

Submit 1 Copy To Appropriate District
Office
District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM
87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
Revised July 18, 2013

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-045-35913
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		5. Indicate Type of Lease STATE ☒ FEE ☐
2. Name of Operator LOGOS Operating, LLC		6. State Oil & Gas Lease No. VC - 0472
3. Address of Operator 2010 Afton Pl, Farmington NM 87401		7. Lease Name or Unit Agreement Name State 2408 32A Com
4. Well Location Unit Letter <u>A</u> : <u>330'</u> feet from the <u>FNL</u> line and <u>300'</u> feet from the <u>FEL</u> line Section <u>32</u> Township <u>24N</u> Range <u>08W</u> NMPM County <u>San Juan</u>		8. Well Number <u>003H</u>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 7013'		9. OGRID Number 289408
		10. Pool name or Wildcat Nageezi Gallup

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☒	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: ☐		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

LOGOS Operating is requesting a change in plans to the surface hole (SHL) and total depth (TD) per the attached C102 package, Operations and Directional Drill plans.

NMOCD

ADHERE TO PREVIOUS NMOCD
CONDITIONS OF APPROVAL

APR 04 2019

DISTRICT III

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Marie E. Florez TITLE Regulatory Specialist DATE 4/3/2019

Type or print name Marie E. Florez E-mail address: mflorez@logosresourcesllc.com PHONE: 505-787-2218

For State Use Only

APPROVED BY: Brandon J. Bell TITLE I & E Supervisor DATE 4/15/19

Conditions of Approval (if any):

AR

14

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First Street, Artesia, NM 88210
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District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Drive
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number	*Pool Code 47540	*Pool Name NAGEEZI GALLUP
*Property Code	*Property Name STATE 2408-32A COM	*Well Number 3H
*GRID No. 289408	*Operator Name LOGOS OPERATING, LLC	*Elevation 7002'

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
A	32	24N	8W		1232	NORTH	374	EAST	SAN JUAN

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
E	32	24N	8W		2312	NORTH	20	WEST	SAN JUAN

*Dedicated Acres 320.0 Acres N/2 - Section 32	*Joint or Infill INFILL	*Consolidation Code	*Order No
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END-OF-LATERAL (A)
2312' FNL 20' FWL
SECTION 32, T24N, R8W
LAT: 36.271735°N
LONG: 107.713465°W
DATUM: NAD1927

LAT: 36.271748°N
LONG: 107.714078°W
DATUM: NAD1983

FIRST PERFORATION (B)
2312' FNL 100' FWL
SECTION 32, T24N, R8W
LAT: 36.271735°N
LONG: 107.713194°W
DATUM: NAD1927

LAT: 36.271748°N
LONG: 107.713806°W
DATUM: NAD1983

LAST PERFORATION (C)
2312' FNL 100' FWL
SECTION 32, T24N, R8W
LAT: 36.271724°N
LONG: 107.695929°W
DATUM: NAD1927

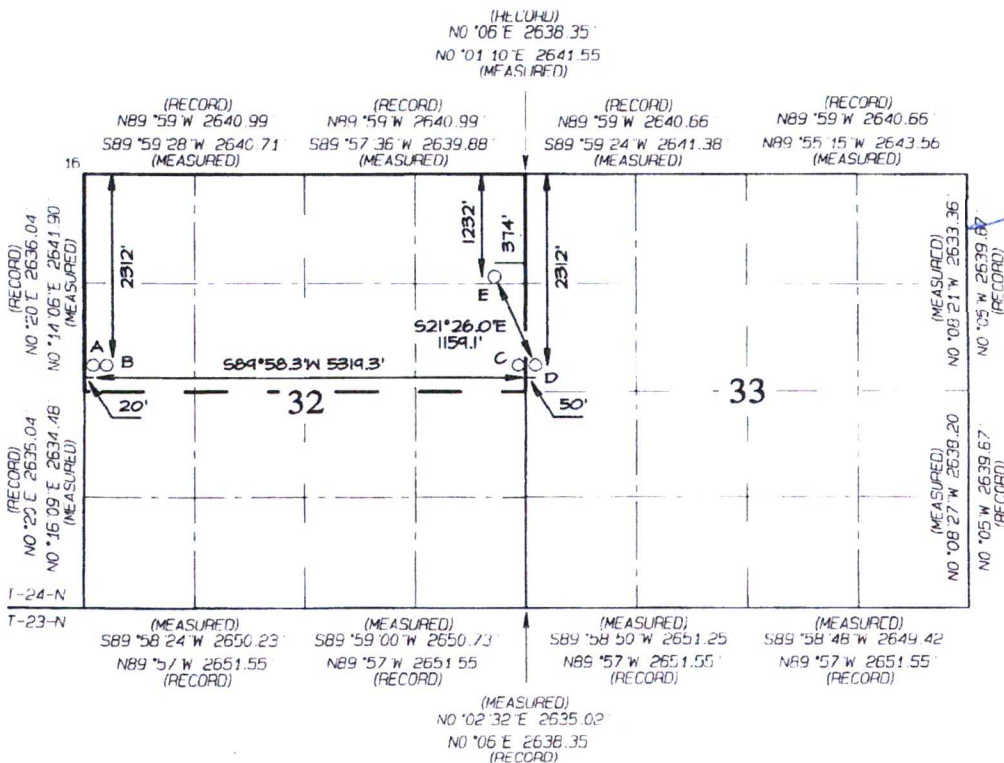
LAT: 36.271736°N
LONG: 107.696541°W
DATUM: NAD1983

POINT-OF-ENTRY (D)
2312' FNL 50' FWL
SECTION 33, T24N, R8W
LAT: 36.271723°N
LONG: 107.695420°W
DATUM: NAD1927

LAT: 36.271736°N
LONG: 107.696032°W
DATUM: NAD1983

SURFACE LOCATION (E)
1232' FNL 374' FEL
SECTION 32, T24N, R8W
LAT: 36.274689°N
LONG: 107.696852°W
DATUM: NAD1927

LAT: 36.274701°N
LONG: 107.697464°W
DATUM: NAD1983



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: Tamra Sessions Date: 3/15/19
Printed Name: Tamra Sessions
Email Address: tsessions@logosresourcesllc.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 Revised: MARCH 14, 2019
Date of Survey: MARCH 8, 2019
Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

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



LOGOS Operating, LLC Operations Plan

Note: This procedure will be adjusted onsite based upon actual conditions

Date:	March 15, 2019	Pool:	Nageezi Gallup
Well Name:	State 2408 32A Com 3H	Elevation:	7,002'
Surface Location:	Sec 32, T24N, R8W 1232 FNL, 374 FEL (36.274701° N, 107.697464° W – NAD83)	Measured Depth:	11,632'
Bottom Hole Location:	Sec 32, T24N, R8W 2312 FNL, 20 FWL (36.271748° N, 107.714078° W – NAD83)	County:	San Juan

Lease Serial #VC-0472

I. GEOLOGY

A. Formation Tops (KB): Estimated top of important geological markers:
SURFACE FORMATION - NACIMIENTO

NAME	MD	TVD	NAME	MD	TVD
OJO ALAMO	1,155	1,155	*POINT LOOKOUT	4,504	4,247
KIRTLAND	1,310	1,310	*MANCOS	4,712	4,432
*FRUITLAND	1,518	1,518	GALLUP	5,847	5,410
*PICTURED CLIFFS	1,842	1,839	KICKOFF POINT	4,908	4,606
CHACRA	2,298	2,278	LANDING POINT	6,312	5,546
*CLIFF HOUSE	3,476	3,334	TD	11,632	5,501
MENEFEE	3,519	3,372			

* indicates depth at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered.

B. MUD LOGGING PROGRAM: Mudlogger on location from KOP to TD.

C. LOGGING PROGRAM: LWD GR from surface casing to TD.

D. NATURAL GAUGES: Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

II. DRILLING

A. MUD PROGRAM: LSND mud (WBM) will be used to drill the 12-1/4" Surface hole, the 8 3/4" Directional Vertical hole, and the curve portion of the wellbore. A LSND (WBM) or (OBM) will be used to drill the lateral portion of well. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses.

B. BOP TESTING: While drill pipe is in use, the pipe rams and the blindrams will be function tested once each trip. The BOPE will be tested to **250 psi (Low) for 5 minutes** and **1500 psi (High) for 10 minutes**. Pressure test surface casing to **600 psi for 30 minutes** and intermediate casing to **1500 psi for 30 minutes**. Utilize a BOPE Testing Unit with a recording chart and appropriate test plug for testing. The drum brakes will be inspected and tested each tour. **All tests and inspections will be recorded and logged with time and results.**



III. MATERIALS

A. CASING EQUIPMENT:

CASING TYPE	OH SIZE (IN)	DEPTH (MD)	CSG SIZE	WEIGHT	GRADE	CON N
SURFACE	12.25"	320'	9.625"	36 LBS	J-55 or equiv	STC
INTERMEDIATE	8.75"	6,312'	7"	23 LBS	J-55 or equiv	LTC
PRODUCTION	6.125"	6,162' – 11,632'	4.5"	11.6 LBS	P-110 or equiv	LTC
TIE BACK	6.125"	Surf. – 6,162'	4.5"	11.6 LBS	P-110 or equiv	LTC

B. FLOAT EQUIPMENT:

1. SURFACE CASING: 9-5/8" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (4) joints of Surface Casing.
2. INTERMEDIATE CASING: 7" cement nose guide shoe with a self-fill insert float. Place float collar one joint above the shoe. Install (1) centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to 2,500 ft. Run (1) centralizer at 2,500 ft., 2,300ft., 2,000ft., 1,500 ft., and 1,000 ft.
3. PRODUCTION LINER: Run 4-1/2" Liner with cement nose guide Float Shoe+ 2jts. of 4-1/2" casing+ Landing Collar+ 4-1/2" pup joint+ 1 RSI (Sliding Sleeve) positioned inside the 100 ft Hard line. Centralizer program will be determined by wellbore condition. Set seals on Liner Hanger. Liner to be pressure tested during completion operations.

C. CEMENTING:

(Note: Volumes may be adjusted onsite due to actual conditions)

1. SURFACE: 5 bbl Fresh Water Spacer, 100 sx (161 cu.ft.) of 14.5 ppg Type 1-11 (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 600 psi. Total Volume: (160cu-ft/100 sx/ Bbls). TOC at Surface.
2. INTERMEDIATE: Stage 1: Spacer #1: 20 bbl (112 cuft) Chemwash. Lead Cement: 206 bbls, 593 sks (1157 cu.ft.), 12.3 ppg@ 1.95 cuft/sk yield. Tail Cement: 62 bbls, 267 sks, (347 cuft), 13.5 ppg@ 1.3 cu'ft/sk yield. Displacement: Displace w/ +/- 247 bbl Drilling mud or water. Total Cement: 268 bbls, 860 sks, (1504 cuft)
3. PRODUCTION LINER: Spacer #1:10 bbl (56.cu-ft) Water Spacer. Spacer #2: 40 bbl 9.5 ppg (224.6 cu-ft) Tuned Spacer III. Spacer #3: 10 bbl Water Spacer. Lead Cement: Extencem TM System. Yield 1.36 cuft/sk 13.3 ppg (494 sx / 672 cuft /120 bbls). Tail Spacer: 40 BBL of MMCR. Displacement: Displace w/ +/- 151 bbl.



IV. COMPLETION

A. CBL

CBLs and/or Temperature Surveys Will Be Performed as Needed or Required

B. PRESSURE TEST

Pressure test 4-1/2" casing to 4000 psi max, hold at 1500 psi for 30 minutes. Increase pressure to Open RSI sleeves.

C. STIMULATION

Stimulate with sand, water and N₂. Isolate stages with flow through frac plugs. Drill out frac plugs and flowback lateral.

D. PRODUCTION TUBING

Run 2-7/8", 6.5#, J-55, EUE tubing



Company: Logos Operating LLC
Project: San Juan, NM NAD83
Site: State 2408-32/A
Well: State 2408-32/A 3H
Wellbore: OH
Design: Plan #4

PROJECT DETAILS: San Juan, 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: 8.83°

Magnetic Field
Strength: 49534.0snT
Dip Angle: 62.85°
Date: 11/28/2018
Model: HDGM

WELL DETAILS: State 2408-32H 3H

GL 7002' & RKB 14' @ 7016.00usft
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 1919318.36 2763140.27 36.2747010 -107.6974640

Plan: Plan #4 (State 2408-32/A 3H/OH)

Created By: Janie Collins Date: 12:57, March 15 2019

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
State 3H LP	5546.00	-1079.33	422.11	1918239.62	2763563.90	36.2717360	-107.6960320
State 3H BHL	5501.00	-1074.54	-4897.30	1918236.94	2758244.48	36.2717480	-107.7140780
State 3H FPerf	5501.00	-1074.56	-4817.13	1918237.04	2758324.66	36.2717480	-107.7138080
State 3H LPerf	5546.00	-1079.33	272.07	1918239.41	2763413.86	36.2717360	-107.6965410

SECTION DETAILS

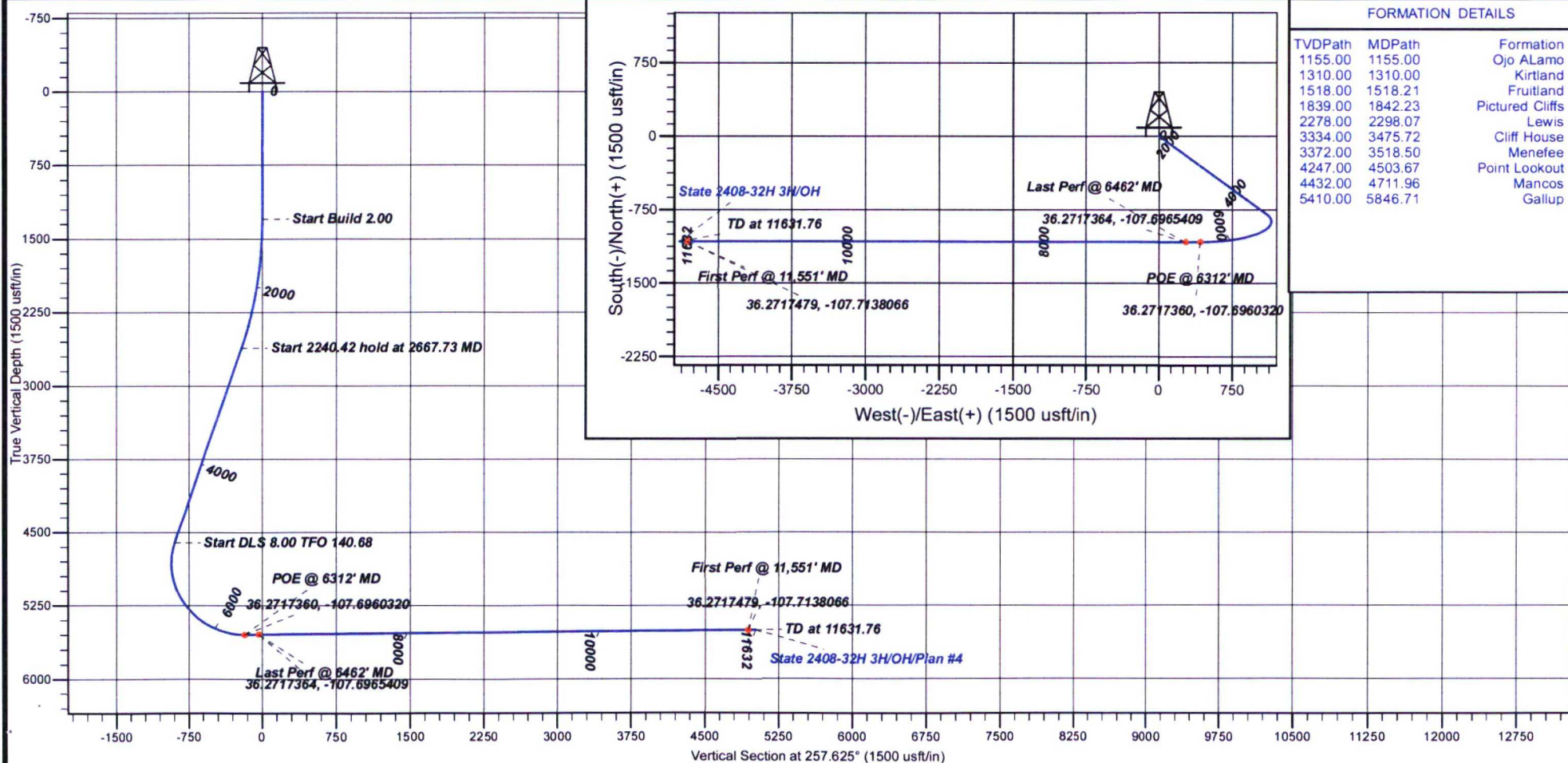
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
1300.00	0.00	0.000	1300.00	0.00	0.00	0.00	0.00	0.00	
2667.73	27.35	125.938	2616.36	-188.01	259.37	2.00	125.94	-213.05	
4906.16	27.35	125.938	4806.26	-792.21	1092.88	0.00	0.00	-897.70	
6312.16	90.48	270.052	5546.00	-1079.33	422.11	8.00	140.88	-180.98	State 3H LP
11631.76	90.48	270.052	5501.00	-1074.54	-4897.30	0.00	0.00	5013.80	State 3H BHL

CASING DETAILS

No casing data is available

FORMATION DETAILS

TVDPath	MDPath	Formation
1155.00	1155.00	Ojo Alamo
1310.00	1310.00	Kirtland
1518.00	1518.21	Fruitland
1839.00	1842.23	Pictured Cliffs
2278.00	2298.07	Lewis
3334.00	3475.72	Cliff House
3372.00	3518.50	Menefee
4247.00	4503.67	Point Lookout
4432.00	4711.96	Mancos
5410.00	5846.71	Gallup





Logos Operating LLC

San Juan, NM NAD83

State 2408-32A

State 2408-32A 3H

OH

Plan: Plan #4

Standard Planning Report

15 March, 2019



www.scientificdrilling.com



Scientific Drilling, Intl
Planning Report



Database: Grand Junction District
Company: Logos Operating LLC
Project: San Juan, NM NAD83
Site: State 2408-32A
Well: State 2408-32A 3H
Wellbore: OH
Design: Plan #4

Local Co-ordinate Reference: Well State 2408-32A 3H
TVD Reference: GL 7002' & RKB 14' @ 7016.00usft
MD Reference: GL 7002' & RKB 14' @ 7016.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	San Juan, 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	State 2408-32H				
Site Position:		Northing:	1,919,371.54 usft	Latitude:	36.2748470
From:	Lat/Long	Easting:	2,763,167.91 usft	Longitude:	-107.6973700
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.08 °

Well	State 2408-32H 3H					
Well Position	+N/-S	-53.15 usft	Northing:	1,919,318.36 usft	Latitude:	36.2747010
	+E/-W	-27.71 usft	Easting:	2,763,140.28 usft	Longitude:	-107.6974640
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	7,002.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/28/2018	8.83	62.85	49,534

Design	Plan #4				
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	257.625	

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	
1,300.00	0.00	0.000	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,667.73	27.35	125.938	2,616.36	-188.01	259.37	2.00	2.00	0.00	125.94	
4,908.16	27.35	125.938	4,606.26	-792.21	1,092.88	0.00	0.00	0.00	0.00	
6,312.16	90.48	270.052	5,546.00	-1,079.33	422.11	8.00	4.50	10.26	140.68	State 3H LP
11,631.76	90.48	270.052	5,501.00	-1,074.54	-4,897.30	0.00	0.00	0.00	0.00	State 3H BHL



Scientific Drilling, Intl
Planning Report



Database: Grand Junction District
Company: Logos Operating LLC
Project: San Juan, NM NAD83
Site: State 2408-32A
Well: State 2408-32A 3H
Wellbore: OH
Design: Plan #4

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well State 2408-32A 3H
GL 7002' & RKB 14' @ 7016.00usft
GL 7002' & RKB 14' @ 7016.00usft
True
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)
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
600.00	0.00	0.000	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.000	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.000	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.000	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.000	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.000	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.000	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.000	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,400.00	2.00	125.938	1,399.98	-1.02	1.41	-1.16	2.00	2.00	0.00
1,500.00	4.00	125.938	1,499.84	-4.10	5.65	-4.64	2.00	2.00	0.00
1,600.00	6.00	125.938	1,599.45	-9.21	12.71	-10.44	2.00	2.00	0.00
1,700.00	8.00	125.938	1,698.70	-16.36	22.57	-18.54	2.00	2.00	0.00
1,800.00	10.00	125.938	1,797.47	-25.54	35.24	-28.95	2.00	2.00	0.00
1,900.00	12.00	125.938	1,895.62	-36.74	50.69	-41.63	2.00	2.00	0.00
2,000.00	14.00	125.938	1,993.06	-49.94	68.90	-56.59	2.00	2.00	0.00
2,100.00	16.00	125.938	2,089.64	-65.13	89.85	-73.81	2.00	2.00	0.00
2,200.00	18.00	125.938	2,185.27	-82.29	113.52	-93.25	2.00	2.00	0.00
2,300.00	20.00	125.938	2,279.82	-101.40	139.88	-114.90	2.00	2.00	0.00
2,400.00	22.00	125.938	2,373.17	-122.43	168.90	-138.73	2.00	2.00	0.00
2,500.00	24.00	125.938	2,465.21	-145.36	200.53	-164.72	2.00	2.00	0.00
2,600.00	26.00	125.938	2,555.84	-170.16	234.75	-192.82	2.00	2.00	0.00
2,667.73	27.35	125.938	2,616.36	-188.01	259.37	-213.05	2.00	2.00	0.00
Start 2240.42 hold at 2667.73 MD									
2,700.00	27.35	125.938	2,645.02	-196.71	271.37	-222.91	0.00	0.00	0.00
2,800.00	27.35	125.938	2,733.84	-223.68	308.57	-253.47	0.00	0.00	0.00
2,900.00	27.35	125.938	2,822.66	-250.65	345.78	-284.03	0.00	0.00	0.00
3,000.00	27.35	125.938	2,911.47	-277.62	382.98	-314.58	0.00	0.00	0.00
3,100.00	27.35	125.938	3,000.29	-304.59	420.19	-345.14	0.00	0.00	0.00
3,200.00	27.35	125.938	3,089.11	-331.55	457.39	-375.70	0.00	0.00	0.00
3,300.00	27.35	125.938	3,177.93	-358.52	494.59	-406.26	0.00	0.00	0.00
3,400.00	27.35	125.938	3,266.75	-385.49	531.80	-436.82	0.00	0.00	0.00
3,500.00	27.35	125.938	3,355.56	-412.46	569.00	-467.38	0.00	0.00	0.00
3,600.00	27.35	125.938	3,444.38	-439.43	606.20	-497.94	0.00	0.00	0.00
3,700.00	27.35	125.938	3,533.20	-466.40	643.41	-528.50	0.00	0.00	0.00
3,800.00	27.35	125.938	3,622.02	-493.36	680.61	-559.06	0.00	0.00	0.00
3,900.00	27.35	125.938	3,710.84	-520.33	717.81	-589.62	0.00	0.00	0.00
4,000.00	27.35	125.938	3,799.65	-547.30	755.02	-620.18	0.00	0.00	0.00
4,100.00	27.35	125.938	3,888.47	-574.27	792.22	-650.74	0.00	0.00	0.00
4,200.00	27.35	125.938	3,977.29	-601.24	829.42	-681.30	0.00	0.00	0.00
4,300.00	27.35	125.938	4,066.11	-628.20	866.63	-711.85	0.00	0.00	0.00
4,400.00	27.35	125.938	4,154.93	-655.17	903.83	-742.41	0.00	0.00	0.00
4,500.00	27.35	125.938	4,243.74	-682.14	941.03	-772.97	0.00	0.00	0.00
4,600.00	27.35	125.938	4,332.56	-709.11	978.24	-803.53	0.00	0.00	0.00
4,700.00	27.35	125.938	4,421.38	-736.08	1,015.44	-834.09	0.00	0.00	0.00
4,800.00	27.35	125.938	4,510.20	-763.05	1,052.64	-864.65	0.00	0.00	0.00
4,900.00	27.35	125.938	4,599.02	-790.01	1,089.85	-895.21	0.00	0.00	0.00
4,908.16	27.35	125.938	4,606.26	-792.21	1,092.88	-897.70	0.00	0.00	0.00



Scientific Drilling, Intl
Planning Report



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Well: State 2408-32A 3H
Wellbore: OH
Design: Plan #4

Local Co-ordinate Reference: Well State 2408-32A 3H
TVD Reference: GL 7002' & RKB 14' @ 7016.00usft
MD Reference: GL 7002' & RKB 14' @ 7016.00usft
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)
Start DLS 8.00 TFO 140.88									
5,000.00	22.13	138.361	4,689.70	-817.56	1,121.50	-920.22	8.00	-5.69	13.53
5,100.00	18.09	158.636	4,783.70	-846.14	1,139.70	-931.87	8.00	-4.04	20.27
5,200.00	16.99	185.160	4,879.20	-875.19	1,144.04	-929.89	8.00	-1.09	26.52
5,300.00	19.36	209.884	4,974.35	-904.17	1,134.46	-914.32	8.00	2.36	24.72
5,400.00	24.18	227.244	5,067.28	-932.49	1,111.12	-885.45	8.00	4.83	17.36
5,500.00	30.32	238.543	5,156.20	-959.61	1,074.49	-843.86	8.00	6.13	11.30
5,600.00	37.11	246.188	5,239.37	-985.00	1,025.28	-790.35	8.00	6.80	7.64
5,700.00	44.26	251.709	5,315.17	-1,008.17	964.44	-725.96	8.00	7.15	5.52
5,800.00	51.62	255.956	5,382.13	-1,028.67	893.17	-651.95	8.00	7.36	4.25
5,900.00	59.10	259.410	5,438.94	-1,046.10	812.84	-569.76	8.00	7.48	3.45
6,000.00	66.66	262.358	5,484.50	-1,060.11	725.02	-480.98	8.00	7.56	2.95
6,100.00	74.27	264.986	5,517.93	-1,070.44	631.43	-387.34	8.00	7.61	2.63
6,200.00	81.90	267.423	5,538.56	-1,076.88	533.88	-290.68	8.00	7.64	2.44
6,300.00	89.55	269.769	5,546.00	-1,079.31	434.27	-192.86	8.00	7.65	2.35
6,312.16	90.48	270.052	5,546.00	-1,079.33	422.11	-180.98	8.00	7.65	2.33
POE @ 6312' MD - 36.2717360, -107.6960320									
6,400.00	90.48	270.052	5,545.26	-1,079.25	334.27	-95.20	0.00	0.00	0.00
6,462.16	90.48	270.052	5,544.73	-1,079.20	272.11	-34.50	0.00	0.00	0.00
Last Perf @ 6462' MD - 36.2717364, -107.6965409									
6,500.00	90.48	270.052	5,544.41	-1,079.16	234.27	2.45	0.00	0.00	0.00
6,600.00	90.48	270.052	5,543.57	-1,079.07	134.28	100.11	0.00	0.00	0.00
6,700.00	90.48	270.052	5,542.72	-1,078.98	34.28	197.76	0.00	0.00	0.00
6,800.00	90.48	270.052	5,541.87	-1,078.89	-65.72	295.41	0.00	0.00	0.00
6,900.00	90.48	270.052	5,541.03	-1,078.80	-165.71	393.07	0.00	0.00	0.00
7,000.00	90.48	270.052	5,540.18	-1,078.71	-265.71	490.72	0.00	0.00	0.00
7,100.00	90.48	270.052	5,539.34	-1,078.62	-365.71	588.37	0.00	0.00	0.00
7,200.00	90.48	270.052	5,538.49	-1,078.53	-465.70	686.03	0.00	0.00	0.00
7,300.00	90.48	270.052	5,537.64	-1,078.44	-565.70	783.68	0.00	0.00	0.00
7,400.00	90.48	270.052	5,536.80	-1,078.35	-665.69	881.34	0.00	0.00	0.00
7,500.00	90.48	270.052	5,535.95	-1,078.26	-765.69	978.99	0.00	0.00	0.00
7,600.00	90.48	270.052	5,535.11	-1,078.17	-865.69	1,076.64	0.00	0.00	0.00
7,700.00	90.48	270.052	5,534.26	-1,078.08	-965.68	1,174.30	0.00	0.00	0.00
7,800.00	90.48	270.052	5,533.41	-1,077.99	-1,065.68	1,271.95	0.00	0.00	0.00
7,900.00	90.48	270.052	5,532.57	-1,077.90	-1,165.68	1,369.60	0.00	0.00	0.00
8,000.00	90.48	270.052	5,531.72	-1,077.81	-1,265.67	1,467.26	0.00	0.00	0.00
8,100.00	90.48	270.052	5,530.88	-1,077.72	-1,365.67	1,564.91	0.00	0.00	0.00
8,200.00	90.48	270.052	5,530.03	-1,077.63	-1,465.67	1,662.56	0.00	0.00	0.00
8,300.00	90.48	270.052	5,529.18	-1,077.54	-1,565.66	1,760.22	0.00	0.00	0.00
8,400.00	90.48	270.052	5,528.34	-1,077.45	-1,665.66	1,857.87	0.00	0.00	0.00
8,500.00	90.48	270.052	5,527.49	-1,077.36	-1,765.65	1,955.52	0.00	0.00	0.00
8,600.00	90.48	270.052	5,526.65	-1,077.27	-1,865.65	2,053.18	0.00	0.00	0.00
8,700.00	90.48	270.052	5,525.80	-1,077.18	-1,965.65	2,150.83	0.00	0.00	0.00
8,800.00	90.48	270.052	5,524.95	-1,077.09	-2,065.64	2,248.48	0.00	0.00	0.00
8,900.00	90.48	270.052	5,524.11	-1,077.00	-2,165.64	2,346.14	0.00	0.00	0.00
9,000.00	90.48	270.052	5,523.26	-1,076.91	-2,265.64	2,443.79	0.00	0.00	0.00
9,100.00	90.48	270.052	5,522.42	-1,076.82	-2,365.63	2,541.45	0.00	0.00	0.00
9,200.00	90.48	270.052	5,521.57	-1,076.72	-2,465.63	2,639.10	0.00	0.00	0.00
9,300.00	90.48	270.052	5,520.73	-1,076.63	-2,565.63	2,736.75	0.00	0.00	0.00
9,400.00	90.48	270.052	5,519.88	-1,076.54	-2,665.62	2,834.41	0.00	0.00	0.00
9,500.00	90.48	270.052	5,519.03	-1,076.45	-2,765.62	2,932.06	0.00	0.00	0.00
9,600.00	90.48	270.052	5,518.19	-1,076.36	-2,865.62	3,029.71	0.00	0.00	0.00
9,700.00	90.48	270.052	5,517.34	-1,076.27	-2,965.61	3,127.37	0.00	0.00	0.00



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Planning Report



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Wellbore: OH
Design: Plan #4

Local Co-ordinate Reference: Well State 2408-32A 3H
TVD Reference: GL 7002' & RKB 14' @ 7016.00usft
MD Reference: GL 7002' & RKB 14' @ 7016.00usft
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)
9,800.00	90.48	270.052	5,516.50	-1,076.18	-3,065.61	3,225.02	0.00	0.00	0.00
9,900.00	90.48	270.052	5,515.65	-1,076.09	-3,165.60	3,322.67	0.00	0.00	0.00
10,000.00	90.48	270.052	5,514.80	-1,076.00	-3,265.60	3,420.33	0.00	0.00	0.00
10,100.00	90.48	270.052	5,513.96	-1,075.91	-3,365.60	3,517.98	0.00	0.00	0.00
10,200.00	90.48	270.052	5,513.11	-1,075.82	-3,465.59	3,615.63	0.00	0.00	0.00
10,300.00	90.48	270.052	5,512.27	-1,075.73	-3,565.59	3,713.29	0.00	0.00	0.00
10,400.00	90.48	270.052	5,511.42	-1,075.64	-3,665.59	3,810.94	0.00	0.00	0.00
10,500.00	90.48	270.052	5,510.57	-1,075.55	-3,765.58	3,908.60	0.00	0.00	0.00
10,600.00	90.48	270.052	5,509.73	-1,075.46	-3,865.58	4,006.25	0.00	0.00	0.00
10,700.00	90.48	270.052	5,508.88	-1,075.37	-3,965.58	4,103.90	0.00	0.00	0.00
10,800.00	90.48	270.052	5,508.04	-1,075.28	-4,065.57	4,201.56	0.00	0.00	0.00
10,900.00	90.48	270.052	5,507.19	-1,075.19	-4,165.57	4,299.21	0.00	0.00	0.00
11,000.00	90.48	270.052	5,506.34	-1,075.10	-4,265.56	4,396.86	0.00	0.00	0.00
11,100.00	90.48	270.052	5,505.50	-1,075.01	-4,365.56	4,494.52	0.00	0.00	0.00
11,200.00	90.48	270.052	5,504.65	-1,074.92	-4,465.56	4,592.17	0.00	0.00	0.00
11,300.00	90.48	270.052	5,503.81	-1,074.83	-4,565.55	4,689.82	0.00	0.00	0.00
11,400.00	90.48	270.052	5,502.96	-1,074.74	-4,665.55	4,787.48	0.00	0.00	0.00
11,500.00	90.48	270.052	5,502.11	-1,074.65	-4,765.55	4,885.13	0.00	0.00	0.00
11,551.76	90.48	270.052	5,501.68	-1,074.60	-4,817.30	4,935.68	0.00	0.00	0.00
First Perf @ 11,551' MD - 36.2717479, -107.7138066									
11,600.00	90.48	270.052	5,501.27	-1,074.56	-4,865.54	4,982.78	0.00	0.00	0.00
11,631.76	90.48	270.052	5,501.00	-1,074.53	-4,897.30	5,013.80	0.00	0.00	0.00
TD at 11631.76									

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
State 3H BHL - plan misses target center by 0.01usft at 11631.76usft MD (5501.00 TVD, -1074.53 N, -4897.30 E) - Point	0.00	0.000	5,501.00	-1,074.54	-4,897.30	1,918,236.94	2,758,244.48	36.2717480	-107.7140780
State 3H FPerf - plan misses target center by 0.68usft at 11551.59usft MD (5501.68 TVD, -1074.60 N, -4817.13 E) - Point	0.00	0.000	5,501.00	-1,074.56	-4,817.13	1,918,237.04	2,758,324.66	36.2717480	-107.7138060
State 3H LP - plan hits target center - Point	0.00	0.000	5,546.00	-1,079.33	422.11	1,918,239.62	2,763,563.90	36.2717360	-107.6960320
State 3H LPerf - plan misses target center by 1.28usft at 6462.19usft MD (5544.73 TVD, -1079.20 N, 272.08 E) - Point	0.00	0.000	5,546.00	-1,079.33	272.07	1,918,239.41	2,763,413.86	36.2717360	-107.6965410



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Design: Plan #4

Local Co-ordinate Reference: Well State 2408-32A 3H
TVD Reference: GL 7002' & RKB 14' @ 7016.00usft
MD Reference: GL 7002' & RKB 14' @ 7016.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,155.00	1,155.00	Ojo Alamo		0.00	0.000
1,310.00	1,310.00	Kirtland		0.00	0.000
1,518.21	1,518.00	Fruitland		0.00	0.000
1,842.23	1,839.00	Pictured Cliffs		0.00	0.000
2,298.07	2,278.00	Lewis		0.00	0.000
3,475.72	3,334.00	Cliff House		0.00	0.000
3,518.50	3,372.00	Menefee		0.00	0.000
4,503.67	4,247.00	Point Lookout		0.00	0.000
4,711.96	4,432.00	Mancos		0.00	0.000
5,846.71	5,410.00	Gallup		0.00	0.000

Plan Annotations

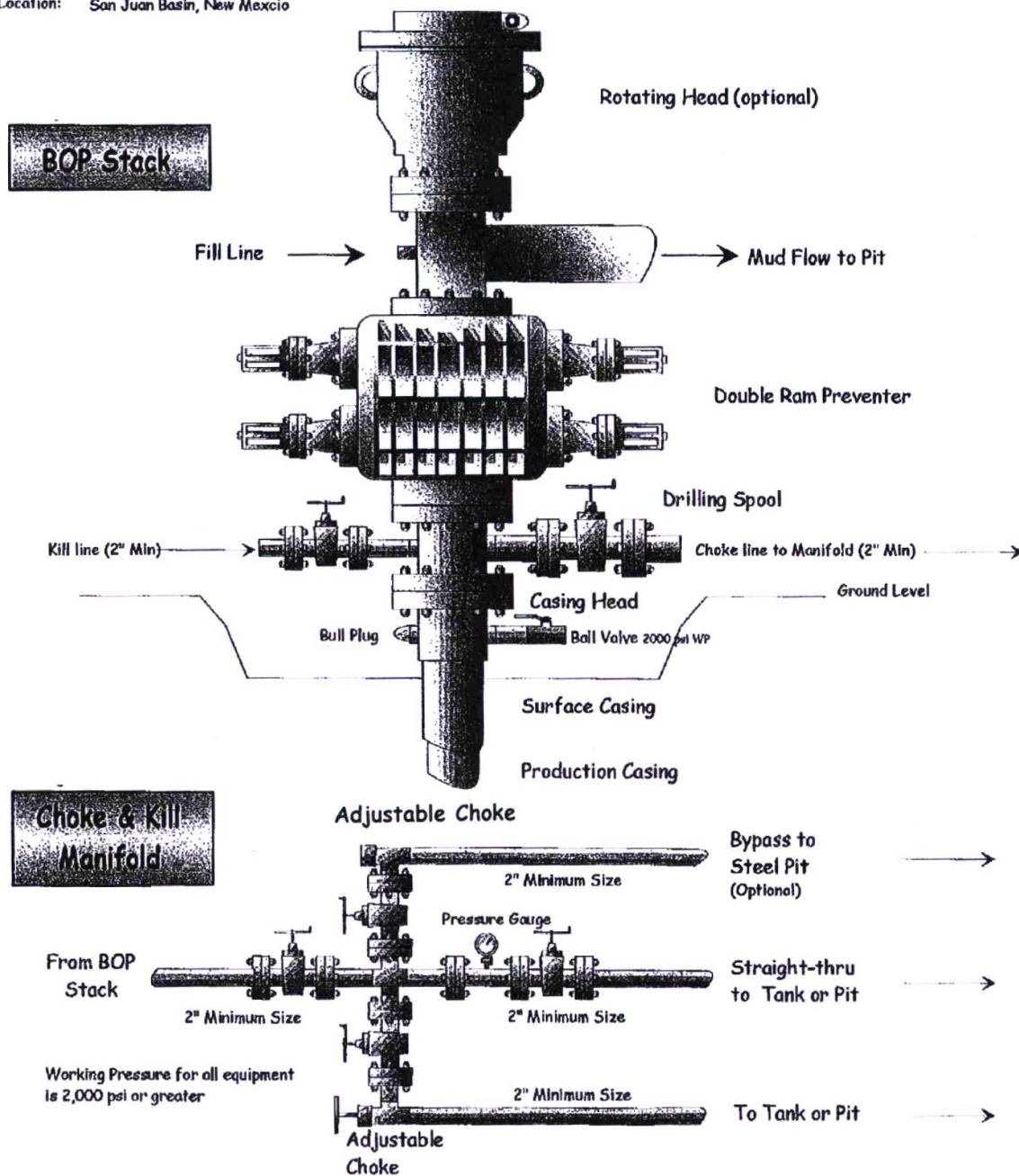
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,300.00	1,300.00	0.00	0.00	Start Build 2.00
2,667.73	2,616.36	-188.01	259.37	Start 2240.42 hold at 2667.73 MD
4,908.16	4,606.26	-792.21	1,092.88	Start DLS 8.00 TFO 140.68
6,312.16	5,546.00	-1,079.33	422.11	POE @ 6312' MD
6,312.16	5,546.00	-1,079.33	422.11	36.2717360, -107.6960320
6,462.16	5,544.73	-1,079.20	272.11	Last Perf @ 6462' MD
6,462.16	5,544.73	-1,079.20	272.11	36.2717364, -107.6965409
11,551.76	5,501.68	-1,074.60	-4,817.30	First Perf @ 11,551' MD
11,551.76	5,501.68	-1,074.60	-4,817.30	36.2717479, -107.7138066
11,631.76	5,501.00	-1,074.53	-4,897.30	TD at 11631.76

Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

Exhibit #1 Typical BOP setup

Location: San Juan Basin, New Mexico



Directions from the Intersection of US Hwy 550 & US Hwy 64
in Bloomfield, NM to Logos Operating, LLC State 2408-32A COM #3H
1232' FNL & 374' FEL, Section 32, T24N, R8W, N.M.P.M., San Juan County, NM

Latitude: 36.274701°N Longitude: 107.697464°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 36.4 miles to Mile Marker 115.3;

Go Left (Easterly) on existing roadway for 2.3 miles to fork in roadway;

Go Right (Easterly) on existing roadway for 0.6 miles to fork in roadway;

Go Right (Northerly) which is straight for 0.1 mile to fork in roadway;

Go Right (Northerly) for 425' to pad entrance way on left-hand side of existing roadway which continues to staked Logos State 2408-32A COM #3H location.