9-5/8" casing at 320' will have cement circulated to surface with 5 bbl Fresh Water Spacer, 100 sx (160 cu.ft.) of 14.5 ppg Type I-II (Neat G) + 20% Fly Ash cement w/7.41 gal/sack mix water ratio @ 1.61 cu ft/sx yield. Calculated @ volume + 50% excess. WOC 12 hours. Test csg to 600psi. Total Volume: (160 cu-ft/100 sx/ Bbls). TOC at Surface.

- a. 8-3/4" hole x 7" casing at **6,413'**. Cement will be circulated to surface in a single stage with **601 sks** (60% excess true hole) of HALCEM with 1.0 % CaC₂. 1/4 #/sk Poly-E-Flake, 5 #/sk Kol-Seal (Gilsonite) – 12.3 ppg, 1.95 ft³/sk followed by **281 sks** (60% excess true hole) VARICEM with 0.15% Versaset, 0.30% HALAD-9, 1/4 #/sk Poly-E-Flake, 5 #/sk Kol-Seal – 13.5 ppg, 1.3 ft³/sk. ONE CENTRALIZER PER JOINT FOR THE FIRST 3 JOINTS, THEN EVERY OTHER JOINT TO KOP, THEN ONE EVERY 3RD JOINT TO SURFACE. 20 BBLS OF WATER FOLLOWED BY 30 BBLS OF MUDFLUSH AHEAD OF CEMENT AS SPACER. Test Intermediate Casing to 1500 psi. Cement additives subject to change based on wellbore conditions and cement design criteria.
- a. **6-1/8"** hole x 4-1/2" liner at **13,420'MD** in a single stage using excess of approximately 30% for TOC at **6,263'**. Base slurry to consist of **625 sks** EXTENDACEM -13.3 ppg, 1.36 ft³/sk. CENTRALIZERS TO BE USED AT DISCRETION IN LATERAL TO ACHIEVE 70% STAND OFF. CENTRALIZERS TO BE USED TO TIE BACK DEPTH OF 6304' TO ACHIEVE 70% STAND OFF. PACKOFF SEAL ASSEMBLY TO BE USED FOR LINER TOP ISOLATION. Cement additives subject to change based on wellbore conditions and cement design criteria. Liner to be pressure tested during completion operations.

8. BOP Pressure Testing:

Also, requesting a change for the BOP testing per the drilling plan previously submitted. While drill pipe in use, the pipe and blind rams will be function tested once each trip. The BOPE will be tested to 2,000psi (High) for 10 minutes and annular test will be conducted to 1,500psi for 30 minutes. Surface and Intermediate casing pressure test will be tested to 1,500psi for 30 minutes. Will utilize a BOPE testing unit with a recording chart and appropriate test plug for testing. All tests and inspections will be recorded and logged with time and results.

9. Mud Program:

0' - 320'	Fresh water/Spud Mud. Paper for losses and seepage. 8.4 to 8.8 ppg, 32 to 44 vis, PV <8, YP 2 to 13, FLNC, LGS < 3%
320' – 6,413'	KCL WBM. As needed LCM for losses and seepage. 9.0 to 9.5 ppg, pH 9.0-9.5, 38 to 45 vis, PV 8-14, YP 8-14, FL <20cc/30min, LGS <6%
6,413' – 13,420'	LSND WBM. As needed LCM for losses and seepage. 8.8 to 9.0 ppg, PH 9.0-9.5, 34 to 38 vis, PV 4-8, YP 6-8, FL <8cc/30min, LGS < 4%

****During drilling operations, all necessary products will be sufficiently stored on location for abnormal situations. The characteristics, use, testing of drilling mud and the implementation of related drilling procedures shall be designed to prevent the loss of well control. Sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring well control.**

****A pH of 10 or above in the fresh water base mud system shall be maintained to control the effects corrosion has on metallurgy of equipment used.**

Operating and Maintenance

LOGOS Operating, LLC will be using all above ground steel pits for fluid and cuttings while drilling. If any tank develops a leak we will have immediate visual discovery, we would then transfer the fluid to another tank then remove any contaminated soil and dispose of it in the cuttings bins for transportation. Any leaks, spills or other undesirable events will be reported in accordance with BLM NTL 3A. Rig crews will monitor the tanks at all times. A trip/surge tank will be used to monitor returns for any “kicks” of formation fluids.

Equipment:

2-Mongoose Shale Shakers

2-3400 High Speed Centrifuges with stands and pumps

2- three- high sided cuttings catch tank

2-Roll off bins with track

2-200 bbl Open top Frac tanks

1-Mud/Gas Separator and Degasser 1-

Trip/Surge Tank

Electronic or Visual monitoring system to indicate lost returns and gas detection sensors

10. Testing, Logging and Coring Program:

- Testing Program: No drillstem tests are anticipated
- Electric Logging Program: TBD
- LWD Program: TBD
- Coring Program: None.
- CBL's and/or Temperature Surveys Will Be Performed as Needed or Required.

11. Bottom Hole Pressure expected to be 2,500 +/- psi

12. Bottom Hole Temperature expected to be 160 deg F.

Well Control Equipment Schematic for 2M Service

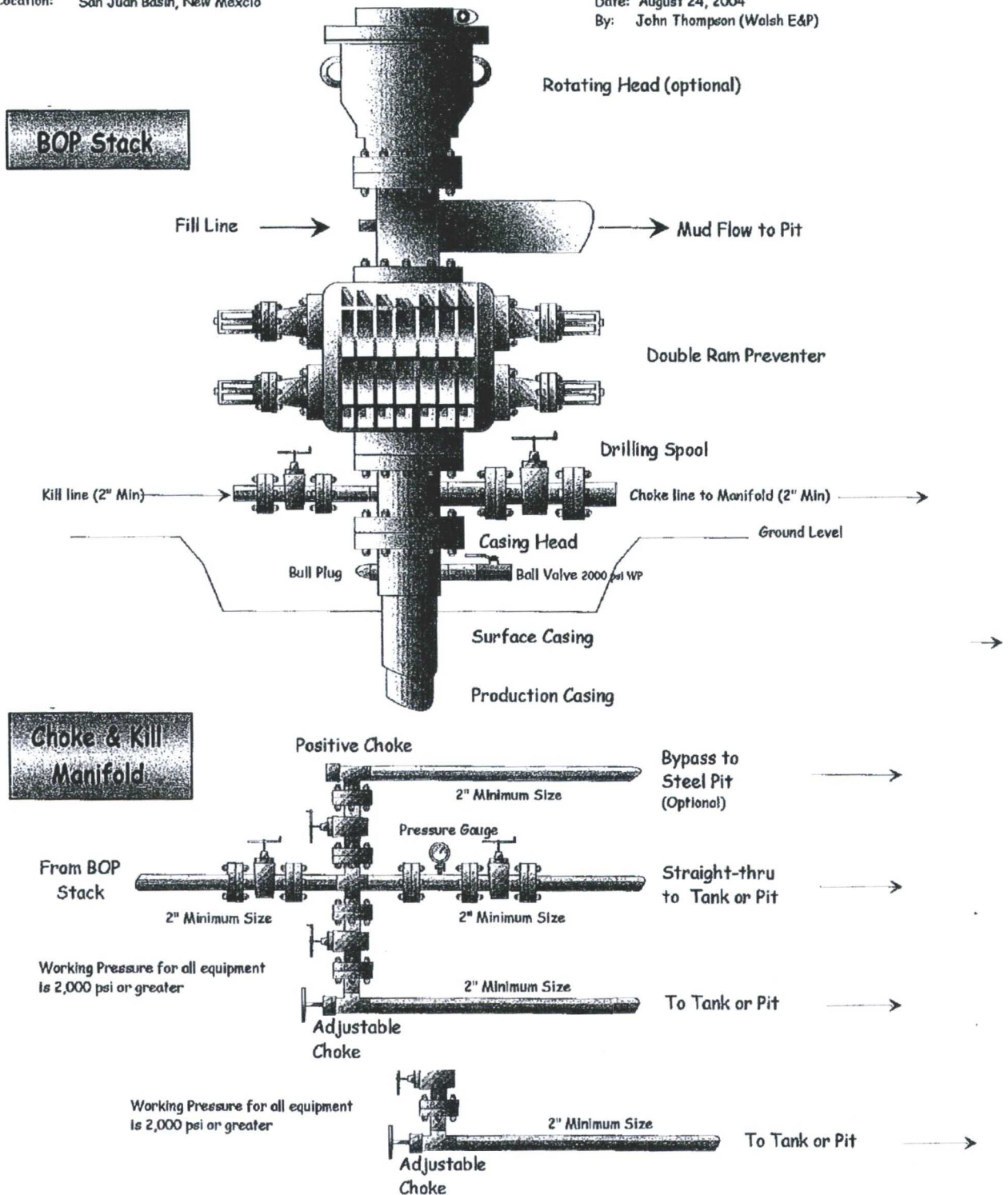
Attachment to Drilling Technical Program

Exhibit #1 Typical BOP setup

Location: San Juan Basin, New Mexico

Date: August 24, 2004

By: John Thompson (Walsh E&P)





Company: Logos Operating LLC
Project: Rio Arriba, NM NAD83
Site: Federal 2307-7P
Well: Federal 2307-7P COM 3H
Wellbore: OH
Design: Plan #5

PROJECT DETAILS: Rio Arriba, NM NAD83
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone
System Datum: Mean Sea Level
Local North: True



Azimuths to True North
Magnetic North: 8.80°

Magnetic Field
Strength: 49486.2snT
Dip Angle: 62.83°
Date: 10/15/2018
Model: HDGM

WELL DETAILS: Federal 2307-7P COM 3H

GL 7272' & RKB 14' @ 7286.00usft (Aztec 920)
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 1905977.31 2789714.22 36.2379160 -107.6074150 7P 3H

Plan: Plan #5 (Federal 2307-7P COM 3H/OH)

Created By: Janie Collins Date: 10:18, October 04 2018

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Fed 7P 3H LP REV	5717.00	-795.03	185.79	1905182.72	2789901.86	36.2357320	-107.6067850
Fed 7P 3H T1	5746.00	274.85	-751.98	1906250.40	2788961.60	36.2386710	-107.6099650
Fed 7P 3H T2	5759.00	1603.97	-2076.55	1907576.43	2787633.93	36.2423220	-107.6144570
Fed 7P 3H T3	5774.00	2932.05	-3391.57	1908901.45	2786315.83	36.2459700	-107.6189170
Fed 7P 3H BHL REV	5782.00	4098.23	-4812.63	1910064.30	2784892.05	36.2491730	-107.6237370
Fed 7P 3H FPerf	5781.00	4047.62	-4751.02	1910013.84	2784953.78	36.2490340	-107.6235280
Fed 7P 3H LPerf	5718.00	-682.18	87.00	1905295.33	2789802.81	36.2360420	-107.6071200

SECTION DETAILS

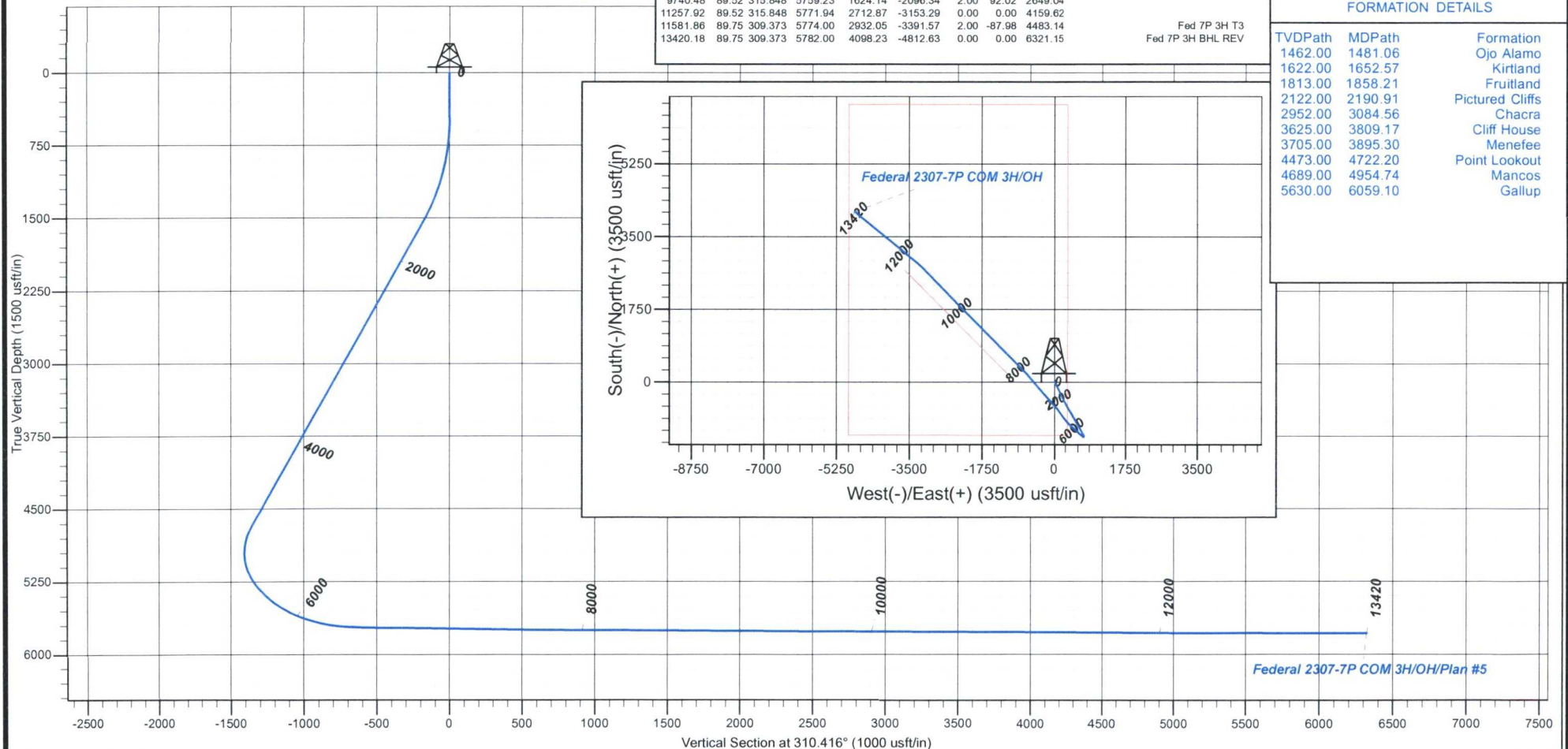
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	
1587.76	21.76	150.733	1561.81	-178.00	99.75	2.00	150.73	-191.35	
4944.66	21.76	150.733	4679.61	-1263.38	708.02	0.00	0.00	-1358.15	
6412.59	88.83	318.765	5717.00	-795.03	185.79	7.50	167.25	-656.90	Fed 7P 3H LP REV
6426.95	88.77	319.046	5717.30	-784.21	176.36	2.00	101.84	-642.70	
7634.06	88.77	319.046	5743.14	127.23	-614.67	0.00	0.00	550.47	
7835.73	89.60	315.098	5746.00	274.85	-751.98	2.00	-78.16	750.72	Fed 7P 3H T1
7835.76	89.60	315.098	5746.00	274.87	-752.00	2.00	-71.25	750.74	
9702.41	89.60	315.098	5758.93	1597.01	-2069.64	0.00	0.00	2611.13	
9712.22	89.54	315.283	5759.00	1603.97	-2076.55	2.00	108.75	2620.90	Fed 7P 3H T2
9740.48	89.52	315.848	5759.23	1624.14	-2096.34	2.00	92.02	2649.04	
11257.92	89.52	315.848	5771.94	2712.87	-3153.29	0.00	0.00	4159.62	
11581.86	89.75	309.373	5774.00	2932.05	-3391.57	2.00	-87.98	4483.14	Fed 7P 3H T3
13420.18	89.75	309.373	5782.00	4098.23	-4812.63	0.00	0.00	6321.15	Fed 7P 3H BHL REV

CASING DETAILS

No casing data is available

FORMATION DETAILS

TVDPPath	MDPath	Formation
1462.00	1481.06	Ojo Alamo
1622.00	1652.57	Kirtland
1813.00	1858.21	Fruitland
2122.00	2190.91	Pictured Cliffs
2952.00	3084.56	Chacra
3625.00	3809.17	Cliff House
3705.00	3895.30	Menefee
4473.00	4722.20	Point Lookout
4689.00	4954.74	Mancos
5630.00	6059.10	Gallup





Logos Operating LLC

Rio Arriba, NM NAD83

Federal 2307-7P

Federal 2307-7P COM 3H - Slot 7P 3H

OH

Plan: Plan #5

Standard Planning Report

04 October, 2018



www.scientificdrilling.com



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal 2307-7P COM 3H - Slot 7P 3H
Company:	Logos Operating LLC	TVD Reference:	GL 7272' & RKB 14' @ 7286.00usft (Aztec 920)
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 7272' & RKB 14' @ 7286.00usft (Aztec 920)
Site:	Federal 2307-7P	North Reference:	True
Well:	Federal 2307-7P COM 3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Project	Rio Arriba, NM NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	Federal 2307-7P				
Site Position:		Northing:	1,905,969.03 usft	Latitude:	36.2378930
From:	Lat/Long	Easting:	2,789,753.17 usft	Longitude:	-107.6072830
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.13 °

Well	Federal 2307-7P COM 3H - Slot 7P 3H					
Well Position	+N/-S	8.37 usft	Northing:	1,905,977.31 usft	Latitude:	36.2379160
	+E/-W	-38.93 usft	Easting:	2,789,714.22 usft	Longitude:	-107.6074150
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	7,272.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/15/2018	8.80	62.83	49,486

Design	Plan #5			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	310.416

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,587.76	21.76	150.733	1,561.81	-178.00	99.75	2.00	2.00	0.00	150.73	
4,944.66	21.76	150.733	4,679.61	-1,263.38	708.02	0.00	0.00	0.00	0.00	
6,412.59	88.83	318.765	5,717.00	-795.03	185.79	7.50	4.57	11.45	167.25	Fed 7P 3H LP REV
6,426.95	88.77	319.046	5,717.30	-784.21	176.36	2.00	-0.41	1.96	101.84	
7,634.06	88.77	319.046	5,743.14	127.23	-614.67	0.00	0.00	0.00	0.00	
7,835.73	89.60	315.098	5,746.00	274.85	-751.98	2.00	0.41	-1.96	-78.16	Fed 7P 3H T1
7,835.76	89.60	315.098	5,746.00	274.87	-752.00	2.00	0.64	-1.89	-71.25	
9,702.41	89.60	315.098	5,758.93	1,597.01	-2,069.64	0.00	0.00	0.00	0.00	
9,712.22	89.54	315.283	5,759.00	1,603.97	-2,076.55	2.00	-0.64	1.89	108.75	Fed 7P 3H T2
9,740.48	89.52	315.848	5,759.23	1,624.14	-2,096.34	2.00	-0.07	2.00	92.02	
11,257.92	89.52	315.848	5,771.94	2,712.87	-3,153.29	0.00	0.00	0.00	0.00	
11,581.86	89.75	309.373	5,774.00	2,932.05	-3,391.57	2.00	0.07	-2.00	-87.98	Fed 7P 3H T3
13,420.18	89.75	309.373	5,782.00	4,098.23	-4,812.63	0.00	0.00	0.00	0.00	Fed 7P 3H BHL REV

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal 2307-7P COM 3H - Slot 7P 3H
Company:	Logos Operating LLC	TVD Reference:	GL 7272' & RKB 14' @ 7286.00usft (Aztec 920)
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 7272' & RKB 14' @ 7286.00usft (Aztec 920)
Site:	Federal 2307-7P	North Reference:	True
Well:	Federal 2307-7P COM 3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Planned 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	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
600.00	2.00	150.733	599.98	-1.52	0.85	-1.64	2.00	2.00	0.00
700.00	4.00	150.733	699.84	-6.09	3.41	-6.54	2.00	2.00	0.00
800.00	6.00	150.733	799.45	-13.69	7.67	-14.72	2.00	2.00	0.00
900.00	8.00	150.733	898.70	-24.32	13.63	-26.15	2.00	2.00	0.00
1,000.00	10.00	150.733	997.47	-37.97	21.28	-40.81	2.00	2.00	0.00
1,100.00	12.00	150.733	1,095.62	-54.61	30.61	-58.71	2.00	2.00	0.00
1,200.00	14.00	150.733	1,193.06	-74.23	41.60	-79.80	2.00	2.00	0.00
1,300.00	16.00	150.733	1,289.64	-96.81	54.25	-104.07	2.00	2.00	0.00
1,400.00	18.00	150.733	1,385.27	-122.31	68.55	-131.49	2.00	2.00	0.00
1,481.06	19.62	150.733	1,462.00	-145.12	81.33	-156.00	2.00	2.00	0.00
Ojo Alamo									
1,500.00	20.00	150.733	1,479.82	-150.71	84.46	-162.02	2.00	2.00	0.00
1,587.76	21.76	150.733	1,561.81	-178.00	99.75	-191.35	2.00	2.00	0.00
Start 3356.89 hold at 1587.76 MD									
1,600.00	21.76	150.733	1,573.18	-181.95	101.97	-195.60	0.00	0.00	0.00
1,652.57	21.76	150.733	1,622.00	-198.95	111.50	-213.87	0.00	0.00	0.00
Kirtland									
1,700.00	21.76	150.733	1,666.06	-214.29	120.09	-230.36	0.00	0.00	0.00
1,800.00	21.76	150.733	1,758.93	-246.62	138.21	-265.12	0.00	0.00	0.00
1,858.21	21.76	150.733	1,813.00	-265.44	148.76	-285.35	0.00	0.00	0.00
Fruitland									
1,900.00	21.76	150.733	1,851.81	-278.95	156.33	-299.88	0.00	0.00	0.00
2,000.00	21.76	150.733	1,944.69	-311.29	174.45	-334.64	0.00	0.00	0.00
2,100.00	21.76	150.733	2,037.57	-343.62	192.57	-369.39	0.00	0.00	0.00
2,190.91	21.76	150.733	2,122.00	-373.01	209.04	-400.99	0.00	0.00	0.00
Pictured Cliffs									
2,200.00	21.76	150.733	2,130.44	-375.95	210.69	-404.15	0.00	0.00	0.00
2,300.00	21.76	150.733	2,223.32	-408.29	228.81	-438.91	0.00	0.00	0.00
2,400.00	21.76	150.733	2,316.20	-440.62	246.93	-473.67	0.00	0.00	0.00
2,500.00	21.76	150.733	2,409.08	-472.95	265.05	-508.43	0.00	0.00	0.00
2,600.00	21.76	150.733	2,501.95	-505.28	283.17	-543.19	0.00	0.00	0.00
2,700.00	21.76	150.733	2,594.83	-537.62	301.29	-577.95	0.00	0.00	0.00
2,800.00	21.76	150.733	2,687.71	-569.95	319.41	-612.70	0.00	0.00	0.00
2,900.00	21.76	150.733	2,780.59	-602.28	337.53	-647.46	0.00	0.00	0.00
3,000.00	21.76	150.733	2,873.46	-634.62	355.65	-682.22	0.00	0.00	0.00
3,084.56	21.76	150.733	2,952.00	-661.96	370.97	-711.61	0.00	0.00	0.00
Chacra									
3,100.00	21.76	150.733	2,966.34	-666.95	373.77	-716.98	0.00	0.00	0.00
3,200.00	21.76	150.733	3,059.22	-699.28	391.89	-751.74	0.00	0.00	0.00
3,300.00	21.76	150.733	3,152.10	-731.62	410.01	-786.50	0.00	0.00	0.00
3,400.00	21.76	150.733	3,244.97	-763.95	428.13	-821.25	0.00	0.00	0.00
3,500.00	21.76	150.733	3,337.85	-796.28	446.25	-856.01	0.00	0.00	0.00
3,600.00	21.76	150.733	3,430.73	-828.61	464.37	-890.77	0.00	0.00	0.00
3,700.00	21.76	150.733	3,523.61	-860.95	482.49	-925.53	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal 2307-7P COM 3H - Slot 7P 3H
Company:	Logos Operating LLC	TVD Reference:	GL 7272' & RKB 14' @ 7286.00usft (Aztec 920)
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 7272' & RKB 14' @ 7286.00usft (Aztec 920)
Site:	Federal 2307-7P	North Reference:	True
Well:	Federal 2307-7P COM 3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Planned 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)
3,800.00	21.76	150.733	3,616.48	-893.28	500.61	-960.29	0.00	0.00	0.00
3,809.17	21.76	150.733	3,625.00	-896.25	502.27	-963.48	0.00	0.00	0.00
Cliff House									
3,895.30	21.76	150.733	3,705.00	-924.10	517.88	-993.41	0.00	0.00	0.00
Menefee									
3,900.00	21.76	150.733	3,709.36	-925.61	518.73	-995.05	0.00	0.00	0.00
4,000.00	21.76	150.733	3,802.24	-957.95	536.85	-1,029.81	0.00	0.00	0.00
4,100.00	21.76	150.733	3,895.12	-990.28	554.97	-1,064.56	0.00	0.00	0.00
4,200.00	21.76	150.733	3,987.99	-1,022.61	573.09	-1,099.32	0.00	0.00	0.00
4,300.00	21.76	150.733	4,080.87	-1,054.95	591.21	-1,134.08	0.00	0.00	0.00
4,400.00	21.76	150.733	4,173.75	-1,087.28	609.33	-1,168.84	0.00	0.00	0.00
4,500.00	21.76	150.733	4,266.63	-1,119.61	627.45	-1,203.60	0.00	0.00	0.00
4,600.00	21.76	150.733	4,359.50	-1,151.95	645.57	-1,238.36	0.00	0.00	0.00
4,700.00	21.76	150.733	4,452.38	-1,184.28	663.69	-1,273.11	0.00	0.00	0.00
4,722.20	21.76	150.733	4,473.00	-1,191.46	667.71	-1,280.83	0.00	0.00	0.00
Point Lookout									
4,800.00	21.76	150.733	4,545.26	-1,216.61	681.81	-1,307.87	0.00	0.00	0.00
4,900.00	21.76	150.733	4,638.14	-1,248.94	699.93	-1,342.63	0.00	0.00	0.00
4,944.66	21.76	150.733	4,679.61	-1,263.38	708.02	-1,358.15	0.00	0.00	0.00
Start DLS 7.50 TFO 167.25									
4,954.74	21.02	151.198	4,689.00	-1,266.60	709.81	-1,361.60	7.50	-7.31	4.62
Mancos									
5,000.00	17.73	153.741	4,731.69	-1,279.89	716.77	-1,375.52	7.50	-7.27	5.62
5,100.00	10.69	164.639	4,828.59	-1,302.53	725.98	-1,397.20	7.50	-7.04	10.90
5,200.00	5.15	204.557	4,927.66	-1,315.57	726.57	-1,406.11	7.50	-5.54	39.92
5,300.00	7.14	277.894	5,027.22	-1,318.80	718.54	-1,402.09	7.50	1.99	73.34
5,400.00	13.70	299.177	5,125.55	-1,312.17	702.02	-1,385.21	7.50	6.56	21.28
5,500.00	20.89	306.441	5,220.97	-1,295.78	677.31	-1,355.77	7.50	7.20	7.26
5,600.00	28.24	310.069	5,311.86	-1,269.92	644.81	-1,314.26	7.50	7.35	3.63
5,700.00	35.65	312.288	5,396.66	-1,235.02	605.08	-1,261.39	7.50	7.41	2.22
5,800.00	43.09	313.825	5,473.91	-1,191.70	558.81	-1,198.08	7.50	7.44	1.54
5,900.00	50.54	314.986	5,542.29	-1,140.68	506.79	-1,125.39	7.50	7.45	1.16
6,000.00	58.00	315.920	5,600.65	-1,082.85	449.91	-1,044.59	7.50	7.46	0.93
6,059.10	62.42	316.402	5,630.00	-1,045.86	414.39	-993.57	7.50	7.47	0.82
Gallup									
6,100.00	65.47	316.713	5,647.96	-1,019.18	389.13	-957.04	7.50	7.47	0.76
6,200.00	72.94	317.417	5,683.44	-950.78	325.51	-864.25	7.50	7.47	0.70
6,300.00	80.42	318.066	5,706.46	-878.80	260.12	-767.80	7.50	7.47	0.65
6,400.00	87.89	318.687	5,716.64	-804.49	194.09	-669.35	7.50	7.47	0.62
6,412.59	88.83	318.765	5,717.00	-795.03	185.79	-656.90	7.50	7.47	0.61
36.2357320, -107.6067850 - POE @ 6412' MD									
6,426.95	88.77	319.046	5,717.30	-784.21	176.36	-642.70	2.00	-0.41	1.96
Start 1207.11 hold at 6426.95 MD									
6,500.00	88.77	319.046	5,718.86	-729.05	128.49	-570.49	0.00	0.00	0.00
6,562.56	88.77	319.046	5,720.20	-681.82	87.49	-508.66	0.00	0.00	0.00
Last Perf @ 6562' MD - 36.2360430, -107.6071183									
6,600.00	88.77	319.046	5,721.00	-653.55	62.96	-471.65	0.00	0.00	0.00
6,700.00	88.77	319.046	5,723.15	-578.04	-2.58	-372.80	0.00	0.00	0.00
6,800.00	88.77	319.046	5,725.29	-502.54	-68.11	-273.96	0.00	0.00	0.00
6,900.00	88.77	319.046	5,727.43	-427.03	-133.64	-175.11	0.00	0.00	0.00
7,000.00	88.77	319.046	5,729.57	-351.52	-199.17	-76.27	0.00	0.00	0.00

Database: Grand Junction District
Company: Logos Operating LLC
Project: Rio Arriba, NM NAD83
Site: Federal 2307-7P
Well: Federal 2307-7P COM 3H
Wellbore: OH
Design: Plan #5

Local Co-ordinate Reference: Well Federal 2307-7P COM 3H - Slot 7P 3H
TVD Reference: GL 7272' & RKB 14' @ 7286.00usft (Aztec 920)
MD Reference: GL 7272' & RKB 14' @ 7286.00usft (Aztec 920)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned 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)
7,100.00	88.77	319.046	5,731.71	-276.02	-264.70	22.58	0.00	0.00	0.00
7,200.00	88.77	319.046	5,733.85	-200.51	-330.23	121.42	0.00	0.00	0.00
7,300.00	88.77	319.046	5,735.99	-125.01	-395.76	220.27	0.00	0.00	0.00
7,400.00	88.77	319.046	5,738.13	-49.50	-461.29	319.11	0.00	0.00	0.00
7,500.00	88.77	319.046	5,740.27	26.01	-526.82	417.96	0.00	0.00	0.00
7,600.00	88.77	319.046	5,742.41	101.51	-592.35	516.80	0.00	0.00	0.00
7,634.06	88.77	319.046	5,743.14	127.23	-614.67	550.47	0.00	0.00	0.00
Start DLS 2.00 TFO -78.16									
7,700.00	89.04	317.755	5,744.40	176.53	-658.44	615.76	2.00	0.41	-1.96
7,800.00	89.46	315.797	5,745.71	249.39	-726.92	715.13	2.00	0.41	-1.96
7,835.73	89.60	315.098	5,746.00	274.85	-751.98	750.72	2.00	0.41	-1.96
7,835.76	89.60	315.098	5,746.00	274.87	-752.00	750.75	1.71	0.55	-1.62
Start 1866.66 hold at 7835.76 MD									
7,900.00	89.60	315.098	5,746.45	320.37	-797.35	814.77	0.00	0.00	0.00
8,000.00	89.60	315.098	5,747.14	391.20	-867.94	914.44	0.00	0.00	0.00
8,100.00	89.60	315.098	5,747.83	462.03	-938.53	1,014.10	0.00	0.00	0.00
8,200.00	89.60	315.098	5,748.52	532.86	-1,009.11	1,113.77	0.00	0.00	0.00
8,300.00	89.60	315.098	5,749.22	603.69	-1,079.70	1,213.43	0.00	0.00	0.00
8,400.00	89.60	315.098	5,749.91	674.52	-1,150.29	1,313.09	0.00	0.00	0.00
8,500.00	89.60	315.098	5,750.60	745.35	-1,220.88	1,412.76	0.00	0.00	0.00
8,600.00	89.60	315.098	5,751.29	816.18	-1,291.47	1,512.42	0.00	0.00	0.00
8,700.00	89.60	315.098	5,751.99	887.01	-1,362.06	1,612.09	0.00	0.00	0.00
8,800.00	89.60	315.098	5,752.68	957.84	-1,432.64	1,711.75	0.00	0.00	0.00
8,900.00	89.60	315.098	5,753.37	1,028.66	-1,503.23	1,811.41	0.00	0.00	0.00
9,000.00	89.60	315.098	5,754.06	1,099.49	-1,573.82	1,911.08	0.00	0.00	0.00
9,100.00	89.60	315.098	5,754.76	1,170.32	-1,644.41	2,010.74	0.00	0.00	0.00
9,200.00	89.60	315.098	5,755.45	1,241.15	-1,715.00	2,110.41	0.00	0.00	0.00
9,300.00	89.60	315.098	5,756.14	1,311.98	-1,785.59	2,210.07	0.00	0.00	0.00
9,400.00	89.60	315.098	5,756.83	1,382.81	-1,856.18	2,309.73	0.00	0.00	0.00
9,500.00	89.60	315.098	5,757.53	1,453.64	-1,926.76	2,409.40	0.00	0.00	0.00
9,600.00	89.60	315.098	5,758.22	1,524.47	-1,997.35	2,509.06	0.00	0.00	0.00
9,700.00	89.60	315.098	5,758.91	1,595.30	-2,067.94	2,608.73	0.00	0.00	0.00
9,702.41	89.60	315.098	5,758.93	1,597.01	-2,069.64	2,611.13	0.00	0.00	0.00
Start DLS 2.00 TFO 108.75									
9,712.22	89.54	315.283	5,759.00	1,603.97	-2,076.55	2,620.90	2.00	-0.64	1.89
Start DLS 2.00 TFO 92.02									
9,740.48	89.52	315.848	5,759.23	1,624.14	-2,096.34	2,649.05	2.00	-0.07	2.00
Start 1517.45 hold at 9740.48 MD									
9,800.00	89.52	315.848	5,759.73	1,666.85	-2,137.80	2,708.30	0.00	0.00	0.00
9,900.00	89.52	315.848	5,760.57	1,738.60	-2,207.45	2,807.85	0.00	0.00	0.00
10,000.00	89.52	315.848	5,761.40	1,810.34	-2,277.10	2,907.39	0.00	0.00	0.00
10,100.00	89.52	315.848	5,762.24	1,882.09	-2,346.76	3,006.94	0.00	0.00	0.00
10,200.00	89.52	315.848	5,763.08	1,953.84	-2,416.41	3,106.49	0.00	0.00	0.00
10,300.00	89.52	315.848	5,763.92	2,025.58	-2,486.07	3,206.04	0.00	0.00	0.00
10,400.00	89.52	315.848	5,764.75	2,097.33	-2,555.72	3,305.58	0.00	0.00	0.00
10,500.00	89.52	315.848	5,765.59	2,169.08	-2,625.37	3,405.13	0.00	0.00	0.00
10,600.00	89.52	315.848	5,766.43	2,240.83	-2,695.03	3,504.68	0.00	0.00	0.00
10,700.00	89.52	315.848	5,767.27	2,312.57	-2,764.68	3,604.23	0.00	0.00	0.00
10,800.00	89.52	315.848	5,768.10	2,384.32	-2,834.33	3,703.77	0.00	0.00	0.00
10,900.00	89.52	315.848	5,768.94	2,456.07	-2,903.99	3,803.32	0.00	0.00	0.00
11,000.00	89.52	315.848	5,769.78	2,527.81	-2,973.64	3,902.87	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal 2307-7P COM 3H - Slot 7P 3H
Company:	Logos Operating LLC	TVD Reference:	GL 7272' & RKB 14' @ 7286.00usft (Aztec 920)
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 7272' & RKB 14' @ 7286.00usft (Aztec 920)
Site:	Federal 2307-7P	North Reference:	True
Well:	Federal 2307-7P COM 3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Planned 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)
11,100.00	89.52	315.848	5,770.61	2,599.56	-3,043.30	4,002.42	0.00	0.00	0.00
11,200.00	89.52	315.848	5,771.45	2,671.31	-3,112.95	4,101.96	0.00	0.00	0.00
11,257.92	89.52	315.848	5,771.94	2,712.86	-3,153.29	4,159.62	0.00	0.00	0.00
Start DLS 2.00 TFO -87.98									
11,300.00	89.55	315.007	5,772.28	2,742.84	-3,182.82	4,201.54	2.00	0.07	-2.00
11,400.00	89.62	313.008	5,773.00	2,812.31	-3,254.74	4,301.33	2.00	0.07	-2.00
11,500.00	89.69	311.010	5,773.60	2,879.23	-3,329.04	4,401.29	2.00	0.07	-2.00
11,581.86	89.75	309.373	5,774.00	2,932.05	-3,391.57	4,483.14	2.00	0.07	-2.00
Start 1838.33 hold at 11581.86 MD									
11,600.00	89.75	309.373	5,774.08	2,943.56	-3,405.59	4,501.28	0.00	0.00	0.00
11,700.00	89.75	309.373	5,774.51	3,007.00	-3,482.90	4,601.26	0.00	0.00	0.00
11,800.00	89.75	309.373	5,774.95	3,070.44	-3,560.20	4,701.25	0.00	0.00	0.00
11,900.00	89.75	309.373	5,775.38	3,133.87	-3,637.50	4,801.23	0.00	0.00	0.00
12,000.00	89.75	309.373	5,775.82	3,197.31	-3,714.80	4,901.21	0.00	0.00	0.00
12,100.00	89.75	309.373	5,776.25	3,260.75	-3,792.10	5,001.19	0.00	0.00	0.00
12,200.00	89.75	309.373	5,776.69	3,324.18	-3,869.41	5,101.18	0.00	0.00	0.00
12,300.00	89.75	309.373	5,777.13	3,387.62	-3,946.71	5,201.16	0.00	0.00	0.00
12,400.00	89.75	309.373	5,777.56	3,451.06	-4,024.01	5,301.14	0.00	0.00	0.00
12,500.00	89.75	309.373	5,778.00	3,514.49	-4,101.31	5,401.12	0.00	0.00	0.00
12,600.00	89.75	309.373	5,778.43	3,577.93	-4,178.61	5,501.11	0.00	0.00	0.00
12,700.00	89.75	309.373	5,778.87	3,641.37	-4,255.92	5,601.09	0.00	0.00	0.00
12,800.00	89.75	309.373	5,779.30	3,704.80	-4,333.22	5,701.07	0.00	0.00	0.00
12,900.00	89.75	309.373	5,779.74	3,768.24	-4,410.52	5,801.05	0.00	0.00	0.00
13,000.00	89.75	309.373	5,780.17	3,831.68	-4,487.82	5,901.04	0.00	0.00	0.00
13,100.00	89.75	309.373	5,780.61	3,895.11	-4,565.12	6,001.02	0.00	0.00	0.00
13,200.00	89.75	309.373	5,781.04	3,958.55	-4,642.43	6,101.00	0.00	0.00	0.00
13,300.00	89.75	309.373	5,781.48	4,021.99	-4,719.73	6,200.98	0.00	0.00	0.00
13,340.44	89.75	309.373	5,781.65	4,047.64	-4,750.99	6,241.42	0.00	0.00	0.00
First Perf @ 13,340' MD - 36.2490341, -107.6235279									
13,400.00	89.75	309.373	5,781.91	4,085.42	-4,797.03	6,300.97	0.00	0.00	0.00
13,420.18	89.75	309.373	5,782.00	4,098.22	-4,812.63	6,321.14	0.00	0.00	0.00
TD at 13420.18									

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal 2307-7P COM 3H - Slot 7P 3H
Company:	Logos Operating LLC	TVD Reference:	GL 7272' & RKB 14' @ 7286.00usft (Aztec 920)
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 7272' & RKB 14' @ 7286.00usft (Aztec 920)
Site:	Federal 2307-7P	North Reference:	True
Well:	Federal 2307-7P COM 3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Fed 7P 3H LP REV - plan hits target center - Point	0.00	0.000	5,717.00	-795.03	185.79	1,905,182.72	2,789,901.86	36.2357320	-107.6067850
Fed 7P 3H LPerf - plan misses target center by 2.29usft at 6562.56usft MD (5720.20 TVD, -681.82 N, 87.49 E) - Point	0.00	0.000	5,718.00	-682.18	87.00	1,905,295.34	2,789,802.81	36.2360420	-107.6071200
Fed 7P 3H T1 - plan hits target center - Point	0.00	0.000	5,746.00	274.85	-751.98	1,906,250.41	2,788,961.60	36.2386710	-107.6099650
Fed 7P 3H T2 - plan hits target center - Point	0.00	0.000	5,759.00	1,603.97	-2,076.55	1,907,576.43	2,787,633.93	36.2423220	-107.6144570
Fed 7P 3H T3 - plan hits target center - Point	0.00	0.000	5,774.00	2,932.05	-3,391.57	1,908,901.45	2,786,315.83	36.2459700	-107.6189170
Fed 7P 3H FPerf - plan misses target center by 0.65usft at 13340.44usft MD (5781.65 TVD, 4047.64 N, -4750.99 E) - Point	0.00	0.000	5,781.00	4,047.62	-4,751.02	1,910,013.84	2,784,953.78	36.2490340	-107.6235280
Fed 7P 3H BHL REV - plan hits target center - Point	0.00	0.000	5,782.00	4,098.23	-4,812.63	1,910,064.31	2,784,892.05	36.2491730	-107.6237370

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,481.06	1,462.00	Ojo Alamo	Empty	0.00	0.000	
1,652.57	1,622.00	Kirtland	Empty	0.00	0.000	
1,858.21	1,813.00	Fruitland	Empty	0.00	0.000	
2,190.91	2,122.00	Pictured Cliffs	Empty	0.00	0.000	
3,084.56	2,952.00	Chacra	Empty	0.00	0.000	
3,809.17	3,625.00	Cliff House	Empty	0.00	0.000	
3,895.30	3,705.00	Menefee	Empty	0.00	0.000	
4,722.20	4,473.00	Point Lookout	Empty	0.00	0.000	
4,954.74	4,689.00	Mancos	Empty	0.00	0.000	
6,059.10	5,630.00	Gallup	Empty	0.00	0.000	

Database:	Grand Junction District	Local Co-ordinate Reference:	Well Federal 2307-7P COM 3H - Slot 7P 3H
Company:	Logos Operating LLC	TVD Reference:	GL 7272' & RKB 14' @ 7286.00usft (Aztec 920)
Project:	Rio Arriba, NM NAD83	MD Reference:	GL 7272' & RKB 14' @ 7286.00usft (Aztec 920)
Site:	Federal 2307-7P	North Reference:	True
Well:	Federal 2307-7P COM 3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.00	500.00	0.00	0.00	Start Build 2.00
1,587.76	1,561.81	-178.00	99.75	Start 3356.89 hold at 1587.76 MD
4,944.66	4,679.61	-1,263.38	708.02	Start DLS 7.50 TFO 167.25
6,412.59	5,717.00	-795.03	185.79	36.2357320, -107.6067850
6,412.59	5,717.00	-795.03	185.79	POE @ 6412' MD
6,426.95	5,717.30	-784.21	176.36	Start 1207.11 hold at 6426.95 MD
6,562.56	5,720.20	-681.82	87.49	Last Perf @ 6562' MD
6,562.56	5,720.20	-681.82	87.49	36.2360430, -107.6071183
7,634.06	5,743.14	127.23	-614.67	Start DLS 2.00 TFO -78.16
7,835.76	5,746.00	274.87	-752.00	Start 1866.66 hold at 7835.76 MD
9,702.41	5,758.93	1,597.01	-2,069.64	Start DLS 2.00 TFO 108.75
9,712.22	5,759.00	1,603.97	-2,076.55	Start DLS 2.00 TFO 92.02
9,740.48	5,759.23	1,624.14	-2,096.34	Start 1517.45 hold at 9740.48 MD
11,257.92	5,771.94	2,712.86	-3,153.29	Start DLS 2.00 TFO -87.98
11,581.86	5,774.00	2,932.05	-3,391.57	Start 1838.33 hold at 11581.86 MD
13,340.44	5,781.65	4,047.64	-4,750.99	First Perf @ 13,340' MD
13,340.44	5,781.65	4,047.64	-4,750.99	36.2490341, -107.6235279
13,420.18	5,782.00	4,098.22	-4,812.63	TD at 13420.18