

State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd E. Leahy, JD, PhD
Deputy Secretary

Adrienne Sandoval, Division Director
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 9/19/2018

Well information;

Operator 10605, Well Name and Number 24,081 2408 13C COM 1 H

API# 30-045-35888, Section 13, Township 24 NS, Range 8 E W

Conditions of Approval: (See the below checked and handwritten conditions)

- ☒ Notify Aztec OCD 24hrs prior to casing & cement.
- ☒ Hold C-104 for directional survey & "As Drilled" Plat
- ☒ Hold C-104 for NSL, NSP, DHC
- ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- ☐ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
 - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
 - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
 - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- ☐ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ☐ Submit Gas Capture Plan form prior to spudding or initiating recompletion operations
- ☒ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ☒ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- ☒ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.

NMOCD Approved by Signature

5/24/19

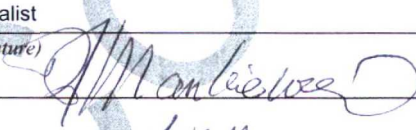
Date

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

| | | |
|---|--|--|
| 1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER | | 5. Lease Serial No. NMNM001409 |
| 1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other | | 6. If Indian, Allottee or Tribe Name |
| 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone | | 7. If Unit or CA Agreement, Name and No. |
| 2. Name of Operator LOGOS OPERATING LLC | | 8. Lease Name and Well No. DRAGONFLY 2408 13C COM 1H |
| 3a. Address 2010 Afton Place FARMINGTON NM 87401 | 3b. Phone No. (include area code) (505)324-4145 | 9. API Well No. 30-045-35888 |
| 4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface ^C LOT 1 / 750 FNL / 2168 FWL / LAT 36.319009 / LONG -107.635287 At proposed prod. zone ^D NWNW / 329 FNL / 20 FWL / LAT 36.320231 / LONG -107.660364 | | 10. Field and Pool, or Exploratory DUFFERS POINT / ESCRITO / GALLUP |
| 14. Distance in miles and direction from nearest town or post office* 42.7 miles | | 11. Sec., T. R. M. or Blk. and Survey or Area SEC 13 / T24N / R8W / NMP |
| 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 750 feet | | 12. County or Parish SAN JUAN |
| 16. No of acres in lease 629.79 | | 13. State NM |
| 17. Spacing Unit dedicated to this well 235.79 | | |
| 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 40 feet | | 19. Proposed Depth 6053 feet / 13078 feet |
| 20. BLM/BIA Bond No. in file FED: NMB001387 | | |
| 21. Elevations (Show whether DF, KDB, RT, GL, etc.) 7191 feet | | 22. Approximate date work will start* 11/02/2018 |
| 23. Estimated duration 45 days | | |
| 24. Attachments | | |

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be requested by the BLM. |

| | | |
|--|--|--------------------|
| 25. Signature (Electronic Submission) | Name (Printed Typed) Marie Florez / Ph: (505)419-8420 | Date 09/19/2018 |
| Title Regulatory Specialist | | |
| Approved by (Signature)  | Name (Printed Typed) | Date 4/25/19 |
| Title AFM | Office FARMINGTON | |

Application approval 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.

Conditions of approval, if any, are attached.

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.

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

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

DISTRICT II
811 S First St., Artesia, NM 88210
Phone: (575) 740-1283 Fax: (575) 740-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S St Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3480 Fax: (505) 476-3482

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

| | | |
|--|--|---|
| ¹ API Number 30.045-35888 | ² Pool Code 19859/22619 | ³ Pool Name DUFFERS POINT-GALLUP DAKOTA/ESCRITO GALLUP ASSOCIATED |
| ⁴ Property Code 3256068 | ⁵ Property Name DRAGONFLY 2408 13C COM | ⁶ Well Number 1H |
| ⁷ OGRID No. 289408 | ⁸ Operator Name LOGOS OPERATING, LLC | ⁹ Elevation 7191 |

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 |
|--------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|----------|
| C | 13 | 24-N | 8-W | 1 | 750 | NORTH | 2168 | WEST | 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 |
|--------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|----------|
| D | 14 | 24-N | 8-W | | 329 | NORTH | 20 | WEST | SAN JUAN |

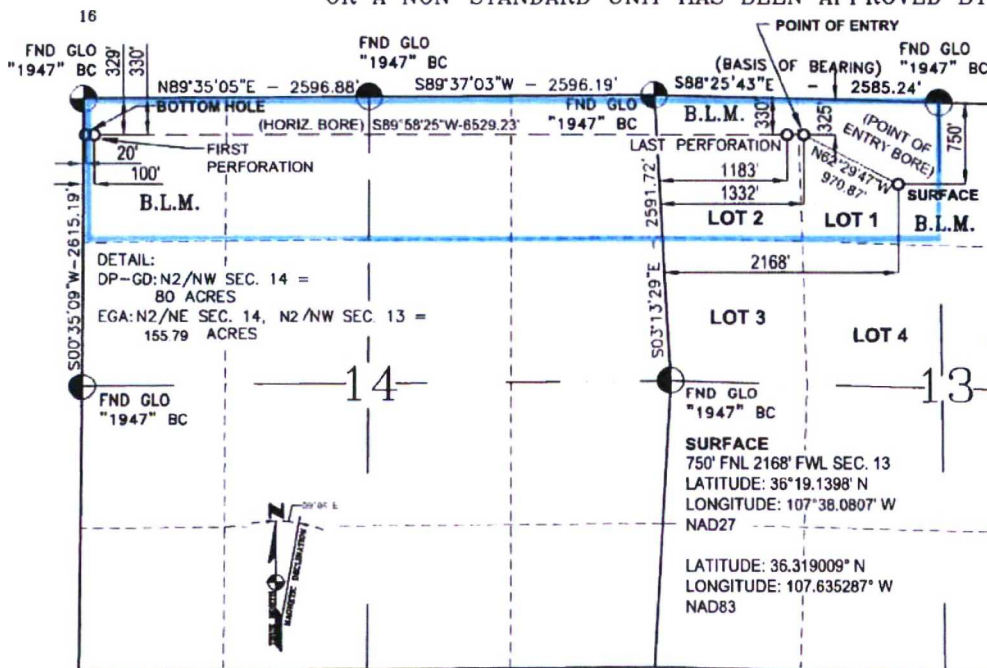
¹² Dedicated Acres
PROJECT AREA 235.79 ACRES
SEE DETAIL BELOW

¹³ Joint or Infill

¹⁴ Consolidation Code

¹⁵ Order No

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



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 a working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature
Tamra Sessions

Date
9/04/18

Printed Name
tsessions@logosresourcesllc.com

E-mail Address

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.

JULY 13, 2018

Date of Survey

Signature and Seal



GLEN W. RUSSELL

Certificate Number

15703

BOTTOM HOLE
329' FNL 20' FWL SEC. 14
LATITUDE: 36°19.2132' N
LONGITUDE: 107°39.5852' W
NAD27

FIRST PERFORATION
330' FNL 100' FWL SEC. 14
LATITUDE: 36°19.2132' N
LONGITUDE: 107°39.5689' W
NAD27

LAST PERFORATION
330' FNL 1183' FWL SEC. 13
LATITUDE: 36°19.2137' N
LONGITUDE: 107°38.2865' W
NAD27

POINT OF ENTRY
325' FNL 1332' FWL SEC. 13
LATITUDE: 36°19.2137' N
LONGITUDE: 107°38.2580' W
NAD27

LATITUDE: 36.320231° N
LONGITUDE: 107.660364° W
NAD83

LATITUDE: 36.320231° N
LONGITUDE: 107.660092° W
NAD83

LATITUDE: 36.320240° N
LONGITUDE: 107.638718° W
NAD83

LATITUDE: 36.320240° N
LONGITUDE: 107.638209° W
NAD83

BASIS OF BEARING

BETWEEN FOUND MONUMENTS AT THE NORTHWEST CORNER AND THE NORTH QUARTER CORNER OF SECTION 13,
TOWNSHIP 24 NORTH, RANGE 8 WEST, N.M.P.M. SAN JUAN COUNTY, NEW MEXICO

LINE BEARS: S 88°25'43" E A DISTANCE OF 2585.24 FEET AS MEASURED BY G.P.S. LOCAL GRID NAD83

Surface = Federal



LOGOS Operating, LLC Operations Plan

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

| | | | |
|-----------------------|--|-----------------|--|
| Date: | September 12, 2018 | Pool: | Duffers Point – Gallup Dakota/Escrito Gallup Associated |
| Well Name: | Dragonfly 2408 13C Com 1H | Elevation: | 7,191' |
| Surface Location: | Sec 13, T24N, R8W 750 FNL, 2168 FWL (36.319009° N, 107.635287° W – NAD83) | Measured Depth: | 13,078' |
| Bottom Hole Location: | Sec 14, T24N, R8W 329 FNL, 20 FWL (36.320231° N, 107.660364° W – NAD83) | County: | San Juan |

Lease Serial # NMNM136074

I. GEOLOGY

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

| NAME | MD | TVD | NAME | MD | TVD |
|------------------|-------|-------|----------------|--------|-------|
| OJO ALAMO | 1,728 | 1,728 | *POINT LOOKOUT | 4,762 | 4,762 |
| KIRTLAND | 1,903 | 1,903 | *MANCOS | 5,102 | 5,058 |
| *FRUITLAND | 2,118 | 2,118 | GALLUP | 5,812 | 5,744 |
| *PICTURED CLIFFS | 2,450 | 2,450 | KICKOFF POINT | 5,466 | 5,436 |
| CHACRA | 2,870 | 2,870 | LANDING POINT | 6,551 | 6,099 |
| *CLIFF HOUSE | 4,002 | 4,002 | TD | 13,078 | 6,053 |
| MENEFEE | 4,006 | 4,006 | | | |

* 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

DRAGONFLY 2408 13C 1H



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 | OHSIZE (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" | 6,551' | 7" | 23 LBS | J-55 or equiv | LTC |
| PRODUCTION | 6.125" | 6401' – 13,078' | 4.5" | 11.6 LBS | P-110 or equiv | LTC |
| TIE BACK | 6.125" | Surf. – 6,401' | 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 330 ft Hard line. Centralizer program will be determined by Wellbore condition and when Lateral is evaluated by Geoscientists and Reservoir Engineers. 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: 230 bbls, 662 sks (1291 cu.ft.), 12.3 ppg@ 1.95 cuft/sk yield. Tail Cement: 48 bbls, 208 sks, (270 cuft), 13.5 ppg@ 1.3 cu'ft/sk yield. Displacement: Displace w/ +/- 262 bbl Drilling mud or water. Total Cement: 278 bbls, 870 sks, (1561 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 (603 sx / 820 cuft /146 bbls). Tail Spacer: 40 BBL of MMCR. Displacement: Displace w/ +/- 103 bbl Fr Water.



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 4500 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: Dragonfly 2408-13C
Well: Dragonfly 2408-13C Com 1H
Wellbore: OH
Design: Plan #1

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: 8.82°

Magnetic Field
Strength: 49573.3snT
Dip Angle: 62.92°
Date: 8/29/2018
Model: HDGM

WELL DETAILS: Dragonfly 2408-13C Com 1H

GL 7191' & RKB 14' @ 7205.00usft (Aztec 920)
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 1935479.23 2781434.47 36.3190090 -107.6352870

Plan: Plan #1 (Dragonfly 2408-13C Com 1H/OH)

Created By: Janie Collins Date: 15:06, August 29 2018

DESIGN TARGET DETAILS

| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|-------------|---------|--------|----------|------------|------------|------------|--------------|
| DF 1H POE | 6099.00 | 448.13 | -860.79 | 1935925.60 | 2780572.77 | 36.3202400 | -107.6382090 |
| DF 1H BHL | 6053.00 | 445.80 | -7387.38 | 1935909.91 | 2774046.19 | 36.3202310 | -107.6603640 |
| DF 1H FPart | 6053.00 | 445.78 | -7307.25 | 1935910.05 | 2774126.32 | 36.3202310 | -107.6600920 |
| DF 1H LPart | 6093.00 | 448.14 | -1010.73 | 1935925.30 | 2780422.83 | 36.3202400 | -107.6387180 |

SECTION DETAILS

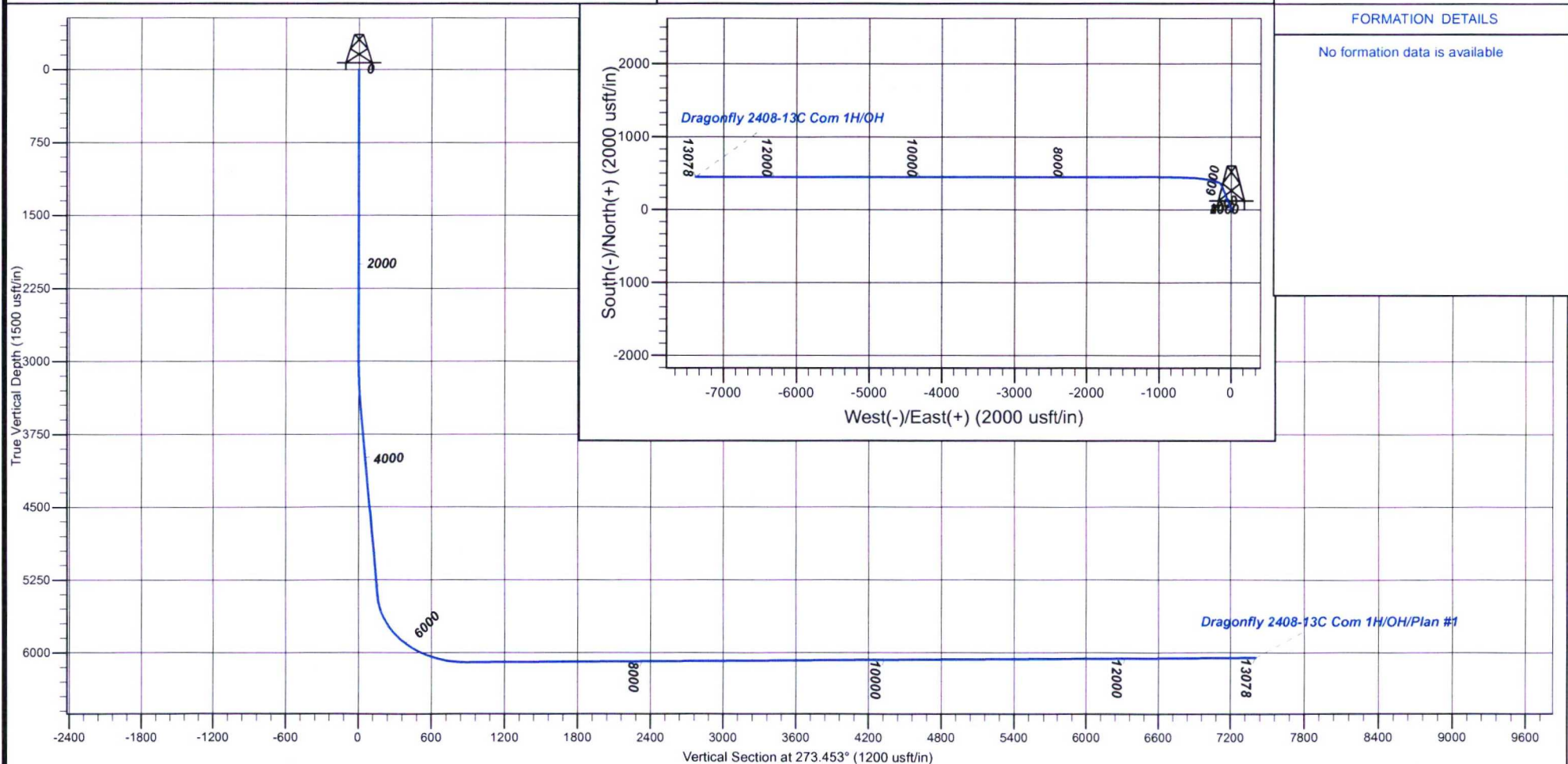
| MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSec | Target |
|----------|--------|---------|---------|--------|----------|------|--------|---------|-----------|
| 0.00 | 0.000 | 0.000 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3000.00 | 0.000 | 0.000 | 3000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3480.35 | 9.607 | 337.703 | 3478.11 | 37.17 | -15.24 | 2.00 | 337.70 | 17.45 | |
| 5466.43 | 9.607 | 337.703 | 5436.32 | 343.85 | -141.00 | 0.00 | 0.00 | 161.46 | |
| 6551.07 | 90.404 | 269.980 | 6099.00 | 448.13 | -860.79 | 8.00 | -67.94 | 886.22 | DF 1H POE |
| 13077.83 | 90.404 | 269.980 | 6053.00 | 445.80 | -7387.38 | 0.00 | 0.00 | 7400.82 | DF 1H BHL |

CASING DETAILS

No casing data is available

FORMATION DETAILS

No formation data is available





Logos Operating LLC

San Juan, NM NAD83

Dragonfly 2408-13C

Dragonfly 2408-13C Com 1H

OH

Plan: Plan #1

Standard Planning Report

29 August, 2018



www.scientificdrilling.com



Scientific Drilling, Intl
Planning Report



Database: Grand Junction District
Company: Logos Operating LLC
Project: San Juan, NM NAD83
Site: Dragonfly 2408-13C
Well: Dragonfly 2408-13C Com 1H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Dragonfly 2408-13C Com 1H
TVD Reference: GL 7191' & RKB 14' @ 7205.00usft (Aztec 920)
MD Reference: GL 7191' & RKB 14' @ 7205.00usft (Aztec 920)
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 | Dragonfly 2408-13C | | |
| Site Position: | | Northing: | 1,935,479.24 usft |
| From: | Lat/Long | Easting: | 2,781,434.47 usft |
| Position Uncertainty: | 0.00 usft | Slot Radius: | 13.20 in |
| | | Latitude: | 36.3190090 |
| | | Longitude: | -107.6352870 |
| | | Grid Convergence: | 0.12 ° |

| | | | | | | |
|----------------------|---------------------------|---------------------|-----------|-------------------|---------------|--------------|
| Well | Dragonfly 2408-13C Com 1H | | | | | |
| Well Position | +N/-S | 0.00 usft | Northing: | 1,935,479.24 usft | Latitude: | 36.3190090 |
| | +E/-W | 0.00 usft | Easting: | 2,781,434.47 usft | Longitude: | -107.6352870 |
| Position Uncertainty | 0.00 usft | Wellhead Elevation: | 0.00 usft | Ground Level: | 7,191.00 usft | |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | OH | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | HDGM | 8/29/2018 | 8.82 | 62.92 | 49,573 |

| | | | | |
|--------------------------|--------------------------------|---------------------|----------------------|----------------------|
| Design | Plan #1 | | | |
| 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 | 273.453 |

| | | | | | | | | | | |
|------------------------------|------------------------|--------------------|------------------------------|---------------------|---------------------|--------------------------------|-------------------------------|------------------------------|----------------|---------------|
| 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 | 0.000 | 0.000 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3,000.00 | 0.000 | 0.000 | 3,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3,480.35 | 9.607 | 337.703 | 3,478.11 | 37.17 | -15.24 | 2.00 | 2.00 | 0.00 | 337.70 | |
| 5,466.43 | 9.607 | 337.703 | 5,436.32 | 343.85 | -141.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 6,551.07 | 90.404 | 269.980 | 6,099.00 | 448.13 | -860.79 | 8.00 | 7.45 | -6.24 | -67.94 | DF 1H POE |
| 13,077.83 | 90.404 | 269.980 | 6,053.00 | 445.80 | -7,387.38 | 0.00 | 0.00 | 0.00 | 0.00 | DF 1H BHL |



Scientific Drilling, Intl
Planning Report



Database: Grand Junction District
Company: Logos Operating LLC

Project: San Juan, NM NAD83

Site: Dragonfly 2408-13C
Well: Dragonfly 2408-13C Com 1H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Dragonfly 2408-13C Com 1H
TVD Reference: GL 7191' & RKB 14' @ 7205.00usft (Aztec 920)
MD Reference: GL 7191' & RKB 14' @ 7205.00usft (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) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 0.00 | 0.000 | 0.000 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100.00 | 0.000 | 0.000 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 200.00 | 0.000 | 0.000 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 300.00 | 0.000 | 0.000 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 400.00 | 0.000 | 0.000 | 400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 500.00 | 0.000 | 0.000 | 500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 600.00 | 0.000 | 0.000 | 600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 700.00 | 0.000 | 0.000 | 700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 800.00 | 0.000 | 0.000 | 800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 900.00 | 0.000 | 0.000 | 900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,000.00 | 0.000 | 0.000 | 1,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,100.00 | 0.000 | 0.000 | 1,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,200.00 | 0.000 | 0.000 | 1,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,300.00 | 0.000 | 0.000 | 1,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,400.00 | 0.000 | 0.000 | 1,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,500.00 | 0.000 | 0.000 | 1,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,600.00 | 0.000 | 0.000 | 1,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,700.00 | 0.000 | 0.000 | 1,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,800.00 | 0.000 | 0.000 | 1,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 0.000 | 0.000 | 1,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 0.000 | 0.000 | 2,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,100.00 | 0.000 | 0.000 | 2,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 0.000 | 0.000 | 2,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 0.000 | 0.000 | 2,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 0.000 | 0.000 | 2,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,500.00 | 0.000 | 0.000 | 2,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,600.00 | 0.000 | 0.000 | 2,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,700.00 | 0.000 | 0.000 | 2,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 0.000 | 0.000 | 2,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 0.000 | 0.000 | 2,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,000.00 | 0.000 | 0.000 | 3,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 2.000 | 337.703 | 3,099.98 | 1.61 | -0.66 | 0.76 | 2.00 | 2.00 | 0.00 |
| 3,200.00 | 4.000 | 337.703 | 3,199.84 | 6.46 | -2.65 | 3.03 | 2.00 | 2.00 | 0.00 |
| 3,300.00 | 6.000 | 337.703 | 3,299.45 | 14.52 | -5.95 | 6.82 | 2.00 | 2.00 | 0.00 |
| 3,400.00 | 8.000 | 337.703 | 3,398.70 | 25.80 | -10.58 | 12.11 | 2.00 | 2.00 | 0.00 |
| 3,480.35 | 9.607 | 337.703 | 3,478.11 | 37.17 | -15.24 | 17.45 | 2.00 | 2.00 | 0.00 |
| 3,500.00 | 9.607 | 337.703 | 3,497.48 | 40.21 | -16.49 | 18.88 | 0.00 | 0.00 | 0.00 |
| 3,600.00 | 9.607 | 337.703 | 3,596.07 | 55.65 | -22.82 | 26.13 | 0.00 | 0.00 | 0.00 |
| 3,700.00 | 9.607 | 337.703 | 3,694.67 | 71.09 | -29.15 | 33.38 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 9.607 | 337.703 | 3,793.27 | 86.53 | -35.48 | 40.63 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 9.607 | 337.703 | 3,891.87 | 101.97 | -41.82 | 47.88 | 0.00 | 0.00 | 0.00 |
| 4,000.00 | 9.607 | 337.703 | 3,990.46 | 117.41 | -48.15 | 55.13 | 0.00 | 0.00 | 0.00 |
| 4,100.00 | 9.607 | 337.703 | 4,089.06 | 132.85 | -54.48 | 62.38 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 9.607 | 337.703 | 4,187.66 | 148.30 | -60.81 | 69.63 | 0.00 | 0.00 | 0.00 |
| 4,300.00 | 9.607 | 337.703 | 4,286.26 | 163.74 | -67.14 | 76.88 | 0.00 | 0.00 | 0.00 |
| 4,400.00 | 9.607 | 337.703 | 4,384.85 | 179.18 | -73.47 | 84.13 | 0.00 | 0.00 | 0.00 |
| 4,500.00 | 9.607 | 337.703 | 4,483.45 | 194.62 | -79.81 | 91.38 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 9.607 | 337.703 | 4,582.05 | 210.06 | -86.14 | 98.64 | 0.00 | 0.00 | 0.00 |
| 4,700.00 | 9.607 | 337.703 | 4,680.65 | 225.50 | -92.47 | 105.89 | 0.00 | 0.00 | 0.00 |
| 4,800.00 | 9.607 | 337.703 | 4,779.25 | 240.94 | -98.80 | 113.14 | 0.00 | 0.00 | 0.00 |
| 4,900.00 | 9.607 | 337.703 | 4,877.84 | 256.38 | -105.13 | 120.39 | 0.00 | 0.00 | 0.00 |
| 5,000.00 | 9.607 | 337.703 | 4,976.44 | 271.82 | -111.47 | 127.64 | 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: Dragonfly 2408-13C
Well: Dragonfly 2408-13C Com 1H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Dragonfly 2408-13C Com 1H
TVD Reference: GL 7191' & RKB 14' @ 7205.00usft (Aztec 920)
MD Reference: GL 7191' & RKB 14' @ 7205.00usft (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) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 5,100.00 | 9.607 | 337.703 | 5,075.04 | 287.27 | -117.80 | 134.89 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 9.607 | 337.703 | 5,173.64 | 302.71 | -124.13 | 142.14 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 9.607 | 337.703 | 5,272.23 | 318.15 | -130.46 | 149.39 | 0.00 | 0.00 | 0.00 |
| 5,400.00 | 9.607 | 337.703 | 5,370.83 | 333.59 | -136.79 | 156.64 | 0.00 | 0.00 | 0.00 |
| 5,466.43 | 9.607 | 337.703 | 5,436.32 | 343.85 | -141.00 | 161.46 | 0.00 | 0.00 | 0.00 |
| 5,500.00 | 10.901 | 324.426 | 5,469.37 | 349.02 | -143.91 | 164.67 | 8.00 | 3.85 | -39.55 |
| 5,600.00 | 16.813 | 301.251 | 5,566.48 | 364.24 | -161.80 | 183.45 | 8.00 | 5.91 | -23.18 |
| 5,700.00 | 23.946 | 290.685 | 5,660.20 | 378.93 | -193.20 | 215.68 | 8.00 | 7.13 | -10.57 |
| 5,800.00 | 31.482 | 284.856 | 5,748.68 | 392.82 | -237.50 | 260.73 | 8.00 | 7.54 | -5.83 |
| 5,900.00 | 39.187 | 281.115 | 5,830.20 | 405.63 | -293.83 | 317.73 | 8.00 | 7.71 | -3.74 |
| 6,000.00 | 46.978 | 278.444 | 5,903.19 | 417.10 | -361.10 | 385.57 | 8.00 | 7.79 | -2.67 |
| 6,100.00 | 54.816 | 276.380 | 5,966.22 | 427.03 | -437.99 | 462.92 | 8.00 | 7.84 | -2.06 |
| 6,200.00 | 62.684 | 274.681 | 6,018.06 | 435.21 | -523.02 | 548.29 | 8.00 | 7.87 | -1.70 |
| 6,300.00 | 70.569 | 273.209 | 6,057.70 | 441.48 | -614.52 | 640.00 | 8.00 | 7.89 | -1.47 |
| 6,400.00 | 78.465 | 271.874 | 6,084.37 | 445.73 | -710.72 | 736.28 | 8.00 | 7.90 | -1.33 |
| 6,500.00 | 86.367 | 270.612 | 6,097.56 | 447.87 | -809.74 | 835.25 | 8.00 | 7.90 | -1.26 |
| 6,551.07 | 90.404 | 269.980 | 6,099.00 | 448.13 | -860.79 | 886.22 | 8.00 | 7.90 | -1.24 |
| DF 1H POE | | | | | | | | | |
| 6,600.00 | 90.404 | 269.980 | 6,098.66 | 448.11 | -909.71 | 935.05 | 0.00 | 0.00 | 0.00 |
| 6,700.00 | 90.404 | 269.980 | 6,097.95 | 448.08 | -1,009.71 | 1,034.87 | 0.00 | 0.00 | 0.00 |
| 6,701.06 | 90.404 | 269.980 | 6,097.94 | 448.08 | -1,010.77 | 1,035.92 | 0.00 | 0.00 | 0.00 |
| DF 1H LPerf | | | | | | | | | |
| 6,800.00 | 90.404 | 269.980 | 6,097.25 | 448.04 | -1,109.71 | 1,134.68 | 0.00 | 0.00 | 0.00 |
| 6,900.00 | 90.404 | 269.980 | 6,096.54 | 448.01 | -1,209.70 | 1,234.49 | 0.00 | 0.00 | 0.00 |
| 7,000.00 | 90.404 | 269.980 | 6,095.84 | 447.97 | -1,309.70 | 1,334.31 | 0.00 | 0.00 | 0.00 |
| 7,100.00 | 90.404 | 269.980 | 6,095.13 | 447.94 | -1,409.70 | 1,434.12 | 0.00 | 0.00 | 0.00 |
| 7,200.00 | 90.404 | 269.980 | 6,094.43 | 447.90 | -1,509.70 | 1,533.94 | 0.00 | 0.00 | 0.00 |
| 7,300.00 | 90.404 | 269.980 | 6,093.72 | 447.86 | -1,609.69 | 1,633.75 | 0.00 | 0.00 | 0.00 |
| 7,400.00 | 90.404 | 269.980 | 6,093.02 | 447.83 | -1,709.69 | 1,733.56 | 0.00 | 0.00 | 0.00 |
| 7,500.00 | 90.404 | 269.980 | 6,092.31 | 447.79 | -1,809.69 | 1,833.38 | 0.00 | 0.00 | 0.00 |
| 7,600.00 | 90.404 | 269.980 | 6,091.61 | 447.76 | -1,909.69 | 1,933.19 | 0.00 | 0.00 | 0.00 |
| 7,700.00 | 90.404 | 269.980 | 6,090.90 | 447.72 | -2,009.68 | 2,033.00 | 0.00 | 0.00 | 0.00 |
| 7,800.00 | 90.404 | 269.980 | 6,090.20 | 447.69 | -2,109.68 | 2,132.82 | 0.00 | 0.00 | 0.00 |
| 7,900.00 | 90.404 | 269.980 | 6,089.49 | 447.65 | -2,209.68 | 2,232.63 | 0.00 | 0.00 | 0.00 |
| 8,000.00 | 90.404 | 269.980 | 6,088.79 | 447.61 | -2,309.68 | 2,332.45 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 90.404 | 269.980 | 6,088.08 | 447.58 | -2,409.67 | 2,432.26 | 0.00 | 0.00 | 0.00 |
| 8,200.00 | 90.404 | 269.980 | 6,087.38 | 447.54 | -2,509.67 | 2,532.07 | 0.00 | 0.00 | 0.00 |
| 8,300.00 | 90.404 | 269.980 | 6,086.67 | 447.51 | -2,609.67 | 2,631.89 | 0.00 | 0.00 | 0.00 |
| 8,400.00 | 90.404 | 269.980 | 6,085.97 | 447.47 | -2,709.67 | 2,731.70 | 0.00 | 0.00 | 0.00 |
| 8,500.00 | 90.404 | 269.980 | 6,085.26 | 447.44 | -2,809.66 | 2,831.51 | 0.00 | 0.00 | 0.00 |
| 8,600.00 | 90.404 | 269.980 | 6,084.56 | 447.40 | -2,909.66 | 2,931.33 | 0.00 | 0.00 | 0.00 |
| 8,700.00 | 90.404 | 269.980 | 6,083.85 | 447.36 | -3,009.66 | 3,031.14 | 0.00 | 0.00 | 0.00 |
| 8,800.00 | 90.404 | 269.980 | 6,083.15 | 447.33 | -3,109.66 | 3,130.96 | 0.00 | 0.00 | 0.00 |
| 8,900.00 | 90.404 | 269.980 | 6,082.45 | 447.29 | -3,209.65 | 3,230.77 | 0.00 | 0.00 | 0.00 |
| 9,000.00 | 90.404 | 269.980 | 6,081.74 | 447.26 | -3,309.65 | 3,330.58 | 0.00 | 0.00 | 0.00 |
| 9,100.00 | 90.404 | 269.980 | 6,081.04 | 447.22 | -3,409.65 | 3,430.40 | 0.00 | 0.00 | 0.00 |
| 9,200.00 | 90.404 | 269.980 | 6,080.33 | 447.19 | -3,509.65 | 3,530.21 | 0.00 | 0.00 | 0.00 |
| 9,300.00 | 90.404 | 269.980 | 6,079.63 | 447.15 | -3,609.64 | 3,630.02 | 0.00 | 0.00 | 0.00 |
| 9,400.00 | 90.404 | 269.980 | 6,078.92 | 447.11 | -3,709.64 | 3,729.84 | 0.00 | 0.00 | 0.00 |
| 9,500.00 | 90.404 | 269.980 | 6,078.22 | 447.08 | -3,809.64 | 3,829.65 | 0.00 | 0.00 | 0.00 |
| 9,600.00 | 90.404 | 269.980 | 6,077.51 | 447.04 | -3,909.64 | 3,929.47 | 0.00 | 0.00 | 0.00 |
| 9,700.00 | 90.404 | 269.980 | 6,076.81 | 447.01 | -4,009.63 | 4,029.28 | 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: Dragonfly 2408-13C
Well: Dragonfly 2408-13C Com 1H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Dragonfly 2408-13C Com 1H
TVD Reference: GL 7191' & RKB 14' @ 7205.00usft (Aztec 920)
MD Reference: GL 7191' & RKB 14' @ 7205.00usft (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) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 9,800.00 | 90.404 | 269.980 | 6,076.10 | 446.97 | -4,109.63 | 4,129.09 | 0.00 | 0.00 | 0.00 |
| 9,900.00 | 90.404 | 269.980 | 6,075.40 | 446.94 | -4,209.63 | 4,228.91 | 0.00 | 0.00 | 0.00 |
| 10,000.00 | 90.404 | 269.980 | 6,074.69 | 446.90 | -4,309.63 | 4,328.72 | 0.00 | 0.00 | 0.00 |
| 10,100.00 | 90.404 | 269.980 | 6,073.99 | 446.86 | -4,409.62 | 4,428.53 | 0.00 | 0.00 | 0.00 |
| 10,200.00 | 90.404 | 269.980 | 6,073.28 | 446.83 | -4,509.62 | 4,528.35 | 0.00 | 0.00 | 0.00 |
| 10,300.00 | 90.404 | 269.980 | 6,072.58 | 446.79 | -4,609.62 | 4,628.16 | 0.00 | 0.00 | 0.00 |
| 10,400.00 | 90.404 | 269.980 | 6,071.87 | 446.76 | -4,709.62 | 4,727.98 | 0.00 | 0.00 | 0.00 |
| 10,500.00 | 90.404 | 269.980 | 6,071.17 | 446.72 | -4,809.61 | 4,827.79 | 0.00 | 0.00 | 0.00 |
| 10,600.00 | 90.404 | 269.980 | 6,070.46 | 446.69 | -4,909.61 | 4,927.60 | 0.00 | 0.00 | 0.00 |
| 10,700.00 | 90.404 | 269.980 | 6,069.76 | 446.65 | -5,009.61 | 5,027.42 | 0.00 | 0.00 | 0.00 |
| 10,800.00 | 90.404 | 269.980 | 6,069.05 | 446.61 | -5,109.61 | 5,127.23 | 0.00 | 0.00 | 0.00 |
| 10,900.00 | 90.404 | 269.980 | 6,068.35 | 446.58 | -5,209.60 | 5,227.05 | 0.00 | 0.00 | 0.00 |
| 11,000.00 | 90.404 | 269.980 | 6,067.64 | 446.54 | -5,309.60 | 5,326.86 | 0.00 | 0.00 | 0.00 |
| 11,100.00 | 90.404 | 269.980 | 6,066.94 | 446.51 | -5,409.60 | 5,426.67 | 0.00 | 0.00 | 0.00 |
| 11,200.00 | 90.404 | 269.980 | 6,066.23 | 446.47 | -5,509.60 | 5,526.49 | 0.00 | 0.00 | 0.00 |
| 11,300.00 | 90.404 | 269.980 | 6,065.53 | 446.44 | -5,609.59 | 5,626.30 | 0.00 | 0.00 | 0.00 |
| 11,400.00 | 90.404 | 269.980 | 6,064.83 | 446.40 | -5,709.59 | 5,726.11 | 0.00 | 0.00 | 0.00 |
| 11,500.00 | 90.404 | 269.980 | 6,064.12 | 446.36 | -5,809.59 | 5,825.93 | 0.00 | 0.00 | 0.00 |
| 11,600.00 | 90.404 | 269.980 | 6,063.42 | 446.33 | -5,909.59 | 5,925.74 | 0.00 | 0.00 | 0.00 |
| 11,700.00 | 90.404 | 269.980 | 6,062.71 | 446.29 | -6,009.58 | 6,025.56 | 0.00 | 0.00 | 0.00 |
| 11,800.00 | 90.404 | 269.980 | 6,062.01 | 446.26 | -6,109.58 | 6,125.37 | 0.00 | 0.00 | 0.00 |
| 11,900.00 | 90.404 | 269.980 | 6,061.30 | 446.22 | -6,209.58 | 6,225.18 | 0.00 | 0.00 | 0.00 |
| 12,000.00 | 90.404 | 269.980 | 6,060.60 | 446.19 | -6,309.58 | 6,325.00 | 0.00 | 0.00 | 0.00 |
| 12,100.00 | 90.404 | 269.980 | 6,059.89 | 446.15 | -6,409.57 | 6,424.81 | 0.00 | 0.00 | 0.00 |
| 12,200.00 | 90.404 | 269.980 | 6,059.19 | 446.11 | -6,509.57 | 6,524.62 | 0.00 | 0.00 | 0.00 |
| 12,300.00 | 90.404 | 269.980 | 6,058.48 | 446.08 | -6,609.57 | 6,624.44 | 0.00 | 0.00 | 0.00 |
| 12,400.00 | 90.404 | 269.980 | 6,057.78 | 446.04 | -6,709.57 | 6,724.25 | 0.00 | 0.00 | 0.00 |
| 12,500.00 | 90.404 | 269.980 | 6,057.07 | 446.01 | -6,809.56 | 6,824.07 | 0.00 | 0.00 | 0.00 |
| 12,600.00 | 90.404 | 269.980 | 6,056.37 | 445.97 | -6,909.56 | 6,923.88 | 0.00 | 0.00 | 0.00 |
| 12,700.00 | 90.404 | 269.980 | 6,055.66 | 445.94 | -7,009.56 | 7,023.69 | 0.00 | 0.00 | 0.00 |
| 12,800.00 | 90.404 | 269.980 | 6,054.96 | 445.90 | -7,109.56 | 7,123.51 | 0.00 | 0.00 | 0.00 |
| 12,900.00 | 90.404 | 269.980 | 6,054.25 | 445.86 | -7,209.55 | 7,223.32 | 0.00 | 0.00 | 0.00 |
| 12,997.71 | 90.404 | 269.980 | 6,053.56 | 445.83 | -7,307.26 | 7,320.84 | 0.00 | 0.00 | 0.00 |
| DF 1H FPerf | | | | | | | | | |
| 13,000.00 | 90.404 | 269.980 | 6,053.55 | 445.83 | -7,309.55 | 7,323.13 | 0.00 | 0.00 | 0.00 |
| 13,077.83 | 90.404 | 269.980 | 6,053.00 | 445.80 | -7,387.38 | 7,400.82 | 0.00 | 0.00 | 0.00 |
| DF 1H BHL | | | | | | | | | |



Scientific Drilling, Intl
Planning Report




Database: Grand Junction District
Company: Logos Operating LLC
Project: San Juan, NM NAD83
Site: Dragonfly 2408-13C
Well: Dragonfly 2408-13C Com 1H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Dragonfly 2408-13C Com 1H
TVD Reference: GL 7191' & RKB 14' @ 7205.00usft (Aztec 920)
MD Reference: GL 7191' & RKB 14' @ 7205.00usft (Aztec 920)
North Reference: True
Survey Calculation Method: Minimum Curvature

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 |
|--|------------------|-----------------|---------------|-----------------|-----------------|--------------------|-------------------|------------|--------------|
| DF 1H FPerf - plan misses target center by 0.57usft at 12997.71usft MD (6053.56 TVD, 445.83 N, -7307.26 E) - Point | 0.000 | 0.000 | 6,053.00 | 445.78 | -7,307.25 | 1,935,910.06 | 2,774,126.32 | 36.3202310 | -107.6600920 |
| DF 1H BHL - plan hits target center - Point | 0.000 | 0.000 | 6,053.00 | 445.80 | -7,387.38 | 1,935,909.91 | 2,774,046.20 | 36.3202310 | -107.6603640 |
| DF 1H LPerf - plan misses target center by 4.94usft at 6701.06usft MD (6097.94 TVD, 448.08 N, -1010.77 E) - Point | 0.000 | 0.000 | 6,093.00 | 448.14 | -1,010.73 | 1,935,925.30 | 2,780,422.83 | 36.3202400 | -107.6387180 |
| DF 1H POE - plan hits target center - Point | 0.000 | 0.000 | 6,099.00 | 448.13 | -860.79 | 1,935,925.61 | 2,780,572.77 | 36.3202400 | -107.6382090 |



37. Soil: A minimum of the top 6 inches of soil material (topsoil) will be stripped and stockpiled in the construction zones around the well pad and other project areas. Topsoil would be stored separately from subsoil or other excavated material and at an appropriate depth to avoid the loss of soil nutrient value. If topsoil is stored for a length of time such that nutrients are depleted, amendments may be required to be added as advised by an environmental scientist or appropriate agent/contractor. Vehicle/equipment traffic would not be allowed to cross topsoil stockpiles. The topsoil would be protected using wattles or other BMPs so that erosion is minimized. Vegetation removed during construction, including slash/brush and trees 3 inches in diameter or less, will be chipped or mulched and incorporated into the topsoil as additional organic matter. Prior to reseeding, stockpiled soil material will be spread on the reclaimed portions of the pad (including the reserve pit and cut and fill slopes). Soil spreading will not occur when the ground or topsoil is frozen or wet.

Public Health and Safety

- 38. Public Roads:** The hauling of equipment and materials on public roads to the project area would comply with New Mexico Department of Transportation regulations. LOGOS would notify the public of potential hazards by posting signage as necessary.
- 39. Vehicular Travel:** Vehicles would be restricted to traveling within the permitted disturbance areas and existing areas of surface disturbance, such as existing roads and well pads.
- 40. Safety:** Worker safety incidents would be reported to the BLM FFO as required under Notice to Lessees (NTL) 3A (USGS 1979). LOGOS would adhere to company safety policies, Occupational Safety and Health Administration regulations, and New Mexico Department of Transportation regulations.

Control of Waste

- 41. Drilling:** Drilling of the horizontal laterals would be accomplished with water-based mud. All cuttings would be placed in metal containment bins and hauled to a commercial disposal facility or land farm. The closed-loop system storage tanks would be sized to ensure confinement of all fluids and would provide sufficient freeboard to prevent uncontrolled releases. Drilling fluids would be stored on-site in aboveground storage tanks. Upon termination of drilling operations, the drilling fluids would be recycled and transferred to other permitted closed-loop systems or returned to the vendor for reuse, as practical. All residual fluids would be hauled to a commercial disposal facility.
- 42. Waste:** Portable toilets would be provided and maintained during construction, as needed. Garbage, trash, and other waste materials would be collected in a portable, self-contained, and fully enclosed trash container during drilling and completion operations. The accumulated trash would be removed, as needed, and would be disposed of at an authorized sanitary landfill. No trash would be buried or burned on location. Immediately after removal of the drilling rig, all debris and other waste materials not contained in the trash container would be cleaned up and removed from the well location.
- 43. Chemicals and Hazardous Substances:** No chemicals subject to reporting under the Superfund Amendments and Reauthorization Act Title III in an amount equal to or greater than 10,000 pounds would be used, produced, stored, transported, or disposed annually in association with the drilling, testing, or completing of these wells. No extremely hazardous substances (as defined in 40 CFR 355)

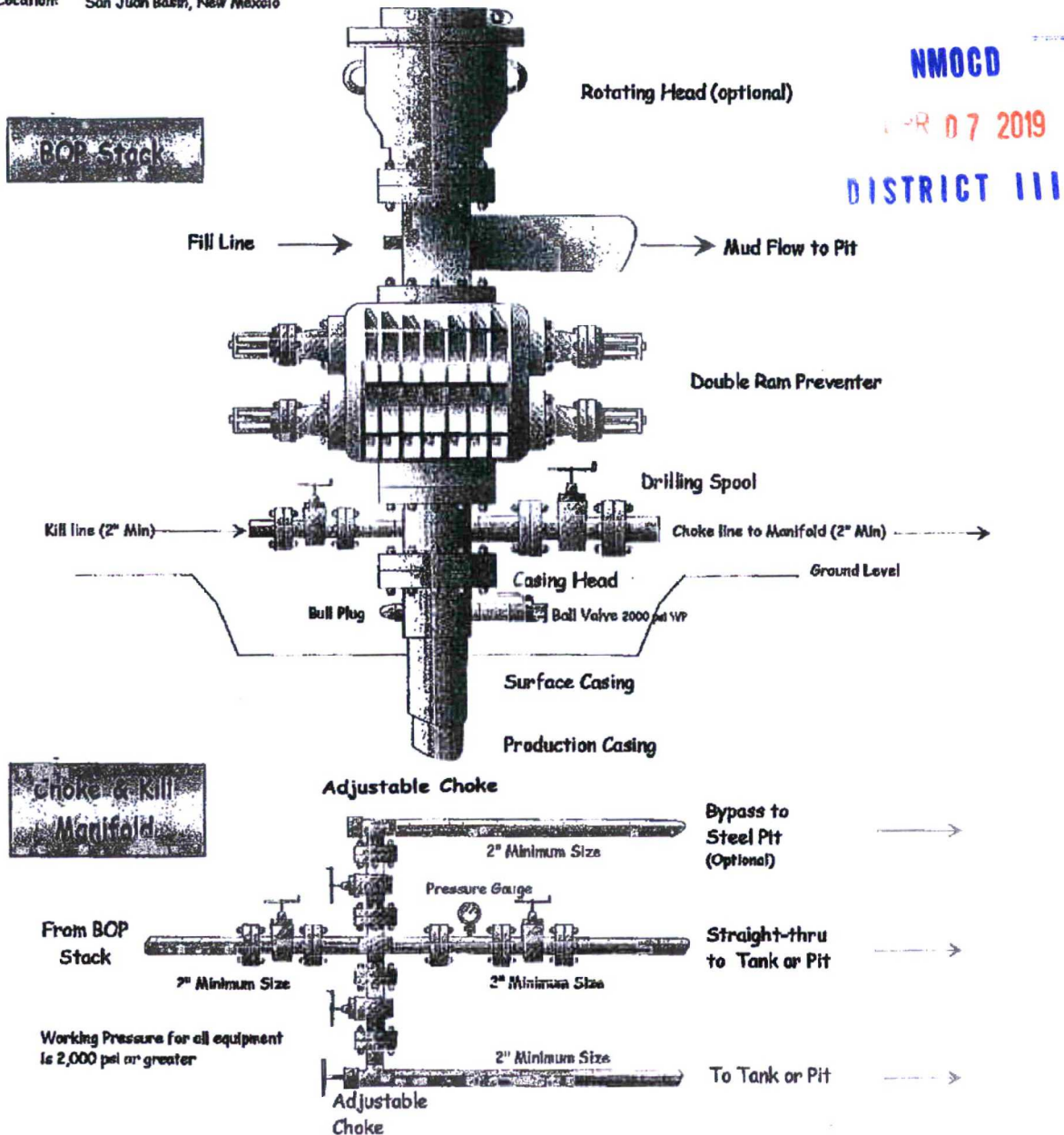


Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

Exhibit #1 Typical BOP setup

Location: San Juan Basin, New Mexico



NMOCB

PER 07 2019

DISTRICT III

**Directions from the Intersection of
Highway 550 and Highway 64 in Bloomfield, NM
to**

**LOGOS OPERATING, LLC
DRAGONFLY 2408 13C COM #1H
750' FNL 2168' FWL,
Section 13, T24N, R8W, N.M.P.M.,
San Juan County, New Mexico
Latitude: 36° 19'08.433" N
Longitude: 107° 38' 07.035" W
Nad 1983**

From the Intersection of Highway 550 & Highway 64

**Go South on Hwy 550 for 42.7 miles,
turn left (north-northwesterly) for 3.0 miles,
stay right (northwesterly) 0.8 miles,
stay right (northerly) 0.7 miles,
turn left (northerly) 0.5 miles,
stay left (northerly) 1.0 miles,
stay right (northerly) 0.7 miles,
stay left (northerly) 0.6 miles,
stay right (easterly) 2.4 miles
turn right (northerly) 0.6 miles,
turn left (southerly) 300'
stay right (southeasterly)
to the beginning of new access
on the right side of the field road, which begins and
continues southerly for 417.19'
to the new location.**