

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: 1/30/2019

Well information:

Operator Black Exploration, Well Name and Number Zianna 1

API# 30-043-21328, Section 18, Township 150N/S, Range 3E/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.

Brandon Powell
NMOCD Approved by Signature

7/30/19
Date

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: DRILL REENTER
1b. Type of Well: Oil Well Gas Well Other
1c. Type of Completion: Hydraulic Fracturing Single Zone Multiple Zone

5. Lease Serial No.
7902171419

6. If Indian, Allottee or Tribe Name
ZIA PUEBLO

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

8. Lease Name and Well No.
ZIANNA
1

2. Name of Operator
BLACK EXPLORATION LLC

9. API Well No.
30-043-21328

3a. Address
206 W 38th Street Farmington NM 87401

3b. Phone No. (include area code)
(505)325-7855

10. Field and Pool, or Exploratory
Wildcat

4. Location of Well (Report location clearly and in accordance with any State requirements. *)
At surface **F** SENW / 2191 FNL / 1849 FWL / LAT 35.53175 / LONG -106.66705
At proposed prod. zone SENW / 2191 FNL / 1849 FWL / LAT 35.53175 / LONG -106.66705

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 18 / T15N / R3E / NMP

14. Distance in miles and direction from nearest town or post office*
5.83 miles

12. County or Parish
SANDOVAL

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
1849 feet

16. No of acres in lease
33840.13

17. Spacing Unit dedicated to this well
40

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
56496 feet

19. Proposed Depth
3550 feet / 3550 feet

20. BLM/BIA Bond No. in file
IND: 46-2359774

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
5810 feet

22. Approximate date work will start*
04/01/2019

23. Estimated duration
10 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.
- 2. A Drilling Plan.
- 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).

- 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- 5. Operator certification.
- 6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature
(Electronic Submission)

Name (Printed/Typed)
Jim Lovato / Ph: (505)320-7378

Date
01/30/2019

Title
Consultant

Approved by (Signature)

Name (Printed/Typed)
Richard A. Fields

Date
MAY 23 2019

Title
Field Manager

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.

**DRILLING OPERATIONS
AUTHORIZED ARE SUBJECT TO
COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS"**

**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
 1575 N. FRENCH DR. TORO, NM 87410
 Phone: (505) 393-6101 Fax: (505) 393-6170
 District II
 111 N. First St. Artesia, NM 88210
 Phone: (505) 748-1280 Fax: (505) 748-9750
 District III
 1000 Rio Brazos Road, Aztec, NM 87410
 Phone: (505) 334-6158 Fax: (505) 334-6170
 District IV
 1720 S. St. Francis Dr. Santa Fe, NM 87505
 Phone: (505) 476-3400 Fax: (505) 476-3407

State of New Mexico
 Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
 1220 South St. Francis Dr.
 Santa Fe, NM 87505

Form C-10
 Revised August 1, 2011
 Submit one copy to appropriate
 District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

| | | |
|-----------------------------------|------------------------------------------------|-----------------------------------------|
| API Number 30-043-21328 | Pool Code 98321 | Pool Name WC 15N3E18; Entrada |
| Property Code 325996 | Property Name ZIANNA #1 | |
| OG/RID No 371259 | Operator Name Black Exploration, LLC | Elevation 5810' |

Surface Location

| U.I. or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|-----------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|----------|
| F | 18 | T15N | R3E | | 2191' | NORTH | 1849' | WEST | SANDOVAL |

Bottom Hole Location If Different From Surface

| U.I. or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|-----------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| | | | | | | | | | |

| | | | |
|---------------------------------|-----------------|--------------------|-----------|
| Dedicated Acres 40ac. | Joint or Infill | Consolidation Code | 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.

| | |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <p>OPERATOR CERTIFICATION</p> <p>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 retained 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.</p> <p><i>Bruce A. Black</i> Signature _____ Date _____</p> <p>Bruce A. Black, Manager Printed Name _____</p> <p>koko16@earthlink.net E-mail Address _____</p> <hr/> <p>SURVEYOR CERTIFICATION</p> <p>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.</p> <p>06/29/15 (REVISED 11/05/18) Date of Survey _____</p> <p>Signature and Seal of _____</p> <div style="text-align: center;"> </div> |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Federal Surface

**Attachment to Application for Permit To Drill.
Drilling Program**

Black Exploration LLC

Zianna No.1

Surface Location: 2191' FNL & 1849' FWL Section 18, T. 15N., R. 03E. NMPM

Ungraded GL Elevation 5810'

Sandoval County, New Mexico

Drilling program written in compliance with onshore Oil and Gas Order No. 1
(001 III.D.3, effective May 2007) and Onshore Order No. 2 Dated November 18, 1988.

1. Geological Name of Surface Formation Estimate Formation Top
 - A. The following table identifies the geologic markers and formation tops (depth in feet from surface) based on open hole logs from the nearest offset wells.

| FORMATION | ESTIMATED FORMATION TOP |
|---------------------|-------------------------|
| Quaternary Alluvium | Surface |
| Santa Fe Group | 10' |
| Mancos Shale | 800' |
| Niobrara | 1150' |
| Tocito | 1570' |
| L. Mancos Carlisle | 1580' |
| Greenhorn | 2180' |
| Dakota | 2380' |
| Burro Canyon | 2580' |
| Morrison | 2700' |
| Todilto | 3200' |
| Entrada | 3300' |
| Chinle | 3500' |
| Total Well Depth | 3550' |

2. Estimated Depth of all Zones Anticipated to Have Fluid Occurrences (Oil, Gas, Water)
 - A. All formations listed in the table above are expected to contain some water. The first potential valid objective formation that could contain oil and/or gas is the Cretaceous Point Lookout Sandstone. Any of the deeper

formations listed in the table above could also contain oil and gas, however our primary target zones are the Cretaceous Dakota, the Jurassic Entrada and the Pennsylvanian Madera Limestones. Other possible objectives are the Triassic Agua Zarca, the Permian Mesita Blanca, and possible Mississippian limestones as well as fractured basement rock in the Precambrian.

3. Pressure Control Equipment

A. Blowout Preventer (BOP) Equipment

| DEPTH INTERVAL | BOP EQUIPMENT |
|----------------|------------------------------|
| 0-325' | No pressure control required |
| 325' – 3550' | 11" 2000 psi double ram BOP |

i. Drilling spool to accommodate choke and kill lines with choke manifold rated at 2000 psi.

B. Ancillary Equipment

- i. Upper Kelly cock and lower Kelley cock will be installed while drilling.
- ii. Inside BOP or stab in valve will be available in open position on rig floor at all times.
- iii. Safety valves and subs to fit all string connections in use.

C. Choke Manifold

i. Refer to [Exhibit 1 Figure Drill-1](#) for detailed schematics ~~for each hole section.~~

D. BOP Testing

- i. An 11" 2M BOP stack will be installed on casing head after setting 9-5/8" surface casing.
- ii. The BLM and State of NM will be notified 24 hours in advance of all BOP pressure tests.
- iii. Pressure tests will be conducted on the BOP stack using a test plug and independent test company after nipple up.
- iv. Subsequent BOP tests will be conducted ~~a minimum of every 30 days. A new test will be conducted~~ each time the stack is altered.
- v. All BOP and manifold tests will be conducted in accordance with the requirements of Onshore Order No. 2 and Farmington Field Office Policy.

E. BOP Test Pressures

| 11" 2M BOP | | | |
|---------------|------------------------|--------------|---------------|
| Pressure Test | Ram Test | Hydrill Test | Manifold Test |
| High Pressure | 2000 psiesi | NA | 2000 psi |
| Low Pressure | 250 psiesi | NA | 250 psi |

4. Proposed Bit and Casing Program

A. Bit Program

12 1/4" Surface Hole = ~~Surface~~ to 325'

8 ~~3/4~~ 4" Production Hole to= 3550' = Production Casing Point

Casing Program - all casing strings are new casing

| Casing & Hole Size | Weight | Grade | Coupling | Setting Depth (MD) | Comments |
|------------------------------|---------|-----------|----------|--------------------|--------------------------------|
| 9-5/8" (12 1/4") | 36 ppf | J or K-55 | ST&C | 0' - 325' | New casing. Cement to surface. |
| 5-1/2" (8 3/4") | 15.5ppf | J-55 | LT&C | 0' - 3550' MD | New Casing. Cement to surface. |

Casing strings will be tested to .22 psi per foot of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield.

Minimum casing design factors used: Collapse- 1.125
 Burst- 1.0
 Joint Strength - ~~1.81~~.60

Surface casing shall have a minimum of 1 centralizer per joint on the bottom three (3) joints, starting with the shoe joint for a total of (4) minimum centralizers. Centralizers will be placed 10' above the shoe on the shoe joint, on the 1st, 2nd and 3rd casing collars then every other joint to surface.

The production casing will be centralized using 1 centralizer on the first 10 joints and then every 4th joint to the surface.

5. Proposed Cementing Program

The proposed cementing program has been designed to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use. The casing setting depth shall be calculated to position the casing seat opposite a competent formation which will contain the maximum pressure to which it will be exposed during normal drilling operations. All indications of useable water shall be reported.

A. The proposed cementing program is as follows:

Top plugs shall be used to reduce contamination of cement by displacement fluid. A bottom plug or other acceptable technique, such as a pre-flush fluid, inner string cement method, etc. shall be utilized to help isolate the cement from contamination by the mud fluid being displaced ahead of the cement slurry.

Surface Casing Single Stage Job - (0-325'):

Excess -125% over gauge hole -12-1/4" hole and 9-5/8" casing

Top of Cement - Surface

Main Slurry: 200 sx Premium, - 15.8 ppg, yield 1.16 cf/sx

Production Casing - Single Stage Job (Cement: 0' - 3550' MD):

Excess - 50% over gauge hole - 8-3/4" hole and 5-1/2" casing

Lead Cement

HALCEM (TM) SYSTEM

0.35 % HR-5 (Retarder Additive)

5 lbs/sx Kol Seal (Loss Circulation Additive)

1 lb/sx Pheno Seal Medium (Low Fluid Loss Control)

.125 lbs/sx Poly-E-Flake (Fluid Loss Control)

Fluid Weight

12.3 lbm/gal

Slurry Yield:

1.99 ft³/sk

Total Mixing Fluid:

6.75 Gal/sk

Volume:

816 ft³ - 145 bbls

Calculated Sacks:

410 sks

Tail Cement

FRACCEM(TM) SYSTEM

0.125 lbs/sx Poly-E-Flake (fluid loss Control)

0.7 % HALAD-R9 (Low Fluid Loss Control)

0.15% CFR SA-1015 (Suspension Agent)

5 lbs/sx Kol Seal

Fluid Weight

12.50 lbm/gal

Slurry Yield:

1.29 ft³/sk

Total Mixing Fluid:

5.64 Gal/sk

Volume:

493 ft³ - ~~8868~~ bbls

Calculated Sacks:

382 sx

Total sacks of cement pumped= 992 sx

Cement volumes are minimums and may be adjusted based on caliper log results.

Actual volumes will be calculated and determined by conditions onsite. All cement slurries will meet or exceed minimum BLM and State of New Mexico Oil & Gas Division requirements. Slurries used will be the slurries listed above or equivalent slurries depending on service provider selected. Cement yields may change depending on slurries selected.

All waiting on cement times shall be a minimum of 8 hours or adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

6. Proposed Drilling Fluid Program

A. Mud type and properties

| Hole Size (in) | TVD (ft) | Mud Type | Density (lb/gal) | Viscosity (sec/qt) | Fluid Loss (cc) |
|----------------|--------------|----------------------------|------------------|--------------------|-----------------|
| 12 1/4" | 0-325' | Fresh H ₂ O Mud | 8.4 - 8.6 | 70-100 | NC |
| 8-3/4" | 325' - 3550' | LSNDFresh Mud | 8.5-8.8 | 40-50 | 6 - 8 |

✓ i. Closed loop system will be utilized in accordance with NMOCD guidelines (NMOCD 19.15.17) with all solids placed on a drying pads or storage bins and liquids hauled to an approved disposal site. Solids will be THP tested and disposed of in an approved manner.

ii. Enough barite will be kept onsite to weight mud sufficiently to contain any unexpected pressures.

B. Monitoring

i. Mud volume and flow will be monitored visually.

7. Formation Evaluation Program

| | |
|--------------------------------------------------------------------------|------------------------------------------------------------------------|
| Cores | Possible Sidewall |
| Testing | None anticipated |
| Sampling | 30' samples from 325' to TD |
| Surveys | Single shot surveys as needed, or at a minimum every 500' to TD |
| Log Program: DIL-G R-SP, FDC-CNL-GR- Caliper in zones of interest | |

8. Drilling Conditions

A. Anticipated abnormal pressures or temperatures.

- i. No abnormal pressures or temperatures or other hazards are anticipated.
- ii. Maximum bottom hole pressure equals approximately ~~16241661~~ psig (pounds per square inch gauge)*

* Max mud wt x 0.052 x TD= A (bottom hole pressure)

~~8.89~~ X 0.052 X 3550 = ~~16241661~~ psig

** Maximum surface pressure= A- (0.22 x TD)

~~16241661~~ - (0.22 X 3550) = ~~843880~~ psig

B. Hydrogen Sulfide (H2S)

- i. H2S is not expected but standard monitoring and personal monitors will be in place on the rig and drilling crew.

9. Other Information

A. Drilling Schedule

| Activity | Date |
|---------------------------|-------------------------|
| Location Construction | June 2019 |
| Spud | June 2019 |
| Total Drilling Duration | 8 days drilling time |
| Total Completion Duration | 10 days completion time |

Well Control Equipment Schematic for 2M Service

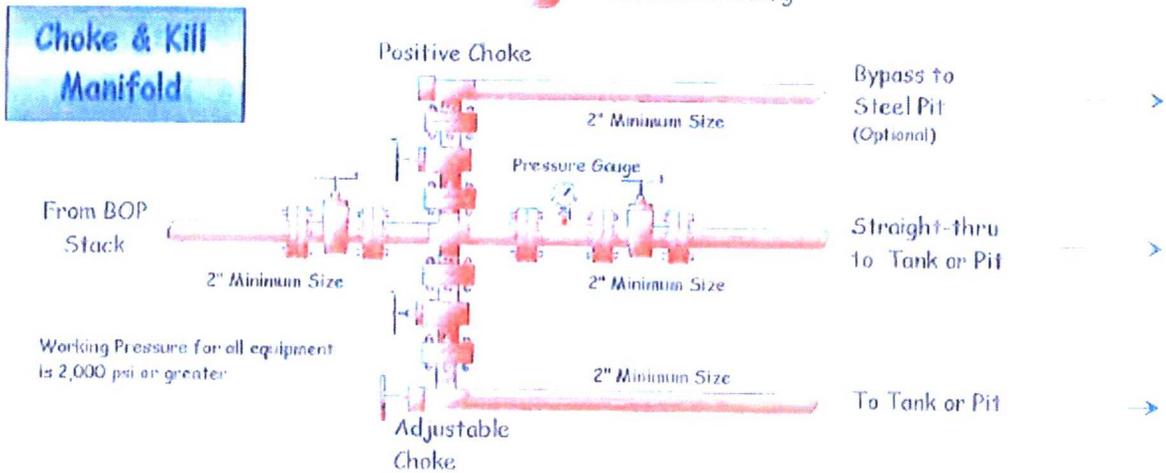
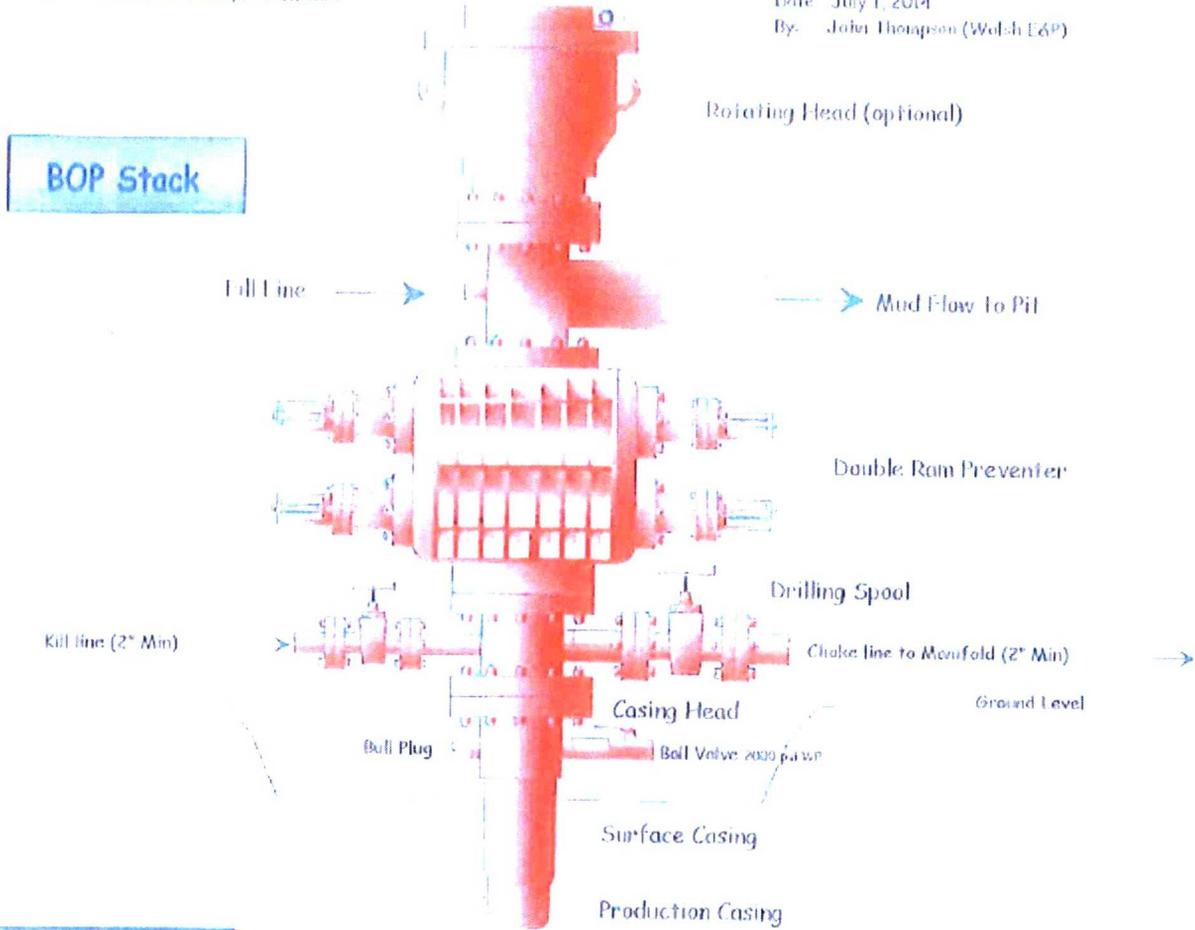
Attachment to Drilling Technical Program

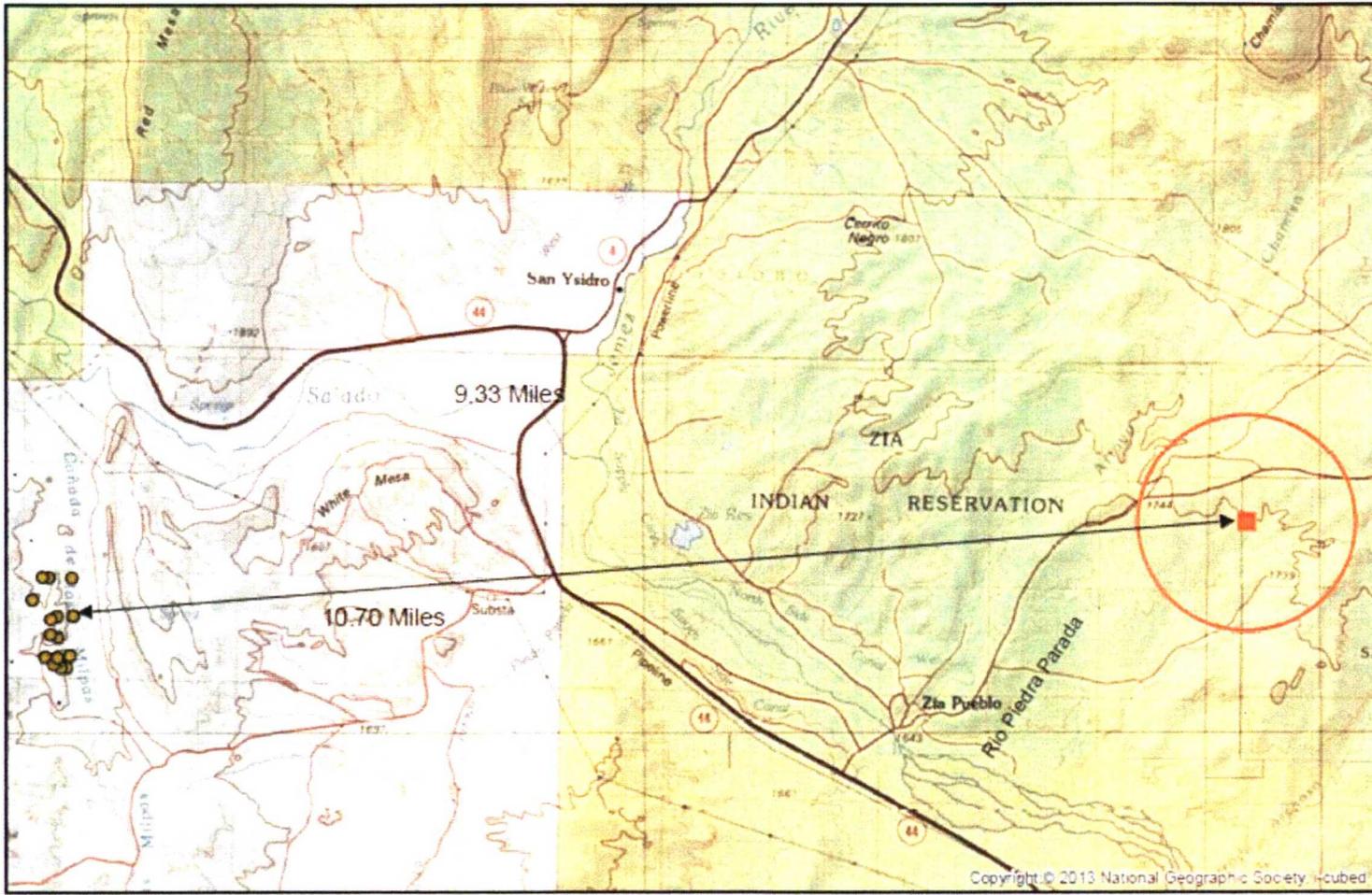
Exhibit #1 Typical BOP setup

Location: San Juan Basin, New Mexico

Date: July 1, 2014

By: John Thompson (Wolch E&P)





■ Zanna Well #1
 Zanna Well #1 One-Mile Radius Buffer
ONGARD Data Well Type
● Plugged
● Plugged

1:75,000 One Mile Radius Map
 Date: 10/31/2018
 T. 15N, R. 03E, Section 16, NMPM
 Sandoval County, NM
 Base Map: San Ysidro, NM,
 7.5' USGS Quadrangle
 NAD 1983 UTM Zone 13N

Zanna Well Point
 35.53175°N -106.66705°W
 NAD 83
 0 0.5 1 2 Miles

Topographic Map Scale
 1:65,000



The Zianna #001 well located in Sec 18, T 15N RNG 3E is a wildcat well that is to be drilled for exploration purpose. The anticipated gas drilled will be unusable gas and shale be flared. The closest gas producing well is located in SEC 8 22N 2W Jicarilla Tribal 358 #009 is roughly 66.9 miles demonstrating that the economics of installing infrastructure would be uneconomic. This date was compiled through NMOCD GIS Mapping and Google Earth.

Zianna #001 to Jicarilla 358 #009 66.9 miles

