

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

Form C-103
Revised July 18, 2013

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

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. 30-045-35912
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>310'</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>002H</u>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 7002'		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.

ADHERE TO PREVIOUS NMOCD
CONDITIONS OF APPROVAL

NMOCD

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 Broll TITLE IDE Supervisor DATE 4/15/19

Conditions of Approval (if any):

AY

N

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

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811 S. First Street, Artesia, NM 88210
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1000 Rio Brazos Road, Aztec, NM 87410
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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 30-045-35912		*Pool Code 47540	*Pool Name NAGEEZI GALLUP
*Property Code 322997	*Property Name STATE 2408-32A COM		*Well Number 2H
*OGRIC No. 289408	*Operator Name LOGOS OPERATING, LLC		*Elevation 7002'

¹⁰ Surface Location

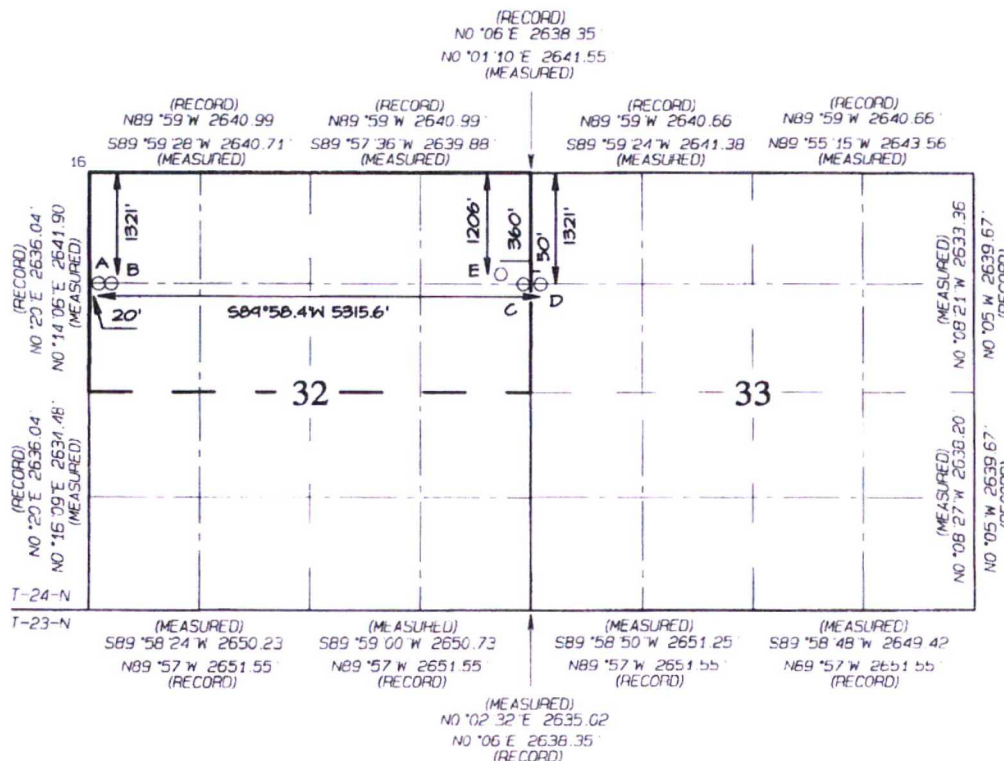
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	32	24N	8W		1206	NORTH	360	EAST	SAN JUAN

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		1321	NORTH	20	WEST	SAN JUAN

*Dedicated Acres 320.0 Acres N/2 - Section 32	*Joint or Infill	*Consolidation Code	*Order No.
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END-OF-LATERAL (A) 1321' FNL 20' FWL SECTION 32, T24N, R8W LAT: 36.274458°N LONG: 107.713447°W DATUM: NAD1927 LAT: 36.274470°N LONG: 107.714060°W DATUM: NAD1983	FIRST PERFORATION (B) 1321' FNL 100' FWL SECTION 32, T24N, R8W LAT: 36.274457°N LONG: 107.713176°W DATUM: NAD1927 LAT: 36.274470°N LONG: 107.713788°W DATUM: NAD1983	LAST PERFORATION (C) 1321' FNL 100' FWL SECTION 32, T24N, R8W LAT: 36.274445°N LONG: 107.695923°W DATUM: NAD1927 LAT: 36.274458°N LONG: 107.696535°W DATUM: NAD1983	POINT-OF-ENTRY (D) 1321' FNL 50' FWL SECTION 33, T24N, R8W LAT: 36.274445°N LONG: 107.695415°W DATUM: NAD1927 LAT: 36.274457°N LONG: 107.696026°W DATUM: NAD1983	SURFACE LOCATION (E) 1206' FNL 360' FEL SECTION 32, T24N, R8W LAT: 36.274762°N LONG: 107.696805°W DATUM: NAD1927 LAT: 36.274774°N LONG: 107.697417°W DATUM: NAD1983
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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
E-mail 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 18, 2019	Pool:	Nageezi Gallup
Well Name:	State 2408 32A Com 2H	Elevation:	7,002'
Surface Location:	Sec 32, T24N, R8W 1206 FNL, 360 FEL (36.274774° N, 107.697417° W – NAD83)	Measured Depth:	11,492'
Bottom Hole Location:	Sec 32, T24N, R8W 1321 FNL, 20 FWL (36.274470° N, 107.714060° 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	1,165	1,165	*POINT LOOKOUT	4,429	4,257
KIRTLAND	1,320	1,320	*MANCOS	4,629	4,442
*FRUITLAND	1,518	1,518	GALLUP	5,738	5,431
*PICTURED CLIFFS	1,852	1,849	KICKOFF POINT	4,771	4,574
CHACRA	2,306	2,288	LANDING POINT	6,176	5,558
*CLIFF HOUSE	3,444	3,344	TD	11,492	5,522
MENEFEE	3,485	3,382			

* 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.**

STATE 2408 32A 2H



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"	6,176	7"	23 LBS	J-55 or equiv	LTC
PRODUCTION	6.125"	6,026' – 11,492'	4.5"	11.6 LBS	P-110 or equiv	LTC
TIE BACK	6.125"	Surf. – 6,026	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: 200 bbls, 576 sks (1124 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/ +/- 241 bbl Drilling mud or water. Total Cement: 262 bbls, 844 sks, (1471 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 / 671 cuft /120 bbls). Tail Spacer: 40 BBL of MMCR. Displacement: Displace w/ +/- 133 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 2408-32A
Well: State 2408-32A 2H
Wellbore: OH
Design: Plan #3

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 2H

GL 7002' & RKB 14' @ 7016.00usft
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 1919344.95 2763154.09 36.2747740 -107.6974170

Plan: Plan #3 (State 2408-32A 2H/OH)

Created By: Janie Collins Date: 12:49, March 15 2019

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
State 2H LP	5558.00	-115.39	410.01	1919230.13	2763564.26	36.2744570	-107.6960260
State 2H BHL	5522.00	-110.24	-4905.68	1919227.82	2758248.57	36.2744700	-107.7140600
State 2H FPerf	5522.00	-110.26	-4825.51	1919227.92	2758328.74	36.2744700	-107.7137880
State 2H LPerf	5558.00	-115.03	259.98	1919230.28	2763414.23	36.2744580	-107.6965350

SECTION DETAILS

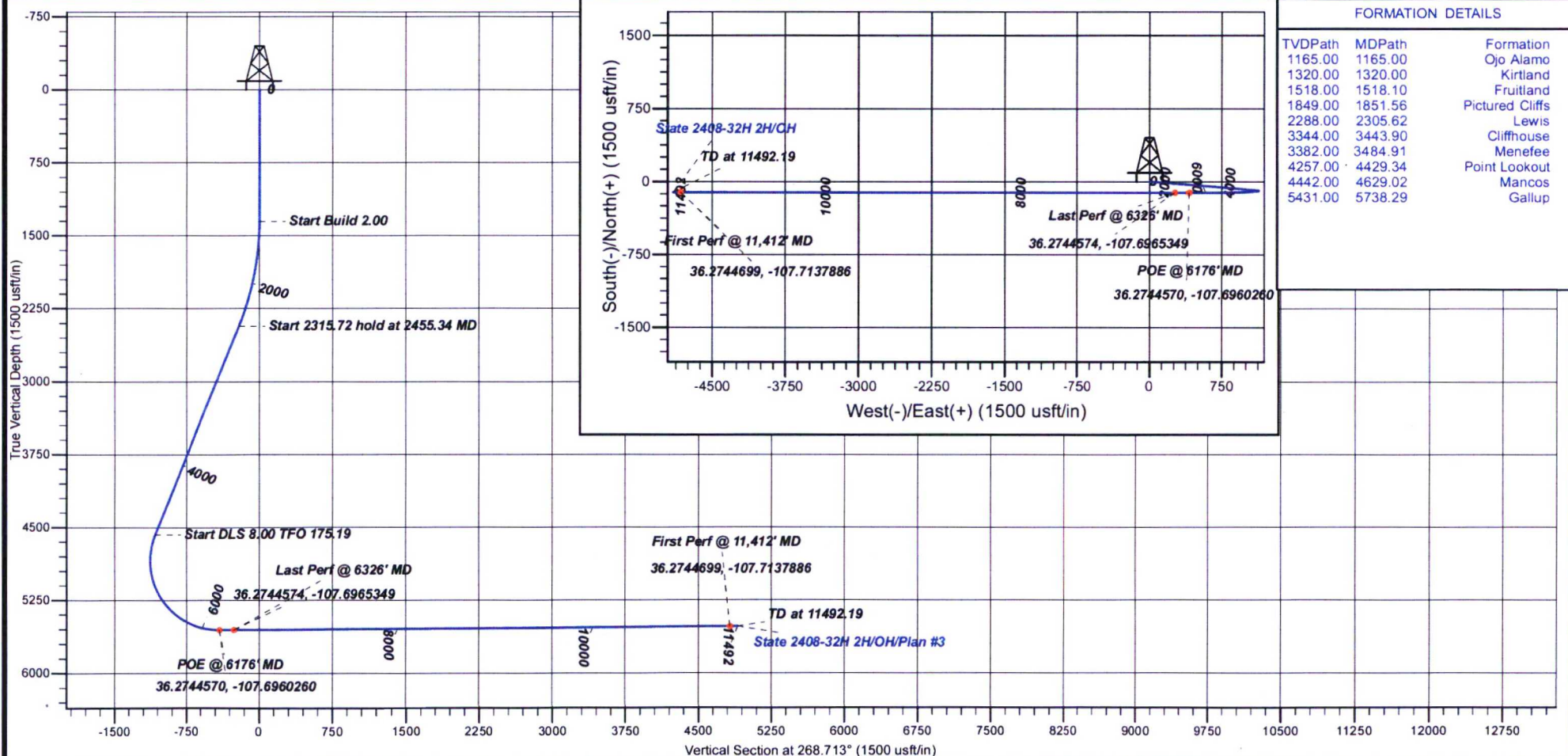
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dieg	TFace	VSec	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
1350.00	0.00	0.000	1350.00	0.00	0.00	0.00	0.00	0.00	
2455.34	22.11	94.497	2428.12	-16.51	209.96	2.00	94.50	-209.54	
4771.06	22.11	94.497	4573.59	-84.85	1078.76	0.00	0.00	-1076.58	
6176.37	90.39	270.056	5558.00	-115.39	410.01	8.00	175.19	-407.31	State 2H LP
11492.19	90.39	270.056	5522.00	-110.24	-4905.68	0.00	0.00	4906.92	State 2H BHL

CASING DETAILS

No casing data is available

FORMATION DETAILS

TVDPath	MDPath	Formation
1165.00	1165.00	Ojo Alamo
1320.00	1320.00	Kirtland
1518.00	1518.10	Fruitland
1849.00	1851.56	Pictured Cliffs
2288.00	2305.62	Lewis
3344.00	3443.90	Cliffhouse
3382.00	3484.91	Menefee
4257.00	4429.34	Point Lookout
4442.00	4629.02	Mancos
5431.00	5738.29	Gallup





Logos Operating LLC

San Juan, NM NAD83

State 2408-32A

State 2408-32A 2H

OH

Plan: Plan #3

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 2H
Wellbore: OH
Design: Plan #3

Local Co-ordinate Reference: Well State 2408-32A 2H
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 2H				
Well Position	+N/-S	-26.57 usft	Northing:	1,919,344.95 usft	Latitude: 36.2747740
	+E/-W	-13.85 usft	Easting:	2,763,154.09 usft	Longitude: -107.6974170
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 #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	268.713

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,350.00	0.00	0.000	1,350.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,455.34	22.11	94.497	2,428.12	-16.51	209.96	2.00	2.00	0.00	94.50	
4,771.06	22.11	94.497	4,573.59	-84.85	1,078.76	0.00	0.00	0.00	0.00	
6,176.37	90.39	270.056	5,558.00	-115.39	410.01	8.00	4.86	12.49	175.19	State 2H LP
11,492.19	90.39	270.056	5,522.00	-110.24	-4,905.68	0.00	0.00	0.00	0.00	State 2H 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 2H
Wellbore: OH
Design: Plan #3

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

Well State 2408-32A 2H
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
1,350.00	0.00	0.000	1,350.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,400.00	1.00	94.497	1,400.00	-0.03	0.43	-0.43	2.00	2.00	0.00
1,500.00	3.00	94.497	1,499.93	-0.31	3.91	-3.91	2.00	2.00	0.00
1,600.00	5.00	94.497	1,599.68	-0.85	10.87	-10.85	2.00	2.00	0.00
1,700.00	7.00	94.497	1,699.13	-1.67	21.29	-21.24	2.00	2.00	0.00
1,800.00	9.00	94.497	1,798.15	-2.77	35.16	-35.09	2.00	2.00	0.00
1,900.00	11.00	94.497	1,896.63	-4.13	52.47	-52.37	2.00	2.00	0.00
2,000.00	13.00	94.497	1,994.44	-5.76	73.20	-73.05	2.00	2.00	0.00
2,100.00	15.00	94.497	2,091.46	-7.65	97.31	-97.12	2.00	2.00	0.00
2,200.00	17.00	94.497	2,187.58	-9.82	124.79	-124.54	2.00	2.00	0.00
2,300.00	19.00	94.497	2,282.68	-12.24	155.60	-155.28	2.00	2.00	0.00
2,400.00	21.00	94.497	2,376.65	-14.92	189.69	-189.31	2.00	2.00	0.00
2,455.34	22.11	94.497	2,428.12	-16.51	209.96	-209.54	2.00	2.00	0.00
Start 2315.72 hold at 2455.34 MD									
2,500.00	22.11	94.497	2,469.49	-17.83	226.71	-226.26	0.00	0.00	0.00
2,600.00	22.11	94.497	2,562.14	-20.78	264.23	-263.70	0.00	0.00	0.00
2,700.00	22.11	94.497	2,654.79	-23.73	301.75	-301.14	0.00	0.00	0.00
2,800.00	22.11	94.497	2,747.44	-26.68	339.27	-338.58	0.00	0.00	0.00
2,900.00	22.11	94.497	2,840.09	-29.64	376.79	-376.02	0.00	0.00	0.00
3,000.00	22.11	94.497	2,932.74	-32.59	414.30	-413.47	0.00	0.00	0.00
3,100.00	22.11	94.497	3,025.39	-35.54	451.82	-450.91	0.00	0.00	0.00
3,200.00	22.11	94.497	3,118.03	-38.49	489.34	-488.35	0.00	0.00	0.00
3,300.00	22.11	94.497	3,210.68	-41.44	526.86	-525.79	0.00	0.00	0.00
3,400.00	22.11	94.497	3,303.33	-44.39	564.37	-563.23	0.00	0.00	0.00
3,500.00	22.11	94.497	3,395.98	-47.34	601.89	-600.68	0.00	0.00	0.00
3,600.00	22.11	94.497	3,488.63	-50.29	639.41	-638.12	0.00	0.00	0.00
3,700.00	22.11	94.497	3,581.28	-53.24	676.93	-675.56	0.00	0.00	0.00
3,800.00	22.11	94.497	3,673.92	-56.19	714.44	-713.00	0.00	0.00	0.00
3,900.00	22.11	94.497	3,766.57	-59.14	751.96	-750.44	0.00	0.00	0.00
4,000.00	22.11	94.497	3,859.22	-62.10	789.48	-787.88	0.00	0.00	0.00
4,100.00	22.11	94.497	3,951.87	-65.05	827.00	-825.33	0.00	0.00	0.00
4,200.00	22.11	94.497	4,044.52	-68.00	864.51	-862.77	0.00	0.00	0.00
4,300.00	22.11	94.497	4,137.17	-70.95	902.03	-900.21	0.00	0.00	0.00
4,400.00	22.11	94.497	4,229.81	-73.90	939.55	-937.65	0.00	0.00	0.00
4,500.00	22.11	94.497	4,322.46	-76.85	977.07	-975.09	0.00	0.00	0.00
4,600.00	22.11	94.497	4,415.11	-79.80	1,014.58	-1,012.54	0.00	0.00	0.00
4,700.00	22.11	94.497	4,507.76	-82.75	1,052.10	-1,049.98	0.00	0.00	0.00
4,771.06	22.11	94.497	4,573.59	-84.85	1,078.76	-1,076.58	0.00	0.00	0.00



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 2H
Wellbore: OH
Design: Plan #3

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

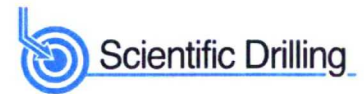
Well State 2408-32A 2H
GL 7002' & RKB 14' @ 7016.00usft
GL 7002' & RKB 14' @ 7016.00usft
True
Minimum Curvature

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)
Start DLS 8.00 TFO 175.19									
4,800.00	19.80	95.070	4,600.62	-85.71	1,089.08	-1,086.87	8.00	-7.97	1.98
4,900.00	11.86	98.684	4,696.75	-88.76	1,116.15	-1,113.87	8.00	-7.94	3.61
5,000.00	4.14	115.905	4,795.72	-91.89	1,129.57	-1,127.22	8.00	-7.72	17.22
5,100.00	4.64	247.193	4,895.58	-95.04	1,129.08	-1,126.66	8.00	0.51	131.29
5,200.00	12.41	261.801	4,994.41	-98.15	1,114.69	-1,112.20	8.00	7.77	14.61
5,300.00	20.36	265.166	5,090.28	-101.15	1,086.68	-1,084.13	8.00	7.95	3.37
5,400.00	28.33	266.689	5,181.31	-103.99	1,045.59	-1,042.99	8.00	7.98	1.52
5,500.00	36.32	267.584	5,265.75	-106.62	992.23	-989.58	8.00	7.99	0.89
5,600.00	44.31	268.192	5,341.94	-108.97	927.63	-924.95	8.00	7.99	0.61
5,700.00	52.30	268.646	5,408.40	-111.01	853.05	-850.34	8.00	7.99	0.45
5,800.00	60.30	269.012	5,463.85	-112.70	769.94	-767.22	8.00	7.99	0.37
5,900.00	68.29	269.324	5,507.19	-113.99	679.92	-677.19	8.00	8.00	0.31
6,000.00	76.29	269.602	5,537.59	-114.88	584.74	-582.02	8.00	8.00	0.28
6,100.00	84.28	269.862	5,554.45	-115.34	486.26	-483.55	8.00	8.00	0.26
6,176.37	90.39	270.056	5,558.00	-115.39	410.01	-407.31	8.00	8.00	0.25
POE @ 6176' MD - 36.2744570, -107.6960260									
6,200.00	90.39	270.056	5,557.84	-115.37	386.38	-383.69	0.00	0.00	0.00
6,300.00	90.39	270.056	5,557.16	-115.27	286.38	-283.72	0.00	0.00	0.00
6,326.37	90.39	270.056	5,556.98	-115.25	260.01	-257.36	0.00	0.00	0.00
Last Perf @ 6326' MD - 36.2744574, -107.6965349									
6,400.00	90.39	270.056	5,556.49	-115.18	186.38	-183.75	0.00	0.00	0.00
6,500.00	90.39	270.056	5,555.81	-115.08	86.39	-83.78	0.00	0.00	0.00
6,600.00	90.39	270.056	5,555.13	-114.98	-13.61	16.19	0.00	0.00	0.00
6,700.00	90.39	270.056	5,554.45	-114.88	-113.61	116.16	0.00	0.00	0.00
6,800.00	90.39	270.056	5,553.78	-114.79	-213.61	216.13	0.00	0.00	0.00
6,900.00	90.39	270.056	5,553.10	-114.69	-313.60	316.10	0.00	0.00	0.00
7,000.00	90.39	270.056	5,552.42	-114.59	-413.60	416.07	0.00	0.00	0.00
7,100.00	90.39	270.056	5,551.75	-114.50	-513.60	516.04	0.00	0.00	0.00
7,200.00	90.39	270.056	5,551.07	-114.40	-613.60	616.01	0.00	0.00	0.00
7,300.00	90.39	270.056	5,550.39	-114.30	-713.60	715.98	0.00	0.00	0.00
7,400.00	90.39	270.056	5,549.71	-114.20	-813.59	815.95	0.00	0.00	0.00
7,500.00	90.39	270.056	5,549.04	-114.11	-913.59	915.92	0.00	0.00	0.00
7,600.00	90.39	270.056	5,548.36	-114.01	-1,013.59	1,015.89	0.00	0.00	0.00
7,700.00	90.39	270.056	5,547.68	-113.91	-1,113.59	1,115.86	0.00	0.00	0.00
7,800.00	90.39	270.056	5,547.00	-113.82	-1,213.58	1,215.83	0.00	0.00	0.00
7,900.00	90.39	270.056	5,546.33	-113.72	-1,313.58	1,315.80	0.00	0.00	0.00
8,000.00	90.39	270.056	5,545.65	-113.62	-1,413.58	1,415.77	0.00	0.00	0.00
8,100.00	90.39	270.056	5,544.97	-113.52	-1,513.58	1,515.75	0.00	0.00	0.00
8,200.00	90.39	270.056	5,544.30	-113.43	-1,613.57	1,615.72	0.00	0.00	0.00
8,300.00	90.39	270.056	5,543.62	-113.33	-1,713.57	1,715.69	0.00	0.00	0.00
8,400.00	90.39	270.056	5,542.94	-113.23	-1,813.57	1,815.66	0.00	0.00	0.00
8,500.00	90.39	270.056	5,542.26	-113.14	-1,913.57	1,915.63	0.00	0.00	0.00
8,600.00	90.39	270.056	5,541.59	-113.04	-2,013.57	2,015.60	0.00	0.00	0.00
8,700.00	90.39	270.056	5,540.91	-112.94	-2,113.56	2,115.57	0.00	0.00	0.00
8,800.00	90.39	270.056	5,540.23	-112.84	-2,213.56	2,215.54	0.00	0.00	0.00
8,900.00	90.39	270.056	5,539.56	-112.75	-2,313.56	2,315.51	0.00	0.00	0.00
9,000.00	90.39	270.056	5,538.88	-112.65	-2,413.56	2,415.48	0.00	0.00	0.00
9,100.00	90.39	270.056	5,538.20	-112.55	-2,513.55	2,515.45	0.00	0.00	0.00
9,200.00	90.39	270.056	5,537.52	-112.46	-2,613.55	2,615.42	0.00	0.00	0.00
9,300.00	90.39	270.056	5,536.85	-112.36	-2,713.55	2,715.39	0.00	0.00	0.00
9,400.00	90.39	270.056	5,536.17	-112.26	-2,813.55	2,815.36	0.00	0.00	0.00
9,500.00	90.39	270.056	5,535.49	-112.16	-2,913.54	2,915.33	0.00	0.00	0.00



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 2H
Wellbore: OH
Design: Plan #3

Local Co-ordinate Reference: Well State 2408-32A 2H
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)
9,600.00	90.39	270.056	5,534.81	-112.07	-3,013.54	3,015.30	0.00	0.00	0.00
9,700.00	90.39	270.056	5,534.14	-111.97	-3,113.54	3,115.27	0.00	0.00	0.00
9,800.00	90.39	270.056	5,533.46	-111.87	-3,213.54	3,215.24	0.00	0.00	0.00
9,900.00	90.39	270.056	5,532.78	-111.78	-3,313.53	3,315.21	0.00	0.00	0.00
10,000.00	90.39	270.056	5,532.11	-111.68	-3,413.53	3,415.18	0.00	0.00	0.00
10,100.00	90.39	270.056	5,531.43	-111.58	-3,513.53	3,515.15	0.00	0.00	0.00
10,200.00	90.39	270.056	5,530.75	-111.48	-3,613.53	3,615.12	0.00	0.00	0.00
10,300.00	90.39	270.056	5,530.07	-111.39	-3,713.53	3,715.09	0.00	0.00	0.00
10,400.00	90.39	270.056	5,529.40	-111.29	-3,813.52	3,815.06	0.00	0.00	0.00
10,500.00	90.39	270.056	5,528.72	-111.19	-3,913.52	3,915.03	0.00	0.00	0.00
10,600.00	90.39	270.056	5,528.04	-111.10	-4,013.52	4,015.00	0.00	0.00	0.00
10,700.00	90.39	270.056	5,527.36	-111.00	-4,113.52	4,114.97	0.00	0.00	0.00
10,800.00	90.39	270.056	5,526.69	-110.90	-4,213.51	4,214.94	0.00	0.00	0.00
10,900.00	90.39	270.056	5,526.01	-110.80	-4,313.51	4,314.91	0.00	0.00	0.00
11,000.00	90.39	270.056	5,525.33	-110.71	-4,413.51	4,414.88	0.00	0.00	0.00
11,100.00	90.39	270.056	5,524.66	-110.61	-4,513.51	4,514.85	0.00	0.00	0.00
11,200.00	90.39	270.056	5,523.98	-110.51	-4,613.50	4,614.82	0.00	0.00	0.00
11,300.00	90.39	270.056	5,523.30	-110.42	-4,713.50	4,714.79	0.00	0.00	0.00
11,400.00	90.39	270.056	5,522.62	-110.32	-4,813.50	4,814.76	0.00	0.00	0.00
11,412.19	90.39	270.056	5,522.54	-110.31	-4,825.69	4,826.95	0.00	0.00	0.00
First Perf @ 11,412' MD - 36.2744699, -107.7137886									
11,492.19	90.39	270.056	5,522.00	-110.24	-4,905.68	4,906.92	0.00	0.00	0.00
TD at 11492.19									

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 2H FPerf - plan misses target center by 0.55usft at 11412.01usft MD (5522.54 TVD, -110.31 N, -4825.51 E) - Point	0.00	0.000	5,522.00	-110.26	-4,825.51	1,919,227.92	2,758,328.74	36.2744700	-107.7137880
State 2H BHL - plan hits target center - Point	0.00	0.000	5,522.00	-110.24	-4,905.68	1,919,227.82	2,758,248.57	36.2744700	-107.7140600
State 2H LP - plan hits target center - Point	0.00	0.000	5,558.00	-115.39	410.01	1,919,230.13	2,763,564.26	36.2744570	-107.6960260
State 2H LPerf - plan misses target center by 1.04usft at 6326.40usft MD (5556.98 TVD, -115.25 N, 259.98 E) - Point	0.00	0.000	5,558.00	-115.03	259.98	1,919,230.29	2,763,414.23	36.2744580	-107.6965350



Scientific Drilling, Intl
Planning Report



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Well: State 2408-32A 2H
Wellbore: OH
Design: Plan #3

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

Well State 2408-32A 2H
GL 7002' & RKB 14' @ 7016.00usft
GL 7002' & RKB 14' @ 7016.00usft
True
Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,165.00	1,165.00	Ojo Alamo		0.00	0.000
1,320.00	1,320.00	Kirtland		0.00	0.000
1,518.10	1,518.00	Fruitland		0.00	0.000
1,851.56	1,849.00	Pictured Cliffs		0.00	0.000
2,305.62	2,288.00	Lewis		0.00	0.000
3,443.90	3,344.00	Cliffhouse		0.00	0.000
3,484.91	3,382.00	Menefee		0.00	0.000
4,429.34	4,257.00	Point Lookout		0.00	0.000
4,629.02	4,442.00	Mancos		0.00	0.000
5,738.29	5,431.00	Gallup		0.00	0.000

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,350.00	1,350.00	0.00	0.00	Start Build 2.00
2,455.34	2,428.12	-16.51	209.96	Start 2315.72 hold at 2455.34 MD
4,771.06	4,573.59	-84.85	1,078.76	Start DLS 8.00 TFO 175.19
6,176.37	5,558.00	-115.39	410.01	POE @ 6176' MD
6,176.37	5,558.00	-115.39	410.01	36.2744570, -107.6960260
6,326.37	5,556.98	-115.25	260.01	Last Perf @ 6326' MD
6,326.37	5,556.98	-115.25	260.01	36.2744574, -107.6965349
11,412.19	5,522.54	-110.31	-4,825.69	First Perf @ 11,412' MD
11,412.19	5,522.54	-110.31	-4,825.69	36.2744699, -107.7137886
11,492.19	5,522.00	-110.24	-4,905.68	TD at 11492.19

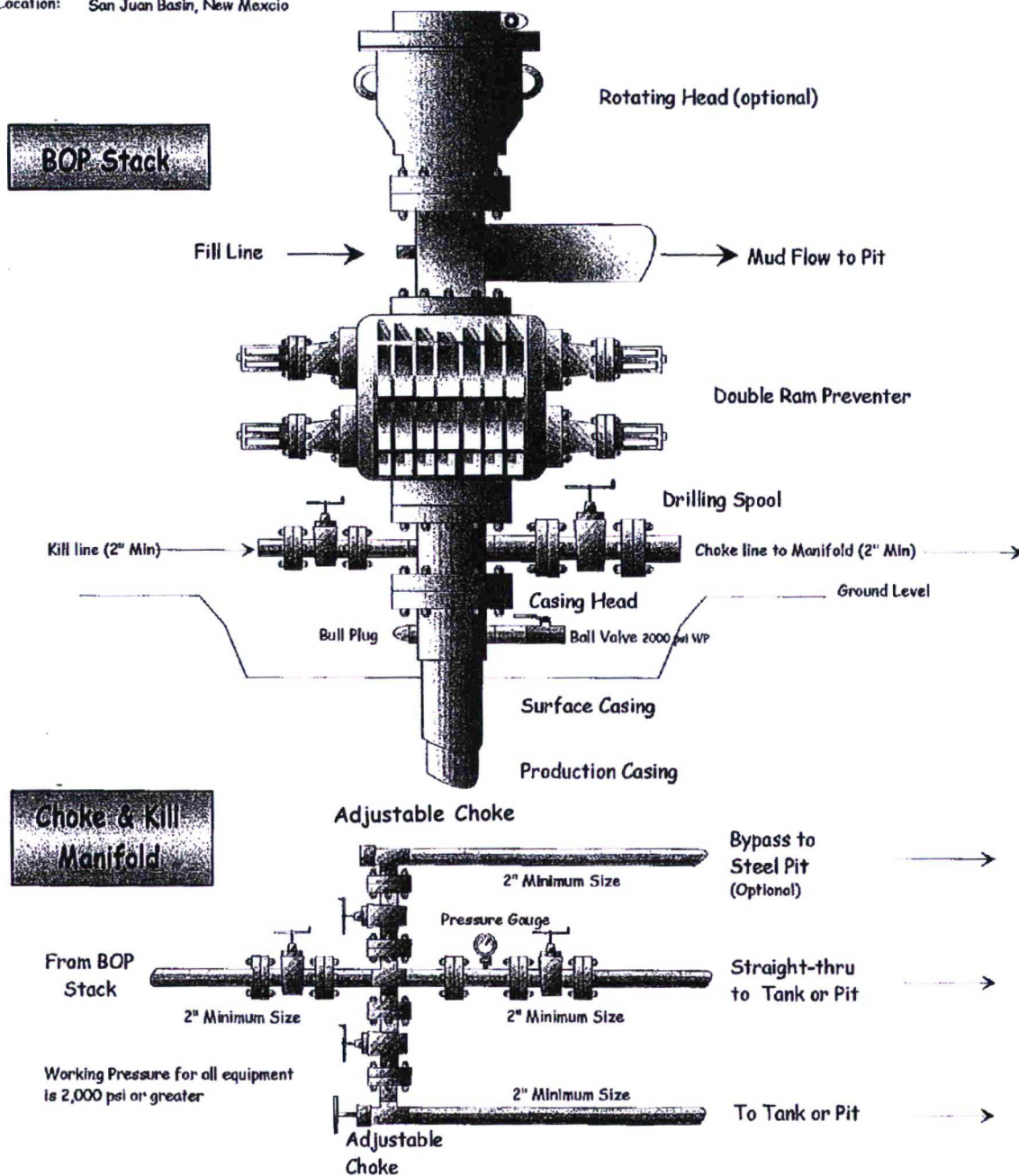


Well Control Equipment Schematic for 2M Service

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 #2H

1206' FNL & 360' FEL, Section 32, T24N, R8W, N.M.P.M., San Juan County, NM

Latitude: 36.274774°N Longitude: 107.697417°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 #2H location.