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DISTRICT II-ARTESIA O.C.D.

Carlsbad Field Office
OCD Artesia

Form 3160-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NMNM0006764

6. If Indian, Allotee or Tribe Name

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

8. Lease Name and Well No. 322449
BUBBLES 22 15 FEDERAL 8H

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

2. Name of Operator
XTO ENERGY INCORPORATED 5380

9. API Well No. 30-015-45260

3a. Address
810 Houston St. Ft. Worth TX 76102

3b. Phone No. (include area code)
(432)620-6700

10. Field and Pool, or Exploratory
HACKBERRY; BONE SPRING, NW / HA

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface NESW / 2020 FSL / 1305 FEL / LAT 32.644159 / LONG -103.955475
At proposed prod. zone NENE / 200 FNL / 1305 FEL / LAT 32.667071 / LONG -103.95338

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 22 / T19S / R30E / NMP 97020

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

12. County or Parish
EDDY

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line, if any) 620 feet

16. No. of acres in lease
280

17. Spacing Unit dedicated to this well
240

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 50 feet

19. Proposed Depth
7540 feet / 15578 feet

20. BLM/BIA Bond No. on file
FED: UTB000138

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3313 feet

22. Approximate date work will start*
07/31/2017

23. Estimated duration
90 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

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 required by the BLM.

25. Signature
(Electronic Submission)

Name (Printed Typed)
Stephanie Rabadue / Ph: (432)620-6714

Date
11/29/2016

Title
Regulatory Compliance Analyst

Approved by (Signature)
(Electronic Submission)

Name (Printed Typed)
Cody Layton / Ph: (575)234-5959

Date
07/16/2018

Title
Assistant Field Manager Lands & Minerals

Office
CARLSBAD

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.

(Continued on page 2)

*(Instructions on page 2)

APPROVED WITH CONDITIONS

Approval Date: 07/16/2018

RWP 9-19-18

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160
PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.
ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.
EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Continued on page 3)

Additional Operator Remarks

Location of Well

1. SHL: NESW / 2020 FSL / 1305 FEL / TWSP: 19S / RANGE: 30E / SECTION: 22 / LAT: 32.644159 / LONG: -103.955475 (TVD: 0 feet, MD: 0 feet)
   PPP: SWNE / 2310 FNL / 825 FEL / TWSP: 19S / RANGE: 30E / SECTION: 22 / LAT: 32.64677 / LONG: -103.953917 (TVD: 7636 feet, MD: 8190 feet)
   BHL: NENE / 200 FNL / 1305 FEL / TWSP: 19S / RANGE: 30E / SECTION: 15 / LAT: 32.667071 / LONG: -103.95338 (TVD: 7540 feet, MD: 15578 feet)

BLM Point of Contact

Name: Judith Yeager

Title: Legal Instruments Examiner

Phone: 5752345936

Email: jyeager@blm.gov

Approval Date: 07/16/2018

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	XTO ENERGY INC.
LEASE NO.:	NMNM06764
WELL NAME & NO.:	8H – BUBBLE 22 15 FEDERAL
SURFACE HOLE FOOTAGE:	2020'/S & 1305'/E
BOTTOM HOLE FOOTAGE	200'/N & 660'/E; 15
LOCATION:	Section 22 T.19 S., R.30 E., NMPM
COUNTY:	Eddy County, New Mexico

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper**

copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) for Potash Areas:
After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

HIGH CAVE/KARST – A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH. THEREFORE, ONE INCH OPERATIONS ARE NOT SUFFICIENT TO PROTECT CAVE KARST RESOURCES. A CASING DESIGN THAT HAS A ONE INCH JOB PERFORMED DOES NOT COUNT AS A SOLID SHEATH.

ON A THREE STRING DESIGN; IF THE PRIMARY CEMENT JOB ON THE SURFACE CASING DOES NOT CIRCULATE, THEN THE NEXT TWO CASING STRINGS MUST BE CEMENTED TO SURFACE

R-111-P Potash
Capitan Reef
Possibility of water flows in the Salado, and Artesia Group
Possibility of lost circulation in the Rustler, Capitan Reef, Delaware, and Artesia Group

1. The **18 5/8** inch surface casing shall be set at approximately **350** feet and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

2. The minimum required fill of cement behind the **13-3/8** inch 1st intermediate casing shall be set at approximately **1650** feet is:

☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash and cave/karst.**

3. The minimum required fill of cement behind the **9-5/8** inch 2nd intermediate casing is:

Operator has proposed DV tool at depth of 2100', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

b. Second stage above DV tool:

☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave karst and potash.**

4. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   ☒ Cement should tie-back at least **50 feet above the Capitan Reef** (Top of Capitan Reef estimated at 2070'). Operator shall provide method of verification.

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

6. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **13-3/8** 1st intermediate casing shoe shall be **2000 (2M)** psi.

5. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** 2nd intermediate casing shoe shall be **3000 (3M)** psi.

6. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

   a. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

   b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

   c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

   d. The results of the test shall be reported to the appropriate BLM office.

   e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

   f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

CLN 08192017

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date:08/07/2017

☒ Original

Operator & OGRID No.: XTO Energy, Inc [005380]

☐ Amended - Reason for Amendment:

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility: Bubbles / Buttercup CTB

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Bubbles 22-15 Federal Com #8H		J-22-19S-30E	2020'FSL & 1305'FEL	2500	Flared/Sold	Gas Transporter Building to XTO

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Summit and will be connected to Summit low/high pressure gathering system located in Eddy County, New Mexico. It will require 0' of pipeline to connect the facility to low/high pressure gathering system. XTO Energy, Inc provides (periodically) to Summit a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, XTO Energy, Inc and Summit have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Gas Summit Processing Plant located in Sec. 36 Twn. 20S, Rng. 31E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Summit system at that time. Based on current information, it is XTO Energy, Inc's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

Approval Date: 07/16/2018

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	XTO ENERGY INC.
LEASE NO.:	NMNM06764
WELL NAME & NO.:	8H – BUBBLE 22 15 FEDERAL
SURFACE HOLE FOOTAGE:	2020'/S & 1305'/E
BOTTOM HOLE FOOTAGE	200'/N & 660'/E; 15
LOCATION:	Section 22 T.19 S., R.30 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Cave/Karst
  - Hydrology
  - Recreation
  - Potash
- ☐ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Production (Post Drilling)**
  - Pipelines
  - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

Approval Date: 07/16/2018

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Cave and Karst Conditions of Approval for APDs

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production:

Construction:

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:

- The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.
- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g., caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)
- Following a rain event, all fluids will vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

Tank Battery Liners and Berms:

Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing, or equivalent, to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:

A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:

Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:

Upon well abandonment in cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:

The operator will perform annual pressure monitoring on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

ROADS

- Roads will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems.
- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction and no further construction will be done until clearance has been issued by the Authorized Officer.
- Turnout ditches and drainage leadoffs will not be constructed in such a manner as to increase or decrease the natural flow of water into or out of cave or karst features.
- Special restoration stipulations or realignment may be required.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

BURIED PIPELINES and/or CABLES

- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, passages, or voids are intersected by trenching, and no pipe will be laid in the trench at that point until clearance has been issued by the Authorized Officer.
- If a void is encountered alignments may be rerouted to avoid the karst feature and lessen; the potential of subsidence or collapse of karst features, buildup of toxic or combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.

- Special restoration stipulations or realignment may be required at such intersections, if any.
- A leak detection plan **will be submitted to the BLM Carlsbad Field Office for approval** prior to pipeline installation. The method could incorporate gauges to detect pressure drops, situating values and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.
- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

FLOWLINES (SURFACE):

- Flowlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize the possibility of leaks and spills from entering karst systems.
- If a void is encountered alignments may be rerouted to avoid the karst feature and lessen; the potential of subsidence or collapse of karst features, buildup of toxic or combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.
- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

POWERLINES:

- Smaller powerlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems. Larger powerlines will adjust their pole spacing to avoid cave and karst features.
- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction.

- No further construction will be done until clearance has been issued by the Authorized Officer.
- Special restoration stipulations or realignment may be required.

Hydrology

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

A leak detection plan will be submitted to the BLM Carlsbad Field Office for approval prior to pipeline installation. The method could incorporate gauges to detect pressure drops, situating values and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

Potash

Lessees must comply with the 2012Secretarial Potash Order. The Order is designed to manage the efficient development of oil, gas, and potash resources. Section 6 of the Order provides general provisions which must be followed to minimize conflict between the industries and ensure the safety of operations.

To minimize impacts to potash resources, the proposed well is confined within the boundaries of the established Mojo Jojo Drill Island (See Potash Memo and Map in attached file for Drill Island description).

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

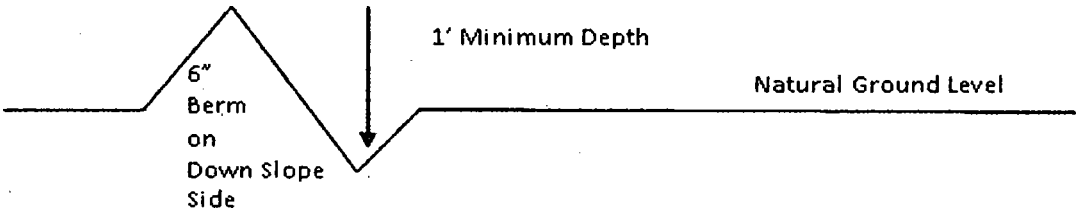
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Cattle guards

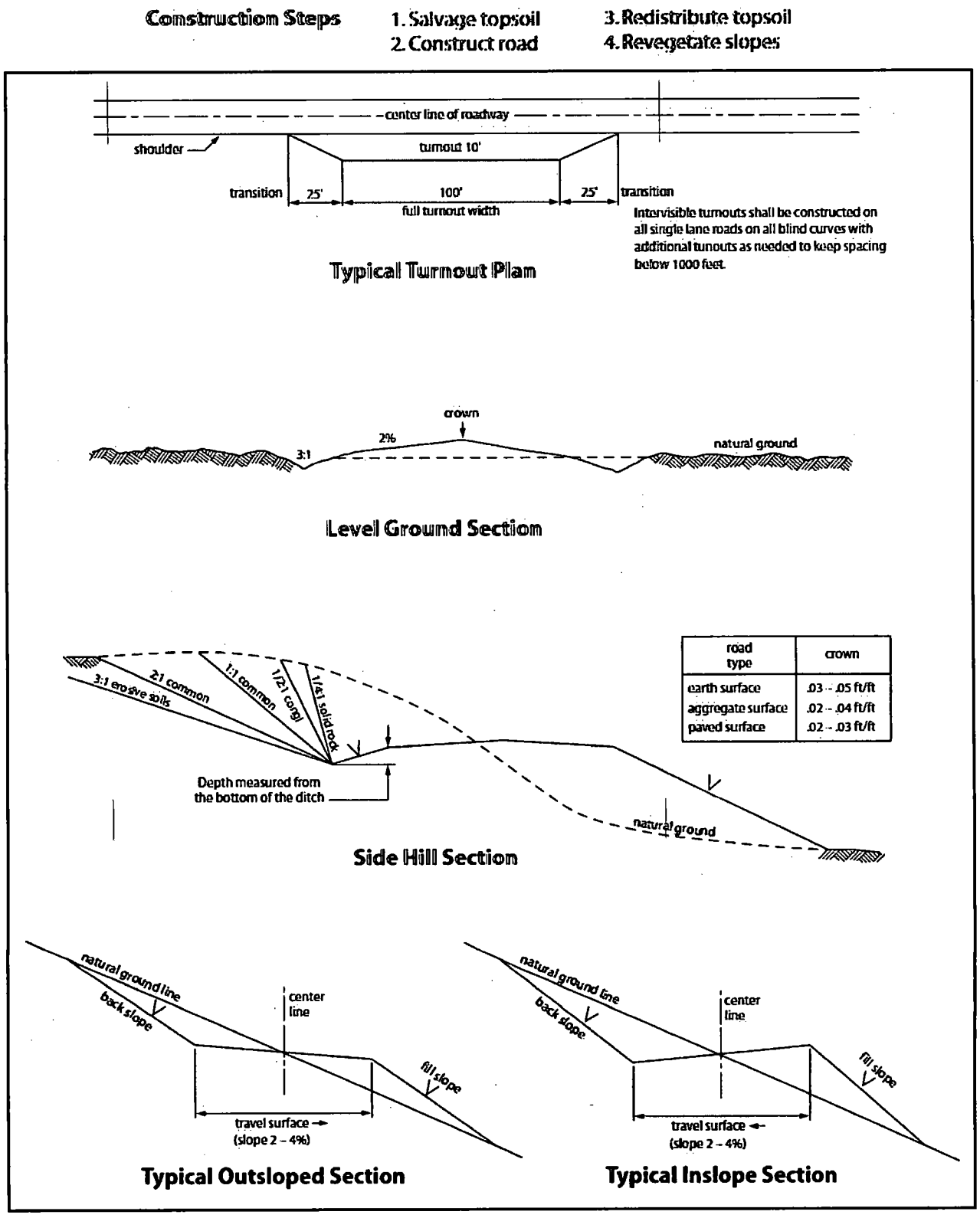
An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.



road type	crown
earth surface	.03 - .05 ft/ft
aggregate surface	.02 - .04 ft/ft
paved surface	.02 - .03 ft/ft

Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the application (Grant, Sundry Notice, APD) and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies

without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
b. Activities of other parties including, but not limited to:
    (1) Land clearing.
    (2) Earth-disturbing and earth-moving work.
    (3) Blasting.
    (4) Vandalism and sabotage.
c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of **20** feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline must be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline will be "snaked" around hummocks and dunes rather then suspended across these features.

9. The pipeline shall be buried with a minimum of **24** inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed

is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, powerline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

17. Surface pipelines must be less than or equal to 4 inches and a working pressure below 125 psi.

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the

Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately ___6___ inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

( ) seed mixture 1 ( ) seed mixture 3

( ) seed mixture 2 ( ) seed mixture 4

(X) seed mixture 2/LPC ( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information

thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-

of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:
- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture for LPC Sand/Shinnery Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

Approval Date: 07/16/2018

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report

07/25/2018

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Stephanie Rabadue **Signed on:** 11/28/2016

Title: Regulatory Compliance Analyst

Street Address: 500 W. Illinois St, Ste 100

City: Midland **State:** TX **Zip:** 79701

Phone: (432)620-6714

Email address: stephanie_rabadue@xtoenergy.com

Field Representative

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

APD ID: 10400008477 **Submission Date:** 11/29/2016

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUBBLES 22 15 FEDERAL **Well Number:** 8H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400008477 **Tie to previous NOS?** **Submission Date:** 11/29/2016

BLM Office: CARLSBAD **User:** Stephanie Rabadue **Title:** Regulatory Compliance Analyst

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM0006764 **Lease Acres:** 280

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? NO **APD Operator:** XTO ENERGY INCORPORATED

Operator letter of designation: Bubbles Fed_Op_11-29-2016.pdf

Operator Info

Operator Organization Name: XTO ENERGY INCORPORATED

Operator Address: 810 Houston St.

Zip: 76102

Operator PO Box:

Operator City: Ft. Worth **State:** TX

Operator Phone: (432)620-6700

Operator Internet Address: Richard_redus@xtoenergy.com

Section 2 - Well Information

Well in Master Development Plan? NO **Mater Development Plan name:**

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: BUBBLES 22 15 FEDERAL **Well Number:** 8H **Well API Number:**

Field/Pool or Exploratory? Field and Pool [redacted] **Pool Name:** HACKBERRY; BONE SPRING, NW

Is the proposed well in an area containing other mineral resources? USEABLE WATER,POTASH

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUBBLES 22 15 FEDERAL **Well Number:** 8H

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** YES **New surface disturbance?** Y

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** BUBBLES 22 15 **Number:** 1H

Well Class: HORIZONTAL **Number of Legs:**

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: CONFIRMATION

Describe sub-type:

Distance to town: **Distance to nearest well:** 50 FT **Distance to lease line:** 620 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: Bubbles 8H_Plat_11-28-2016.pdf

Well work start Date: 07/31/2017 **Duration:** 90 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number:

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	2020	FSL	1305	FEL	19S	30E	22	Aliquot NESW	32.644159	-103.955475	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0006764	3313	0	0
KOP Leg #1	2020	FSL	1305	FEL	19S	30E	22	Aliquot NESW	32.644159	-103.955475	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0006764	-3183	6496	6496
PPP Leg #1	2310	FNL	825	FEL	19S	30E	22	Aliquot SWNE	32.64677	-103.953917	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0243816	-4323	8190	7636

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUBBLES 22 15 FEDERAL **Well Number:** 8H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
EXIT Leg #1	330	FNL	662	FEL	19S	30E	15	Aliquot NENE	32.666714	-103.953389	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0243816	-4229	15400	7542
BHL Leg #1	200	FNL	1305	FEL	19S	30E	15	Aliquot NENE	32.667071	-103.95338	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 0243816	-4227	15578	7540

Stephanie Rabadue
Regulatory Analyst
XTO Energy Inc.
500 W. Illinois St Ste 100
Midland, Texas 79701
(432) 620-6714
stephanie_rabadue@xtoenergy.com

November 14, 2016

Bureau of Land Management
Carlsbad Field Office
620 E. Greene Street
Carlsbad, NM 88220

RE: Operating Agreement/Rights for Bubbles 22 15 Federal #1H, 2H, 3H, 4H, 5H, 6H, 7H, 8H

To Whom It May Concern:

XTO Energy, Inc. is has operating rights over leases: NMNM0243816. The lessor of record is Mobil Producing. XTO Energy, Inc is a subsidiary of ExxonMobil Corporation, which is the operator of all domestic Exxon and Mobil acreage.

Sincerely,

Stephanie Rabadue

Stephanie Rabadue
Regulatory Analyst
XTO Energy, Inc

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUBBLES 22 15 FEDERAL **Well Number:** 8H

Bubbles_Fed_8H_CM_05-26-2017.pdf

BOP Diagram Attachment:

Bubbles_Fed_8H_2MBOP_05-26-2017.pdf

Pressure Rating (PSI): 3M **Rating Depth:** 7636

Equipment: The blow out preventer equipment (BOP) for this well consists of a 13-5/8" minimum 3M Hydril and a 13-5/8" minimum 3M Double Ram BOP.
Requesting Variance? YES

Variance request: A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. Attached is an example of a certification and pressure test chart. The manufacturer does not require anchors.
Testing Procedure: All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nippling up on the 13-5/8" 3M bradenhead and flange, the BOP test will be limited to 3000psi. When nippling up on the 9-5/8", the BOP will be tested to a minimum of 3000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 3M BOP diagram is attached. Blind rams will be function tested each trip, pipe rams will be function tested each day.

Choke Diagram Attachment:

Bubbles 8H_CM_11-29-2016.pdf

BOP Diagram Attachment:

Bubbles 8H_BOP_11-29-2016.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	26	18.625	NEW	API	N	0	450	0	450			450	H-40	87.5	STC	3.06	7.92	DRY	14.2	DRY	14.2
2	INTERMEDIATE	17.5	13.375	NEW	API	N	0	1500	0	1500			1500	J-55	54.5	BUTT	2.39	3.43	DRY	10.43	DRY	10.43
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4050	0	4050			4050	J-55	36	LTC	1.86	3.25	DRY	3.11	DRY	3.11
4	PRODUCTION	8.75	5.5	NEW	API	N	0	15614	0	7636			15614	P-110	17	BUTT	2.05	1.12	DRY	2.98	DRY	2.98

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUBBLES 22 15 FEDERAL **Well Number:** 8H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Bubbles_Federal_8H_Csg_Specs_05-26-2017.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Bubbles_Federal_8H_Csg_Specs_05-26-2017.pdf

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Bubbles_Federal_8H_Csg_Specs_05-26-2017.pdf

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUBBLES 22 15 FEDERAL **Well Number:** 8H

Casing Attachments

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Bubbles_Federal_8H_Csg_Specs_05-26-2017.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	450	1197	1.68	14.8	2010.96	100	HalCem-C	+ 2% CaCl
INTERMEDIATE	Lead		0	1500	739	1.88	12.9	1389.32	100	EconoCem-HLC	+ 5% salt + 5 lbm/sk Kol-Seal
INTERMEDIATE	Tail				522	1.33	14.8	694.26	100	HalCem-C	none
INTERMEDIATE	Lead	2100	0	2100	483	1.33	12.9	642.39	100	EconoCem-HLC	+ 5% salt + 5 lbm/sk Kol-Seal
INTERMEDIATE	Tail				235	1.33	14.8	312.55	100	HalCem-C	none
INTERMEDIATE	Lead	2100	2100	4050	533	1.88	12.9	1002.04	100	EconoCem-HLC	+ 5% salt + 5 lbm/sk Kol-Seal
INTERMEDIATE	Tail				235	1.33	14.8	312.55	100	HalCem-C	none
PRODUCTION	Lead		0	15578	872	2.69	10.5	2345.68	30	Tuned Light	+ 0.5 lbm/sk CFR-3 + 1.5 lbm/sk salt + 0.1% HR601
PRODUCTION	Tail				1581	1.61	13.2	2545.41	30	VersaCem PBHS2	+ 0.5% LAP-1 + 0.25 lbm/sk D-air 5000 + 0.2% HR 601 + 0.4% CFR-3 + 1 pps Salt

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUBBLES 22 15 FEDERAL **Well Number:** 8H

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: The necessary mud products for weight addition and fluid loss control will be on location at all times.

Describe the mud monitoring system utilized: A Pason or Totco will be used to detect changes in loss or gain of mud volume.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	450	OTHER : FW/Native	8.5	8.8							A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system
450	1500	SALT SATURATED	9.8	10.2							A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system
1500	4050	OTHER : FW/Cut Brine/Poly-Sweeps	8.6	9.6							A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUBBLES 22 15 FEDERAL **Well Number:** 8H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
											as a closed loop system
4050	15578	OTHER : FW/Cut Brine/Poly-Sweeps	8.6	9.6							

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

Mud Logger: Mud Logging Unit (2 man) on below intermediate casing.

Open hole logging to include Density/Neutron/PE/Dual Laterlog/Spectral Gamma from kick-off point to intermediate casing shoe.

List of open and cased hole logs run in the well:

CBL,CNL,DS,DLL,GR,MUDLOG

Coring operation description for the well:

No coring will take place on this well.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 3812 **Anticipated Surface Pressure:** 2132.08

Anticipated Bottom Hole Temperature(F): 165

Anticipated abnormal pressures, temperatures, or potential geologic hazards? YES

Describe:

Potential loss of circulation through the Capitan Reef.

Contingency Plans geoharzards description:

The necessary mud products for weight [illegible] and fluid loss control will be on location at all times. A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hours to determine density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down rather mud up. Rig up solids [illegible] operates as a closed loop system. Lost circulation could occur but is not expected to be a serious problem. [illegible] will be compensated for by adding [illegible] pounds of LCM in the drilling fluid.

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUBBLES 22 15 FEDERAL **Well Number:** 8H

Hydrogen sulfide drilling operations plan:

Bubbles 8H_H2S_11-29-2016.pdf

Bubbles 8H_Rig_11-29-2016.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Bubbles 8H_Direct_11-29-2016.pdf

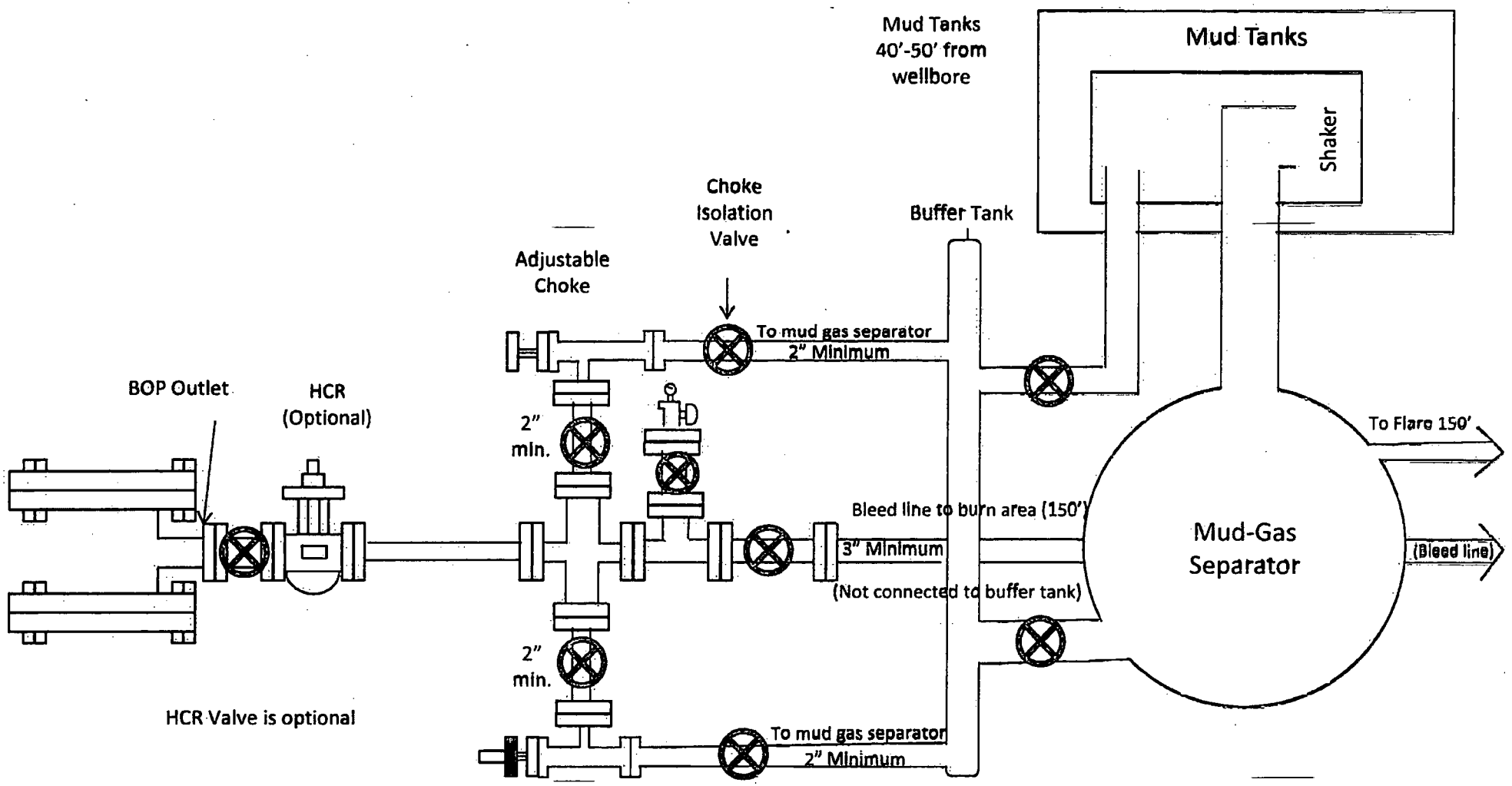
Other proposed operations facets description:

Other proposed operations facets attachment:

Bubbles Fed_Flex_11-29-2016.pdf

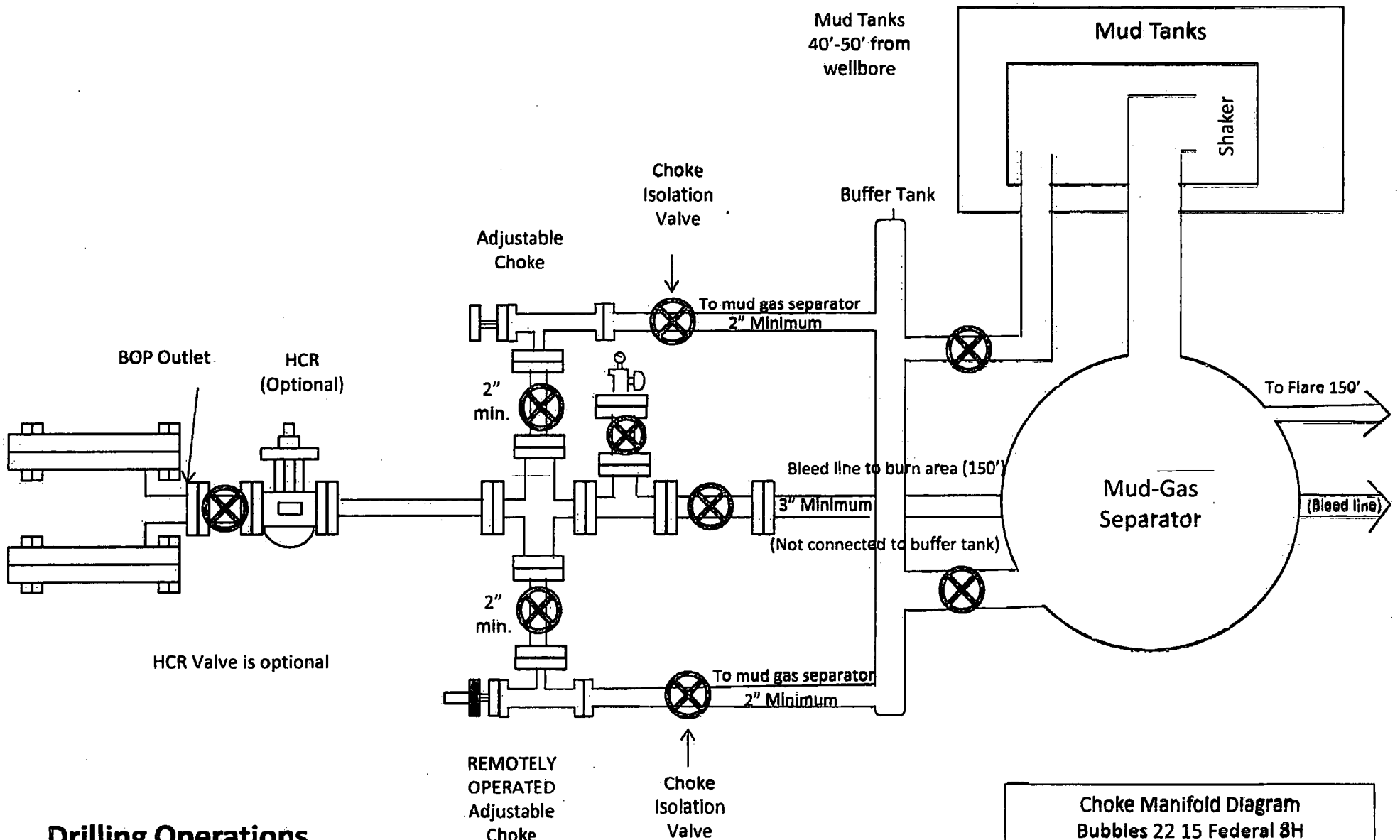
Bubbles_Fed_8H_Drill_Prog_05-26-2017.pdf

Other Variance attachment:



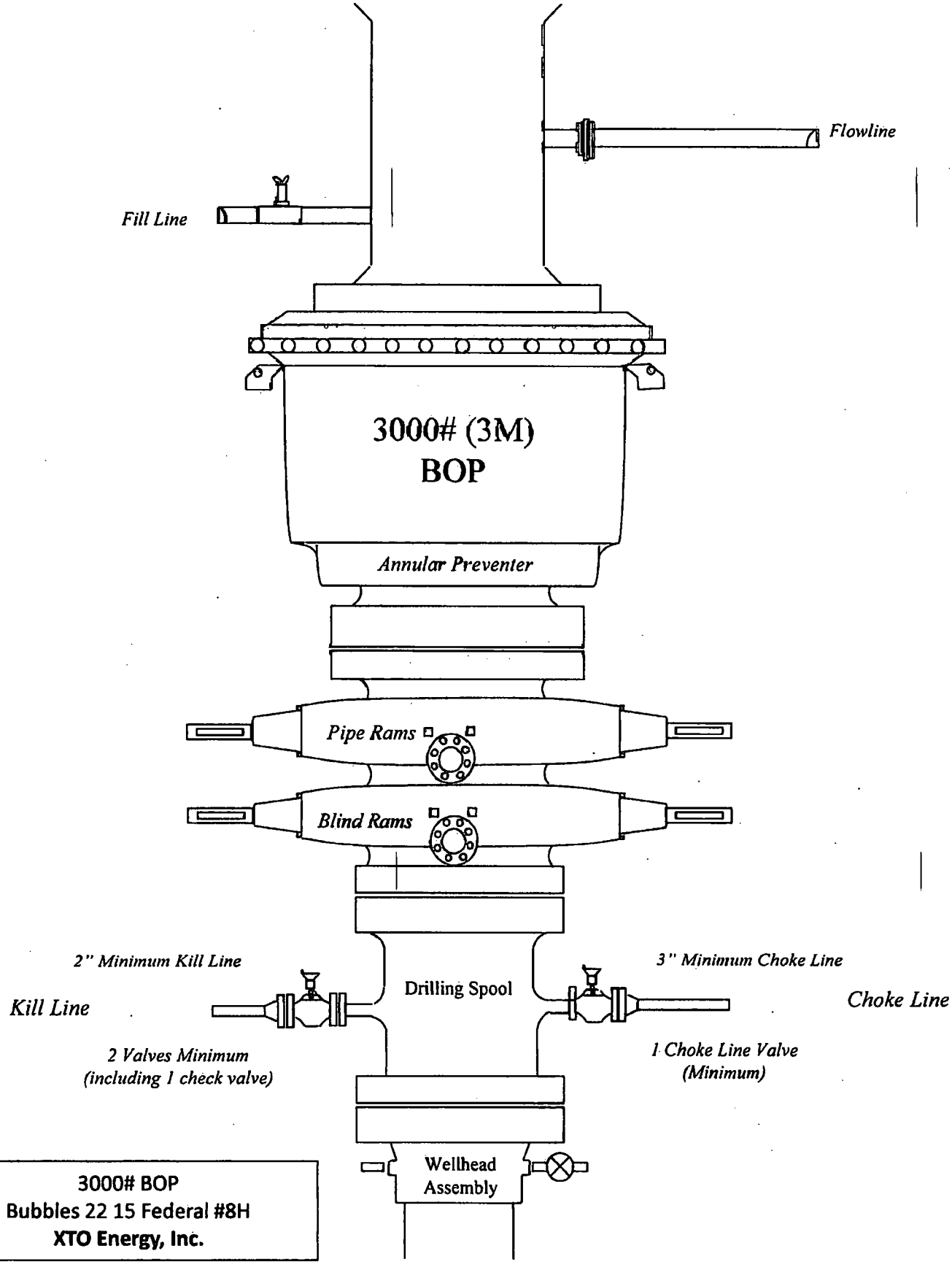
Drilling Operations
Choke Manifold

Choke Manifold Diagram
Bubbles 22 15 Federal 8H
XTO Energy, Inc..

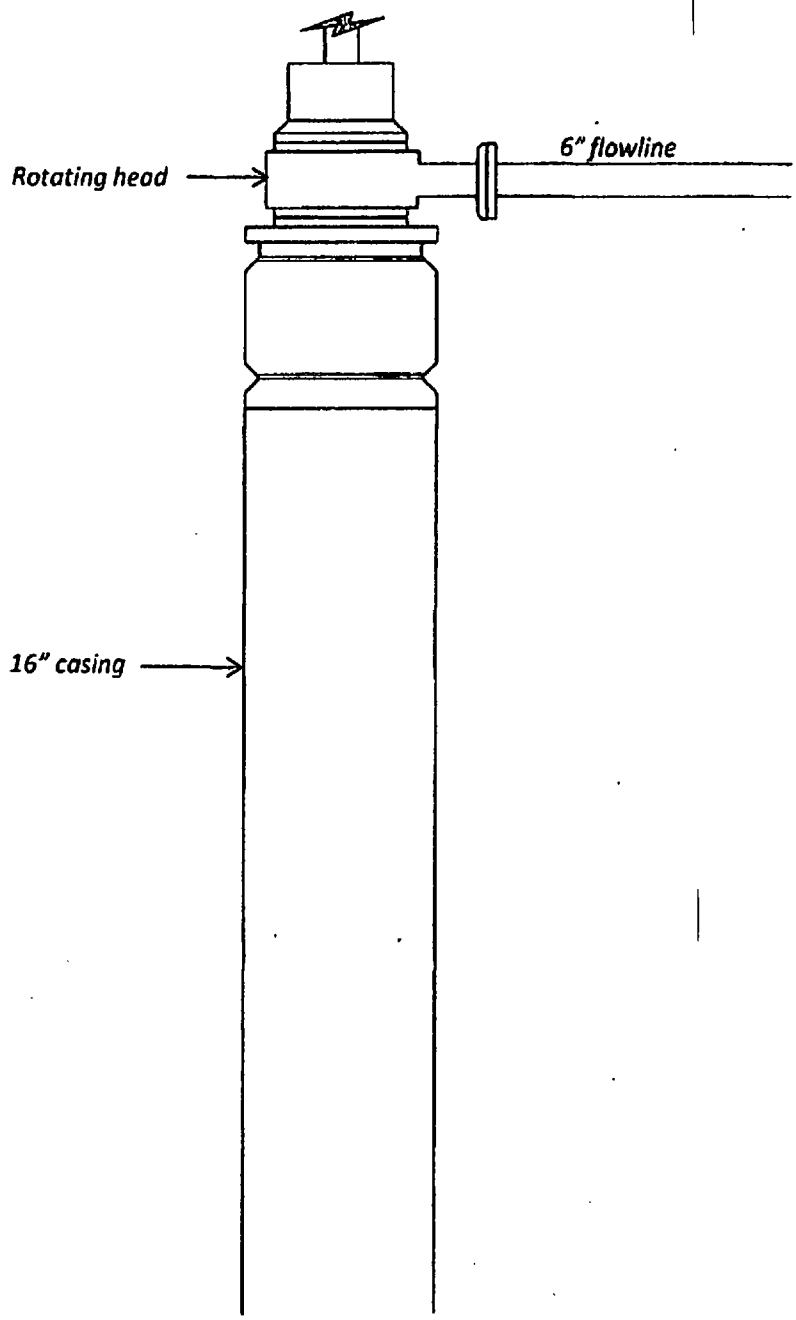


Drilling Operations
Choke Manifold

Choke Manifold Diagram
Bubbles 22 15 Federal 8H
XTO Energy, Inc..



3000# BOP
Bubbles 22 15 Federal #8H
XTO Energy, Inc.



2000# BOP
Bubbles Federal 8H
XTO Energy, Inc

DRILLING PLAN: BLM COMPLIANCE
(Supplement to BLM 3160-3)

XTO Energy Inc.
Bubbles 22 15 Federal 8H
Projected TD: 15578' MD / 7636' TVD
SHL: 2020' FSL & 1305' FEL, SECTION 22, T19S, R30E
1st Take Point: 2310 FNL & 825' FEL, SECTION 22-T19S-R30E
2nd Take Point: 330 FNL & 663' FEL, SECTION 15-T19S-R30E
BHL: 200' FNL & 660' FEL, SECTION 15, T19S, R30E
Eddy County, NM

1. CASING PROGRAM:

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
26"	0' – 450'	18-5/8"	87.5#	STC	H-40	New	7.92	3.06	14.2
17-1/2"	0' – 1500'	13-3/8"	54.5#	BTC	J-55	New	3.43	2.39	10.43
12-1/4"	0' – 4050'	9-5/8"	36#	LTC	J-55	New	3.25	1.86	3.11
8-3/4" x 8-1/2"	0' – 15614'	5-1/2"	17#	BTC	P-110	New	1.12	2.05	2.98

- XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.
- 5-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35

WELLHEAD:

Temporary Wellhead
- 18-5/8" SOW x 21-1/4" 2M top flange

Permanent Wellhead – GE RSH Multibowl System

A. Starting Head: 13-5/8" 5M top flange x 13-3/8" SOW bottom
B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange
- Wellhead will be installed by manufacturer's representatives.
- Manufacturer will monitor welding process to ensure appropriate temperature of seal.
- Manufacturer will witness installation of test plug for initial test.
- Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.

DRILLING PLAN: BLM COMPLIANCE
(Supplement to BLM 3160-3)

XTO Energy Inc.
Bubbles 22 15 Federal 8H
Projected TD: 15578' MD / 7636' TVD
SHL: 2020' FSL & 1305' FEL, SECTION 22, T19S, R30E
1st Take Point: 2310 FNL & 825' FEL, SECTION 22-T19S-R30E
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Eddy County, NM

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26"	0' – 450'	18-5/8"	87.5#	STC	H-40	New	7.92	3.06	14.2
17-1/2"	0' – 1500'	13-3/8"	54.5#	BTC	J-55	New	3.43	2.39	10.43
12-1/4"	0' – 4050'	9-5/8"	36#	LTC	J-55	New	3.25	1.86	3.11
8-3/4" x 8-1/2"	0' – 15614'	5-1/2"	17#	BTC	P-110	New	1.12	2.05	2.98

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   - Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.

DRILLING PLAN: BLM COMPLIANCE
(Supplement to BLM 3160-3)

XTO Energy Inc.
Bubbles 22 15 Federal 8H
Projected TD: 15578' MD / 7636' TVD
SHL: 2020' FSL & 1305' FEL, SECTION 22, T19S, R30E
1st Take Point: 2310 FNL & 825' FEL, SECTION 22-T19S-R30E
2nd Take Point: 330 FNL & 663' FEL, SECTION 15-T19S-R30E
BHL: 200' FNL & 660' FEL, SECTION 15, T19S, R30E
Eddy County, NM

1. CASING PROGRAM:

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
26"	0' – 450'	18-5/8"	87.5#	STC	H-40	New	7.92	3.06	14.2
17-1/2"	0' – 1500'	13-3/8"	54.5#	BTC	J-55	New	3.43	2.39	10.43
12-1/4"	0' – 4050'	9-5/8"	36#	LTC	J-55	New	3.25	1.86	3.11
8-3/4" x 8-1/2"	0' – 15614'	5-1/2"	17#	BTC	P-110	New	1.12	2.05	2.98

- XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.
- 5-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35

WELLHEAD:

Temporary Wellhead

- 18-5/8" SOW x 21-1/4" 2M top flange

Permanent Wellhead – GE RSH Multibowl System

A. Starting Head: 13-5/8" 5M top flange x 13-3/8" SOW bottom
B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange
- Wellhead will be installed by manufacturer's representatives.
- Manufacturer will monitor welding process to ensure appropriate temperature of seal.
- Manufacturer will witness installation of test plug for initial test.
- Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.

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(Supplement to BLM 3160-3)

XTO Energy Inc.
Bubbles 22 15 Federal 8H
Projected TD: 15578' MD / 7636' TVD
SHL: 2020' FSL & 1305' FEL, SECTION 22, T19S, R30E
1st Take Point: 2310 FNL & 825' FEL, SECTION 22-T19S-R30E
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8-3/4" x 8-1/2"	0' – 15614'	5-1/2"	17#	BTC	P-110	New	1.12	2.05	2.98

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   - Manufacturer will witness installation of test plug for initial test.
   - Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.

November 14, 2016

Stephanie Rabadue
XTO Energy Inc.
500 W. Illinois St Ste 100
Midland, TX 79701
432-620-6714
stephanie_rabadue@xtoenergy.com

Bureau of Land Management
620 E. Greene
Carlsbad, NM 88220
575-887-6544

Dear Sirs:

XTO Energy Inc. does not anticipate encountering H2S while drilling the Bubbles Federal Com #8H located in Section 22, T19S, R30E, in Eddy County, New Mexico. As a precaution, I have attached an H2S contingency plan along with a gas analysis of our well stream. If you need anything further, please contact me at the telephone number or email listed above.

Thank you,

Stephanie Rabadue

Stephanie Rabadue
Regulatory Analyst

HYDROGEN SULFIDE (H2S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H_2S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
  - Detection of H_2S, and
  - Measures for protection against the gas,
  - Equipment used for protection and emergency response.

Ignition of Gas source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = I	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = I	2 ppm	N/A	1000 ppm

Contacting Authorities

XTO Energy Inc's personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. (Operator Name)'s response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

EUNICE OFFICE – EDDY & LEA COUNTIES

EMSU @ Oil Center, NM, 8/10ths mile west of Hwy 8 on Hwy 175 Eunice, NM	575-394-2089

XTO ENERGY INC PERSONNEL:

Logan Farmar, Drilling Engineer	432-234-9872
Milton Turman, Drilling Superintendent	817-524-5107
Jeff Raines, Construction Foreman	432-557-3159
Dudley McMinn, EH & S Manager	432-557-7976
Rick Wilson, Production Foreman	575-441-1147

SHERIFF DEPARTMENTS:

Eddy County	575-887-7551
Lea County	575-396-3611

NEW MEXICO STATE POLICE:	575-392-5588

FIRE DEPARTMENTS:

	911
Carlsbad	575-885-2111
Eunice	575-394-2111
Hobbs	575-397-9308
Jal	575-395-2221
Lovington	575-396-2359

HOSPITALS:

	911
Carlsbad Medical Emergency	575-885-2111
Eunice Medical Emergency	575-394-2112
Hobbs Medical Emergency	575-397-9308
Jal Medical Emergency	575-395-2221
Lovington Medical Emergency	575-396-2359

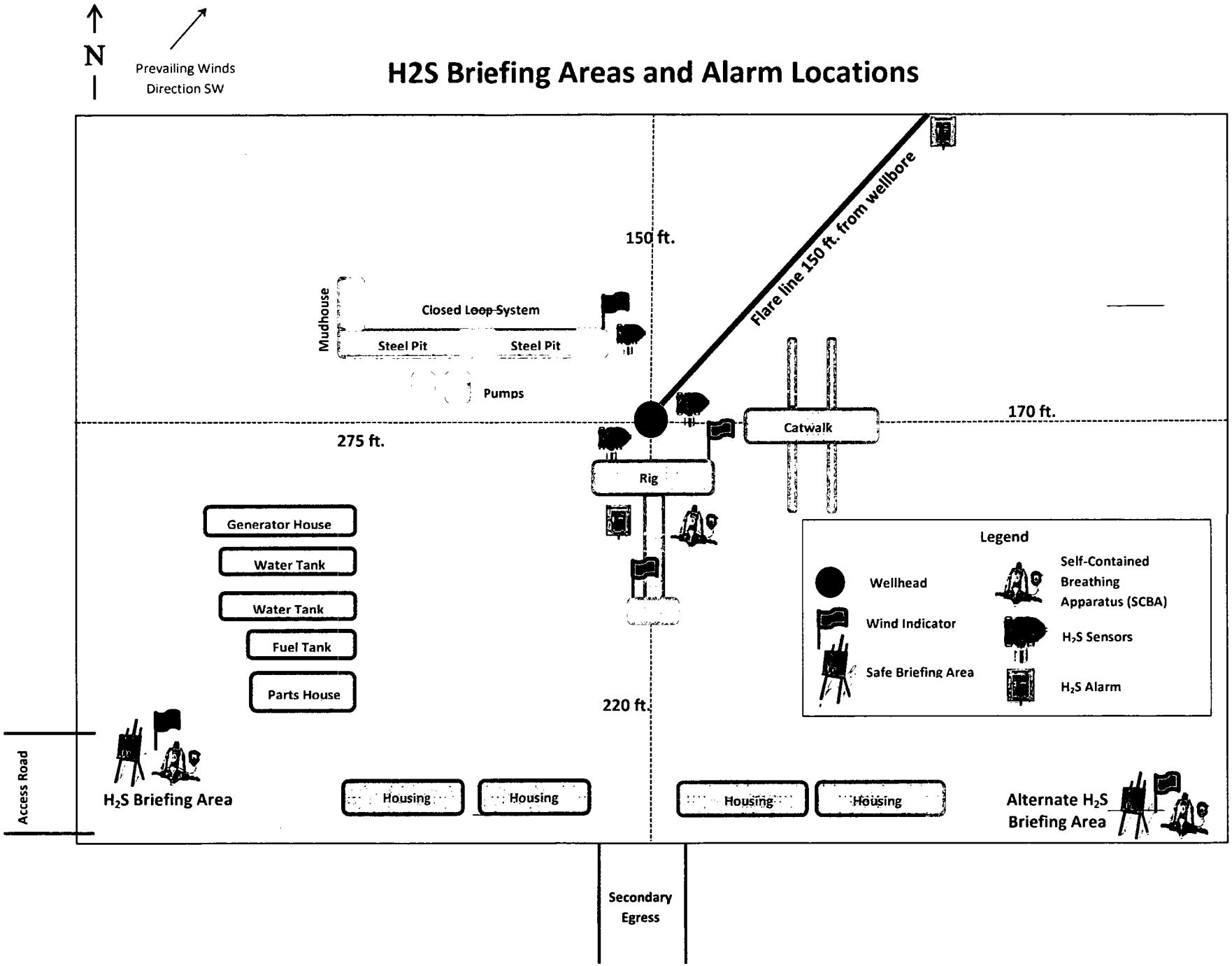
AGENT NOTIFICATIONS:

Bureau of Land Management	575-234-5972
New Mexico Oil Conservation Division	575-393-6161

CONTRACTORS:

ABC Rental – Light Towers	575-394-3155
Bulldog Services – Trucking/Forklift	575-391-8543
Champion – Chemical	575-393-7726
Indian Fire & Safety	575-393-3093
Key – Dirt Contractor	575-393-3180
Key Tools – Light Towers	575-393-2415
Sweatt – Dirt Contractor	575-397-4541
RWI – Contract Gang	575-393-5305

H2S Briefing Areas and Alarm Locations



Company: XTO Energy
Site: Bubbles 22 15 Federal
Well: 8H
Project: Eddy County, New Mexico (NAD 27)
Rig: Noram 25

MS Energy Services.
WWW.MSENERGYSERVICES.COM

T G M

Azimuths to Grid North
True North: -0.20°
Magnetic North: 7.07°

Magnetic Field
Strength: 48310.8snT
Dip Angle: 60.42°
Date: 10/10/2016
Model: BGGM2016

US State Plane 1927 (Exact solution)
New Mexico East 3001

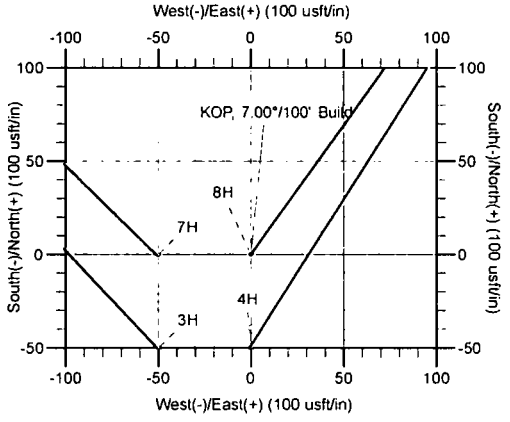
Created By: VLS
Date: 13:27, September 19 2016
Plan: Design #2

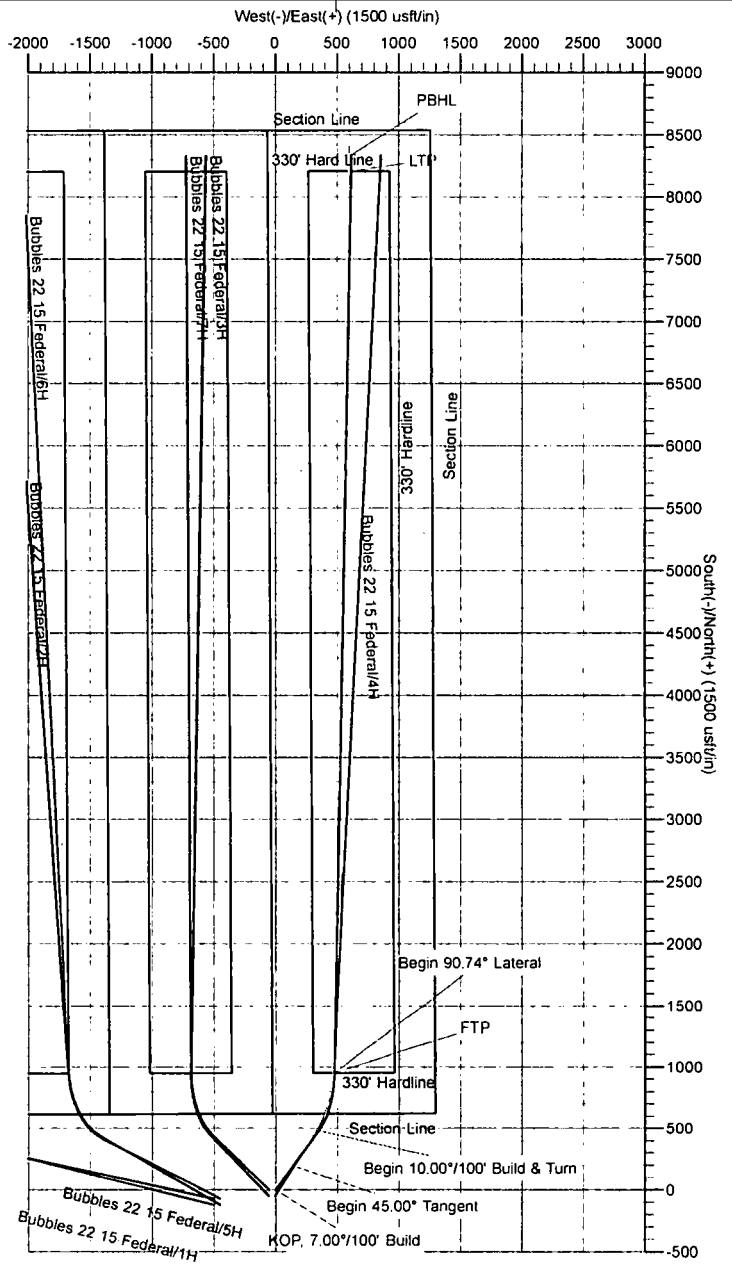
Landing Point
X: 616939.5 Y: 599172

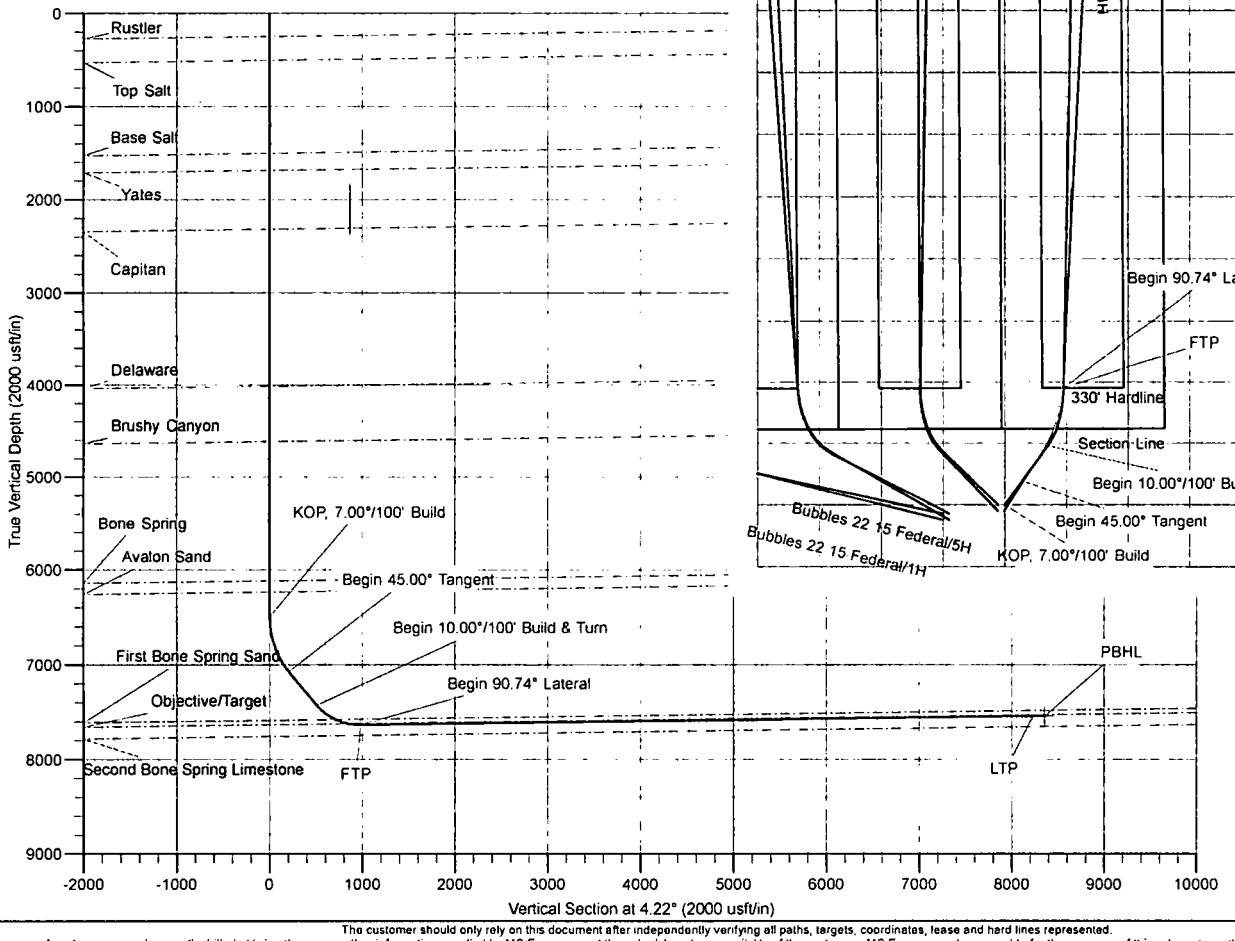
PBHL
X: 617078.7 Y: 606558.1

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
6496.10	0.00	0.00	6496.10	0.00	0.00	0.00	0.00	KOP, 7.00°/100' Build
7138.96	45.00	35.80	7074.88	194.44	140.24	204.24	239.74	Begin 45.00° Tangent
7639.03	45.00	35.80	7428.47	481.23	347.09	505.48	593.34	Begin 10.00°/100' Build & Turn
8190.16	90.74	1.08	7636.00	951.60	476.40	984.09	1087.97	Begin 90.74° Lateral
15578.19	90.74	1.08	7540.00	8337.70	615.60	8360.40	8475.38	PBHL







The customer should only rely on this document after independently verifying all paths, targets, coordinates, lease and hard lines represented.
Any decisions made or wells drilled utilizing this or any other information supplied by MS Energy are at the sole risk and responsibility of the customer. MS Energy is not responsible for the accuracy of this schematic or the information contained herein

XTO Energy

Eddy County, New Mexico (NAD 27)
Bubbles 22 15 Federal
8H

Wellbore #1

Plan: Design #2

Standard Planning Report

19 September, 2016

MS Energy Services®
WWW.MSENERGYSERVICES.COM

Database:	Conroe Server	**Local Co-ordinate Reference:**	Well 8H
Company:	XTO Energy	**TVD Reference:**	Rig @ 3338.00usft (Noram 25)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	Rig @ 3338.00usft (Noram 25)
Site:	Bubbles 22 15 Federal	**North Reference:**	Grid
Well:	8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Project Eddy County, New Mexico (NAD 27)

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Well 8H

Well Position	**+N/-S**	598,220.40 usft	**Northing:**	598,220.40 usft	**Latitude:**	32° 38' 38.544 N
	+E/-W	616,463.10 usft	**Easting:**	616,463.10 usft	**Longitude:**	103° 57' 17.900 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,313.00 usft

Wellbore Wellbore #1

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	BGGM2016	10/10/2016	7.27	60.42	48,311

Design Design #2

Audit Notes:

Version:	**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00

Vertical Section:

Depth From (TVD) (usft)	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
0.00	0.00	0.00	4.22

Plan Survey Tool Program **Date** 9/16/2016

	Depth From (usft)	**Depth To (usft)**	**Survey (Wellbore)**	**Tool Name**	**Remarks**
1	0.00	15,577.87	Design #2 (Wellbore #1)	MWD OWSG MWD - Standard	

Plan Sections

Measured Depth (usft)	**Inclination (°)**	**Azimuth (°)**	**Vertical Depth (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Dogleg Rate (°/100usft)**	**Build Rate (°/100usft)**	**Turn Rate (°/100usft)**	**TFO (°)**	**Target**
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,496.10	0.00	0.00	6,496.10	0.00	0.00	0.00	0.00	0.00	0.00	
7,138.96	45.00	35.80	7,074.88	194.44	140.24	7.00	7.00	0.00	35.80	
7,639.03	45.00	35.80	7,428.47	481.23	347.09	0.00	0.00	0.00	0.00	
8,190.16	90.74	1.08	7,636.00	951.60	476.40	10.00	8.30	-6.30	-43.97	FTP - Bubbles 22-
15,578.19	90.74	1.08	7,540.00	8,337.70	615.60	0.00	0.00	0.00	0.00	PBHL - Bubbles 22

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Site:	Bubbles 22 15 Federal	**North Reference:**	Grid
Well:	8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
248.00	0.00	0.00	248.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
503.00	0.00	0.00	503.00	0.00	0.00	0.00	0.00	0.00	0.00
Top Salt									
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,503.00	0.00	0.00	1,503.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Salt									
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,688.00	0.00	0.00	1,688.00	0.00	0.00	0.00	0.00	0.00	0.00
Yates									
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,318.00	0.00	0.00	2,318.00	0.00	0.00	0.00	0.00	0.00	0.00
Capitan									
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,013.00	0.00	0.00	4,013.00	0.00	0.00	0.00	0.00	0.00	0.00
Delaware									

Database:	Conroe Server	**Local Co-ordinate Reference:**	Well 8H
Company:	XTO Energy	**TVD Reference:**	Rig @ 3338.00usft (Noram 25)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	Rig @ 3338.00usft (Noram 25)
Site:	Bubbles 22 15 Federal	**North Reference:**	Grid
Well:	8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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)
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,613.00	0.00	0.00	4,613.00	0.00	0.00	0.00	0.00	0.00	0.00
Brushy Canyon									
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,120.00	0.00	0.00	6,120.00	0.00	0.00	0.00	0.00	0.00	0.00
Bone Spring									
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,236.00	0.00	0.00	6,236.00	0.00	0.00	0.00	0.00	0.00	0.00
Avalon Sand									
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,496.10	0.00	0.00	6,496.10	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 7.00°/100' Build									
6,500.00	0.27	35.80	6,500.00	0.01	0.01	0.01	7.00	7.00	0.00
6,550.00	3.77	35.80	6,549.96	1.44	1.04	1.51	7.00	7.00	0.00
6,600.00	7.27	35.80	6,599.72	5.34	3.85	5.61	7.00	7.00	0.00
6,650.00	10.77	35.80	6,649.09	11.70	8.44	12.29	7.00	7.00	0.00
6,700.00	14.27	35.80	6,697.90	20.49	14.78	21.52	7.00	7.00	0.00
6,750.00	17.77	35.80	6,745.95	31.68	22.85	33.28	7.00	7.00	0.00
6,800.00	21.27	35.80	6,793.07	45.23	32.63	47.51	7.00	7.00	0.00
6,850.00	24.77	35.80	6,839.08	61.09	44.06	64.17	7.00	7.00	0.00
6,900.00	28.27	35.80	6,883.81	79.20	57.12	83.19	7.00	7.00	0.00
6,950.00	31.77	35.80	6,927.09	99.48	71.75	104.50	7.00	7.00	0.00
7,000.00	35.27	35.80	6,968.77	121.88	87.91	128.02	7.00	7.00	0.00
7,050.00	38.77	35.80	7,008.68	146.29	105.51	153.66	7.00	7.00	0.00
7,100.00	42.27	35.80	7,046.68	172.64	124.52	181.34	7.00	7.00	0.00
7,138.96	45.00	35.80	7,074.88	194.44	140.24	204.24	7.00	7.00	0.00
Begin 45.00° Tangent									
7,200.00	45.00	35.80	7,118.04	229.45	165.49	241.01	0.00	0.00	0.00
7,300.00	45.00	35.80	7,188.75	286.80	206.86	301.25	0.00	0.00	0.00
7,400.00	45.00	35.80	7,259.46	344.15	248.22	361.49	0.00	0.00	0.00
7,500.00	45.00	35.80	7,330.17	401.50	289.59	421.73	0.00	0.00	0.00
7,600.00	45.00	35.80	7,400.88	458.85	330.95	481.97	0.00	0.00	0.00
7,639.03	45.00	35.80	7,428.47	481.23	347.09	505.48	0.00	0.00	0.00

Database:	Conroe Server	**Local Co-ordinate Reference:**	Well 8H
Company:	XTO Energy	**TVD Reference:**	Rig @ 3338.00usft (Noram 25)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	Rig @ 3338.00usft (Noram 25)
Site:	Bubbles 22 15 Federal	**North Reference:**	Grid
Well:	8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

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)
Begin 10.00°/100' Build & Turn									
7,650.00	45.80	34.74	7,436.18	487.61	351.60	512.17	10.00	7.24	-9.69
7,700.00	49.53	30.24	7,469.86	518.79	371.41	544.72	10.00	7.47	-9.00
7,750.00	53.42	26.22	7,501.00	553.25	389.87	580.45	10.00	7.78	-8.03
7,800.00	57.43	22.60	7,529.38	590.73	406.84	619.09	10.00	8.02	-7.25
7,850.00	61.54	19.29	7,554.76	630.96	422.21	660.33	10.00	8.22	-6.62
7,900.00	65.72	16.23	7,576.97	673.61	435.84	703.87	10.00	8.36	-6.12
7,909.47	66.52	15.67	7,580.80	681.93	438.22	712.35	10.00	8.44	-5.87
First Bone Spring Sand									
7,950.00	69.96	13.36	7,595.83	718.37	447.65	749.38	10.00	8.49	-5.69
8,000.00	74.24	10.65	7,611.19	764.90	457.53	796.51	10.00	8.57	-5.43
8,050.00	78.56	8.05	7,622.94	812.84	465.41	844.90	10.00	8.63	-5.20
8,060.55	79.47	7.51	7,624.95	823.09	466.81	855.23	10.00	8.66	-5.09
Objective/Target									
8,100.00	82.90	5.53	7,631.00	861.82	471.23	894.18	10.00	8.68	-5.03
8,150.00	87.25	3.05	7,635.30	911.48	474.95	943.98	10.00	8.70	-4.95
8,190.16	90.74	1.08	7,636.00	951.60	476.40	984.09	10.00	8.71	-4.91
Begin 90.74° Lateral									
8,200.00	90.74	1.08	7,635.87	961.44	476.59	993.92	0.00	0.00	0.00
8,300.00	90.74	1.08	7,634.57	1,061.41	478.47	1,093.76	0.00	0.00	0.00
8,400.00	90.74	1.08	7,633.27	1,161.39	480.35	1,193.60	0.00	0.00	0.00
8,500.00	90.74	1.08	7,631.97	1,261.36	482.24	1,293.44	0.00	0.00	0.00
8,600.00	90.74	1.08	7,630.67	1,361.33	484.12	1,393.28	0.00	0.00	0.00
8,700.00	90.74	1.08	7,629.38	1,461.31	486.01	1,493.13	0.00	0.00	0.00
8,800.00	90.74	1.08	7,628.08	1,561.28	487.89	1,592.97	0.00	0.00	0.00
8,900.00	90.74	1.08	7,626.78	1,661.26	489.77	1,692.81	0.00	0.00	0.00
9,000.00	90.74	1.08	7,625.48	1,761.23	491.66	1,792.65	0.00	0.00	0.00
9,100.00	90.74	1.08	7,624.18	1,861.20	493.54	1,892.49	0.00	0.00	0.00
9,200.00	90.74	1.08	7,622.88	1,961.18	495.43	1,992.33	0.00	0.00	0.00
9,300.00	90.74	1.08	7,621.58	2,061.15	497.31	2,092.17	0.00	0.00	0.00
9,400.00	90.74	1.08	7,620.28	2,161.12	499.19	2,192.01	0.00	0.00	0.00
9,500.00	90.74	1.08	7,618.98	2,261.10	501.08	2,291.86	0.00	0.00	0.00
9,600.00	90.74	1.08	7,617.68	2,361.07	502.96	2,391.70	0.00	0.00	0.00
9,700.00	90.74	1.08	7,616.38	2,461.05	504.85	2,491.54	0.00	0.00	0.00
9,800.00	90.74	1.08	7,615.08	2,561.02	506.73	2,591.38	0.00	0.00	0.00
9,900.00	90.74	1.08	7,613.78	2,660.99	508.62	2,691.22	0.00	0.00	0.00
10,000.00	90.74	1.08	7,612.48	2,760.97	510.50	2,791.06	0.00	0.00	0.00
10,100.00	90.74	1.08	7,611.18	2,860.94	512.38	2,890.90	0.00	0.00	0.00
10,200.00	90.74	1.08	7,609.88	2,960.92	514.27	2,990.74	0.00	0.00	0.00
10,300.00	90.74	1.08	7,608.58	3,060.89	516.15	3,090.58	0.00	0.00	0.00
10,400.00	90.74	1.08	7,607.29	3,160.86	518.04	3,190.43	0.00	0.00	0.00
10,500.00	90.74	1.08	7,605.99	3,260.84	519.92	3,290.27	0.00	0.00	0.00
10,600.00	90.74	1.08	7,604.69	3,360.81	521.80	3,390.11	0.00	0.00	0.00
10,700.00	90.74	1.08	7,603.39	3,460.78	523.69	3,489.95	0.00	0.00	0.00
10,800.00	90.74	1.08	7,602.09	3,560.76	525.57	3,589.79	0.00	0.00	0.00
10,900.00	90.74	1.08	7,600.79	3,660.73	527.46	3,689.63	0.00	0.00	0.00
11,000.00	90.74	1.08	7,599.49	3,760.71	529.34	3,789.47	0.00	0.00	0.00
11,100.00	90.74	1.08	7,598.19	3,860.68	531.23	3,889.31	0.00	0.00	0.00
11,200.00	90.74	1.08	7,596.89	3,960.65	533.11	3,989.16	0.00	0.00	0.00
11,300.00	90.74	1.08	7,595.59	4,060.63	534.99	4,089.00	0.00	0.00	0.00
11,400.00	90.74	1.08	7,594.29	4,160.60	536.88	4,188.84	0.00	0.00	0.00
11,500.00	90.74	1.08	7,592.99	4,260.57	538.76	4,288.68	0.00	0.00	0.00
11,600.00	90.74	1.08	7,591.69	4,360.55	540.65	4,388.52	0.00	0.00	0.00

Database:	Conroe Server	**Local Co-ordinate Reference:**	Well 8H
Company:	XTO Energy	**TVD Reference:**	Rig @ 3338.00usft (Noram 25)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	Rig @ 3338.00usft (Noram 25)
Site:	Bubbles 22 15 Federal	**North Reference:**	Grid
Well:	8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,700.00	90.74	1.08	7,590.39	4,460.52	542.53	4,488.36	0.00	0.00	0.00
11,800.00	90.74	1.08	7,589.09	4,560.50	544.41	4,588.20	0.00	0.00	0.00
11,900.00	90.74	1.08	7,587.79	4,660.47	546.30	4,688.04	0.00	0.00	0.00
12,000.00	90.74	1.08	7,586.50	4,760.44	548.18	4,787.88	0.00	0.00	0.00
12,100.00	90.74	1.08	7,585.20	4,860.42	550.07	4,887.73	0.00	0.00	0.00
12,200.00	90.74	1.08	7,583.90	4,960.39	551.95	4,987.57	0.00	0.00	0.00
12,300.00	90.74	1.08	7,582.60	5,060.37	553.83	5,087.41	0.00	0.00	0.00
12,400.00	90.74	1.08	7,581.30	5,160.34	555.72	5,187.25	0.00	0.00	0.00
12,500.00	90.74	1.08	7,580.00	5,260.31	557.60	5,287.09	0.00	0.00	0.00
12,600.00	90.74	1.08	7,578.70	5,360.29	559.49	5,386.93	0.00	0.00	0.00
12,700.00	90.74	1.08	7,577.40	5,460.26	561.37	5,486.77	0.00	0.00	0.00
12,800.00	90.74	1.08	7,576.10	5,560.23	563.26	5,586.61	0.00	0.00	0.00
12,900.00	90.74	1.08	7,574.80	5,660.21	565.14	5,686.46	0.00	0.00	0.00
13,000.00	90.74	1.08	7,573.50	5,760.18	567.02	5,786.30	0.00	0.00	0.00
13,100.00	90.74	1.08	7,572.20	5,860.16	568.91	5,886.14	0.00	0.00	0.00
13,200.00	90.74	1.08	7,570.90	5,960.13	570.79	5,985.98	0.00	0.00	0.00
13,300.00	90.74	1.08	7,569.60	6,060.10	572.68	6,085.82	0.00	0.00	0.00
13,400.00	90.74	1.08	7,568.30	6,160.08	574.56	6,185.66	0.00	0.00	0.00
13,500.00	90.74	1.08	7,567.00	6,260.05	576.44	6,285.50	0.00	0.00	0.00
13,600.00	90.74	1.08	7,565.70	6,360.02	578.33	6,385.34	0.00	0.00	0.00
13,700.00	90.74	1.08	7,564.41	6,460.00	580.21	6,485.18	0.00	0.00	0.00
13,800.00	90.74	1.08	7,563.11	6,559.97	582.10	6,585.03	0.00	0.00	0.00
13,900.00	90.74	1.08	7,561.81	6,659.95	583.98	6,684.87	0.00	0.00	0.00
14,000.00	90.74	1.08	7,560.51	6,759.92	585.86	6,784.71	0.00	0.00	0.00
14,100.00	90.74	1.08	7,559.21	6,859.89	587.75	6,884.55	0.00	0.00	0.00
14,200.00	90.74	1.08	7,557.91	6,959.87	589.63	6,984.39	0.00	0.00	0.00
14,300.00	90.74	1.08	7,556.61	7,059.84	591.52	7,084.23	0.00	0.00	0.00
14,400.00	90.74	1.08	7,555.31	7,159.82	593.40	7,184.07	0.00	0.00	0.00
14,500.00	90.74	1.08	7,554.01	7,259.79	595.29	7,283.91	0.00	0.00	0.00
14,600.00	90.74	1.08	7,552.71	7,359.76	597.17	7,383.76	0.00	0.00	0.00
14,700.00	90.74	1.08	7,551.41	7,459.74	599.05	7,483.60	0.00	0.00	0.00
14,800.00	90.74	1.08	7,550.11	7,559.71	600.94	7,583.44	0.00	0.00	0.00
14,900.00	90.74	1.08	7,548.81	7,659.68	602.82	7,683.28	0.00	0.00	0.00
15,000.00	90.74	1.08	7,547.51	7,759.66	604.71	7,783.12	0.00	0.00	0.00
15,100.00	90.74	1.08	7,546.21	7,859.63	606.59	7,882.96	0.00	0.00	0.00
15,200.00	90.74	1.08	7,544.91	7,959.61	608.47	7,982.80	0.00	0.00	0.00
15,300.00	90.74	1.08	7,543.62	8,059.58	610.36	8,082.64	0.00	0.00	0.00
15,400.00	90.74	1.08	7,542.32	8,159.55	612.24	8,182.48	0.00	0.00	0.00
15,500.00	90.74	1.08	7,541.02	8,259.53	614.13	8,282.33	0.00	0.00	0.00
15,578.19	90.74	1.08	7,540.00	8,337.70	615.60	8,360.40	0.00	0.00	0.00
PBHL									

Database:	Conroe Server	**Local Co-ordinate Reference:**	Well 8H
Company:	XTO Energy	**TVD Reference:**	Rig @ 3338.00usft (Noram 25)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	Rig @ 3338.00usft (Noram 25)
Site:	Bubbles 22 15 Federal	**North Reference:**	Grid
Well:	8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Design Targets

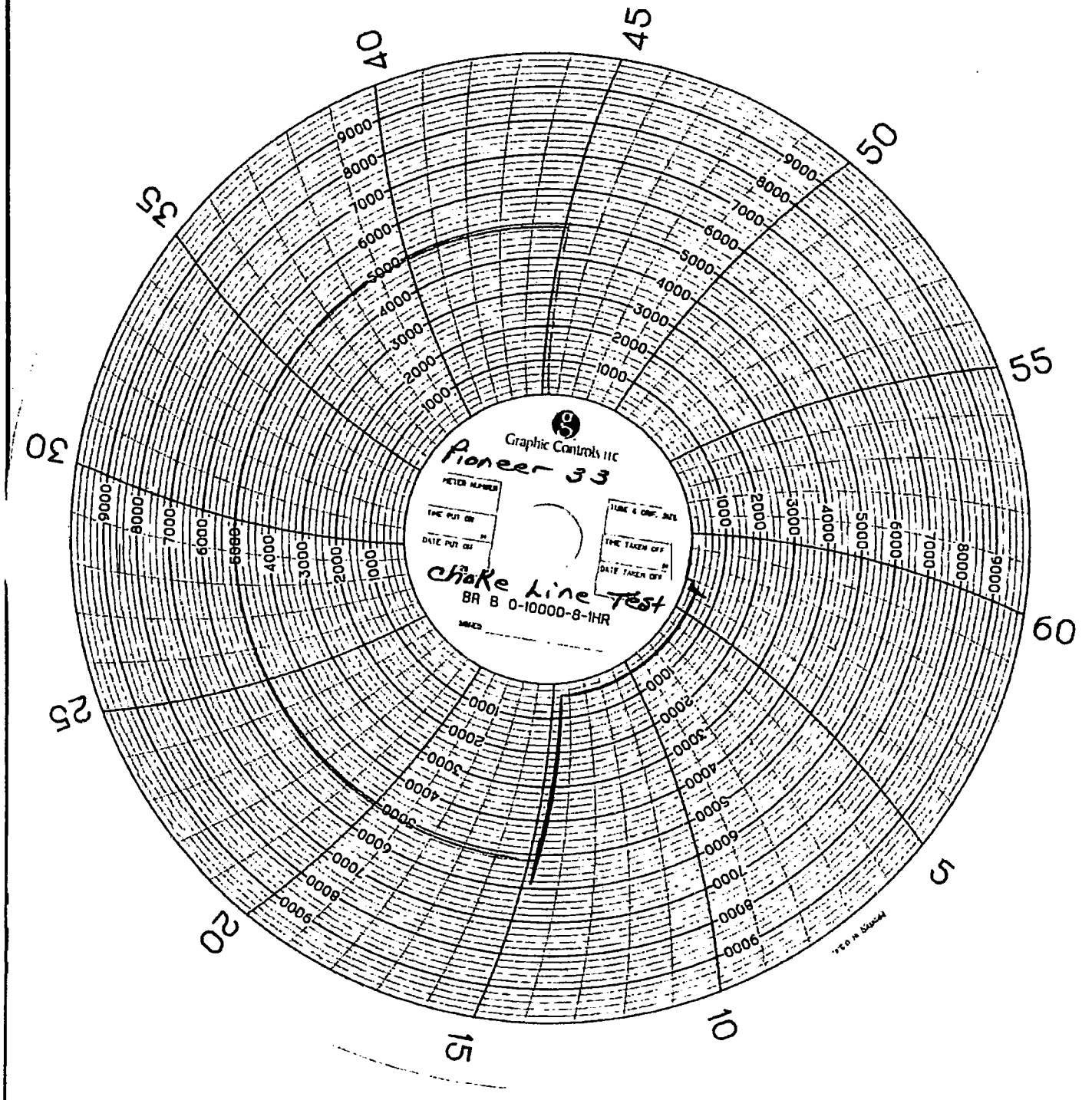
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL - Bubbles 22-1 - plan hits target center - Point	0.00	0.00	7,540.00	8,337.70	615.60	606,558.10	617,078.70	32° 40' 1.027 N	103° 57' 10.351 W
LTP - Bubbles 22-15 - plan misses target center by 0.05usft at 15448.16usft MD (7541.69 TVD, 8207.70 N, 613.15 E) - Point	0.00	0.00	7,541.69	8,207.70	613.10	606,428.10	617,076.20	32° 39' 59.741 N	103° 57' 10.385 W
FTP - Bubbles 22-15 - plan hits target center - Point	0.00	0.00	7,636.00	951.60	476.40	599,172.00	616,939.50	32° 38' 47.943 N	103° 57' 12.288 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
248.00	248.00	Rustler		-0.74	4.22
503.00	503.00	Top Salt		-0.74	4.22
1,503.00	1,503.00	Base Salt		-0.74	4.22
1,688.00	1,688.00	Yates		-0.74	4.22
2,318.00	2,318.00	Capitan		-0.74	4.22
4,013.00	4,013.00	Delaware		-0.74	4.22
4,613.00	4,613.00	Brushy Canyon		-0.74	4.22
6,120.00	6,120.00	Bone Spring		-0.74	4.22
6,236.00	6,236.00	Avalon Sand		-0.74	4.22
7,909.47	7,580.80	First Bone Spring Sand		-0.74	4.22
8,060.55	7,624.95	Objective/Target		-0.74	4.22

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
6,496.10	6,496.10	0.00	0.00	KOP, 7.00°/100' Build
7,138.96	7,074.88	194.44	140.24	Begin 45.00° Tangent
7,639.03	7,428.47	481.23	347.09	Begin 10.00°/100' Build & Turn
8,190.16	7,636.00	951.60	476.40	Begin 90.74° Lateral
15,578.19	7,540.00	8,337.70	615.60	PBHL


Graphic Controls LLC
Pioneer 33
METER NUMBER
TIME PUT ON
DATE PUT ON
TIME TAKEN OFF
DATE TAKEN OFF
Choke Line Test
BR B 0-10000-8-1HR
MADE
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7000
8000
9000

GATES E & S NORTH AMERICA, INC
DU-TEX
134 44TH STREET
CORPUS CHRISTI, TEXAS 78405

PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: crpe&s@gates.com
WEB: www.gates.com

GRADE D PRESSURE TEST CERTIFICATE

Customer :	AUSTIN DISTRIBUTING	Test Date:	6/8/2014
Customer Ref. :	PENDING	Hose Serial No.:	D-060814-1
Invoice No. :	201709	Created By:	NORMA

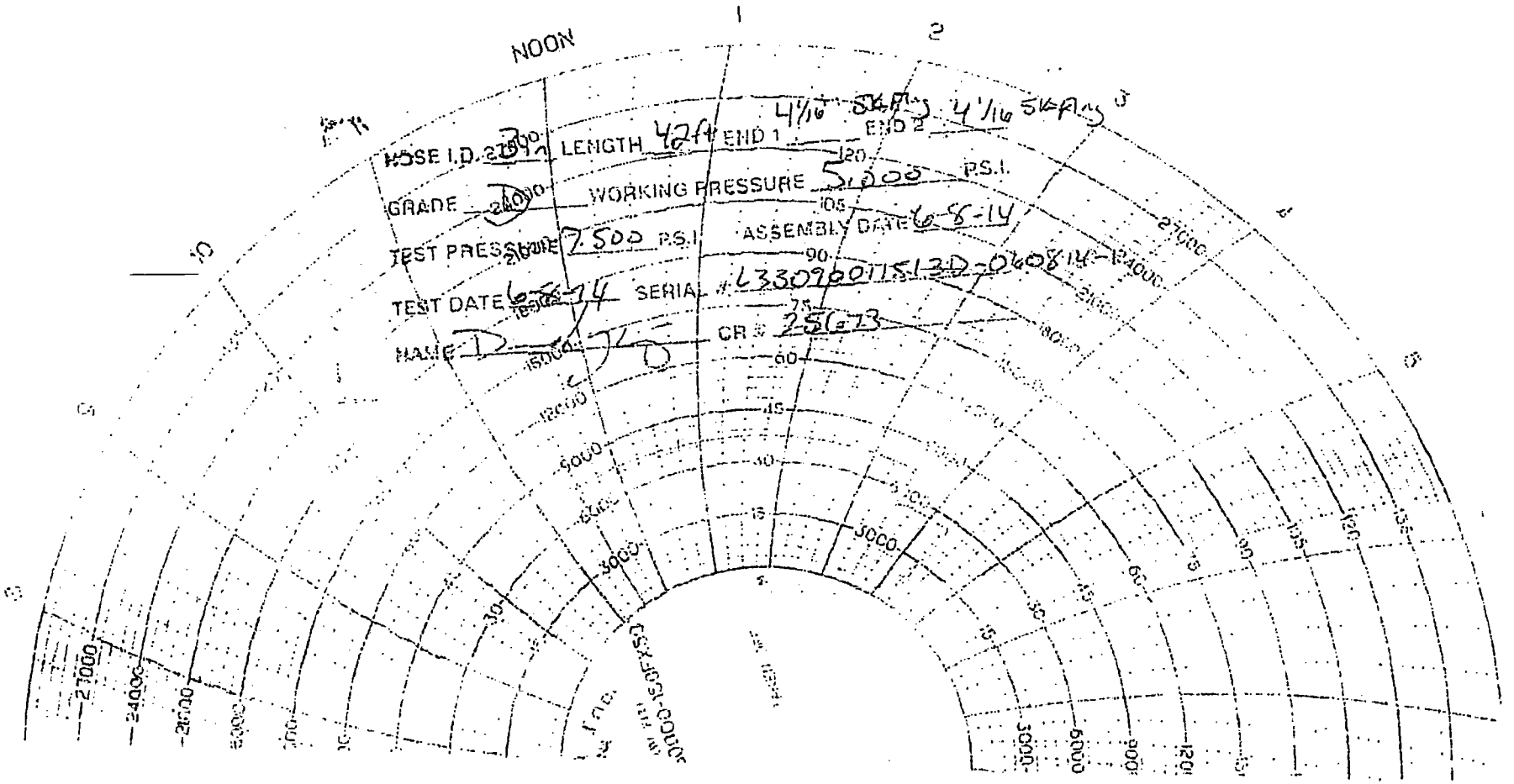
Product Description:	FD3.042.0R41/16.5KFLGE/E LE

End Fitting 1 :	4 1/16 in.5K FLG	End Fitting 2 :	4 1/16 in.5K FLG
Gates Part No. :	4774-6001	Assembly Code :	L330900111513D-060814-1
Working Pressure :	5,000 PSI	Test Pressure :	7,500 PSI

Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 7,500 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

Quality:	QUALITY	Technical Supervisor :	PRODUCTION
Date :	6/8/2014	Date :	6/8/2014
Signature :		Signature :	

Form PTC - 01 Rev.0 2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TEST PRESSURE 7,500 P.S.I.
ASSEMBLY DATE 6-8-14
TEST DATE 6-8-14
SERIAL # 633096011513D-060814
NAME
CR # 25673

DRILLING PLAN: BLM COMPLIANCE
(Supplement to BLM 3160-3)

XTO Energy Inc.
Bubbles 22 15 Federal 8H
Projected TD: 15578' MD / 7636' TVD
SHL: 2020' FSL & 1305' FEL, SECTION 22, T19S, R30E
1st Take Point: 2310 FNL & 825' FEL, SECTION 22-T19S-R30E
2nd Take Point: 330 FNL & 663' FEL, SECTION 15-T19S-R30E
BHL: 200' FNL & 660' FEL, SECTION 15, T19S, R30E
Eddy County, NM

1. **GEOLOGIC NAME OF SURFACE FORMATION:**
   A. Quaternary

2. **ESTIMATED TOPS OF GEOLOGICAL MARKERS & DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:**

Formation	Well Depth (TVD)	Water / Oil / Gas
Rustler	248'	Water
Top of Salt	503'	Water
Base of Salt	1503'	Water
Yates	1688'	Water/Oil/Gas
Capitan	2318'	Water/Oil/Gas
Delaware	4013'	Water/Oil/Gas
Brushy Canyon	4613'	Water/Oil/Gas
Bone Spring	6120'	Water/Oil/Gas
1st Bone Spring	7590'	Water/Oil/Gas
Target/Land Curve	7636'	Water/Oil/Gas
2nd Bone Spring	7762'	Water/Oil/Gas

*** Hydrocarbons @ Brushy Canyon
*** Groundwater depth 180'.

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 18-5/8" casing at 450' and circulating cement back to surface. The salt will be isolated by setting 13-3/8" casing at 1500' and circulating cement to surface. The Capitan Reef will be isolated by setting 9-5/8" casing at 4050' and circulating cement to surface in a 2-stage program. An 8-3/4" curve and 8-1/2" lateral hole will be drilled to MD/TD and 5-1/2" casing will be set at TD and cemented to surface.

3. **CASING PROGRAM:**

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
26"	0' – 450'	18-5/8"	87.5#	STC	H-40	New	7.92	3.06	14.2
17-1/2"	0' – 1500'	13-3/8"	54.5#	BTC	J-55	New	3.43	2.39	10.43
12-1/4"	0' – 4050'	9-5/8"	36#	LTC	J-55	New	3.25	1.86	3.11

8-3/4" x 8-1/2"	0' – 15614'	5-1/2"	17#	BTC	P-110	New	1.12	2.05	2.98

- XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.
- 5-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35

WELLHEAD:

Temporary Wellhead

- 18-5/8" SOW x 21-1/4" 2M top flange

Permanent Wellhead – GE RSH Multibowl System

A. Starting Head: 13-5/8" 5M top flange x 13-3/8" SOW bottom
B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange
- Wellhead will be installed by manufacturer's representatives.
- Manufacturer will monitor welding process to ensure appropriate temperature of seal.
- Manufacturer will witness installation of test plug for initial test.
- Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.

4. CEMENT PROGRAM:

A. **Surface Casing:** 18-5/8", 87.5#, NEW H-40, STC casing to be set at ± 450'.

Tail: 20 bbls FW, then 1197 sx HalCem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft^3/sk, 6.39 gal/sx wtr)
***All volumes 100% excess in open hole. Cement to surface.

B. **1st Intermediate Casing:** 13-3/8", 54.5#, NEW J-55, BTC casing to be set at ± 1500'.

Lead: 20 bbls FW, then 739 sx EconoCem-HLC + 5% salt + 5 lbm/sk Kol-Seal (mixed at 12.9 ppg, 1.88 ft^3/sk, 9.61 gal/sx wtr)

Tail: 522 sx HalCem-C (mixed at 14.8 ppg, 1.33 ft^3/sk, 6.34 gal/sx wtr)
***All volumes 100% excess in open hole. Cement to surface.

C. **2nd Intermediate Casing:** 9-5/8", 36#, NEW J-55, LTC casing to be set at ± 4050'.

1st Stage:

Lead: 20 bbls FW, then 483 sx EconoCem-HLC + 5% salt + 5 lbm/sk Kol-Seal (mixed at 12.9 ppg, 1.88 ft^3/sk, 9.61 gal/sx wtr)

Tail: 235 sx HalCem-C (mixed at 14.8 ppg, 1.33 ft^3/sk, 6.34 gal/sx wtr)
***All volumes 100% excess in open hole. Cement to DV Tool/ECP (2100').

2nd Stage:

Lead: 20 bbls FW, then 533 sx EconoCem-HLC + 5% salt + 5 lbm/sk Kol-Seal (mixed at 12.9 ppg, 1.88 ft^3/sk, 9.61 gal/sx wtr)

Tail: 235 sx HalCem-C (mixed at 14.8 ppg, 1.33 ft^3/sk, 6.34 gal/sx wtr)
***All volumes 100% excess in open hole. Cement to Surface.

D. **Production Casing**: 5-1/2", 17#, NEW P-110, BTC casing to be set at ± 15578'. Casing will be cemented to surface.

Lead: 20 bbls FW, then 872 sx Tuned Light + 0.5 lbm/sk CFR-3 + 1.5 lbm/sk salt + 0.1% HR601 (mixed at 10.5 ppg, 2.69 ft^3/sk, 12.26 gal/sx wtr)

Tail: 1581 sx VersaCem PBHS2 + 0.5% LAP-1 + 0.25 lbm/sk D-air 5000 + 0.2% HR 601 + 0.4% CFR-3 + 1 pps Salt (mixed at 13.2 ppg, 1.61 ft^3/sk, 8.38 gal/sx wtr)
***All volumes 30% excess in open hole. Cement to surface.

5. PRESSURE CONTROL EQUIPMENT:

The blow out preventer equipment (BOP) for the temporary wellhead consists of a 21-1/4" minimum 2M Hydril. MASP should not exceed 466 psi. 2M diagram attached.

The blow out preventer equipment (BOP) for the permanent wellhead consists of a 13-5/8" minimum 3M Hydril and a 13-5/8" minimum 3M Double Ram BOP. MASP should not exceed 1973 psi.

All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nippling up on the 13-5/8" 3M bradenhead and flange, the BOP test will be limited to 3000psi. All BOP tests will include a low pressure test as per BLM regulations. The 3M BOP diagram is attached. Blind rams will be function tested each trip, pipe rams will be function tested each day.

A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. Attached is an example of a certification and pressure test chart. The manufacturer does not require anchors.

6. PROPOSED MUD CIRCULATION SYSTEM:

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' to 450'	26"	FW/Native	8.5-8.8	35-40	NC
450' to 1500'	17-1/2"	Brine	9.8 10.2	35-40	NC
1500' to 4050'	12-1/4"	FW / Cut Brine / Poly-Sweeps	8.6-9.6	29-32	NC - 20
4050' to 15578'	8-3/4" x 8-1/2"	FW / Cut Brine / Poly-Sweeps	8.6-9.6	29-32	NC - 20

The necessary mud products for weight addition and fluid loss control will be on location at all times.

Spud with fresh water/native mud. Drill out from under 18-5/8" surface casing with brine solution. A 9.8ppg-10.2ppg brine mud will be used while drilling through the salt formation. Pump speed will be recorded on a daily drilling report after mudding up. A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hours to determine: density,

viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system.

7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

A. A Kelly cock will be in the drill string at all times.
B. A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
C. H2S monitors will be on location when drilling below the 18-5/8" casing.

8. LOGGING, CORING AND TESTING PROGRAM:

Mud Logger: Mud Logging Unit (2 man) on below intermediate casing.

Open hole logging to include Density/Neutron/PE/Dual Laterlog/Spectral Gamma from kick-off point to intermediate casing shoe.

9. ABNORMAL PRESSURES AND TEMPERATURES / POTENTIAL HAZARDS:

None anticipated. BHT of 155 F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

Road and location construction will begin after Santa Fe and BLM have approved the APD. Anticipated spud date will be as soon after Santa Fe and BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 40 days. If production casing is run, an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

APD ID: 10400008477 | **Submission Date:** 11/29/2016

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUBBLES 22 15 FEDERAL | **Well Number:** 8H

Well Type: OIL WELL | **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? NO

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

Bubbles Fed_Road_11-29-2016.pdf

New road type: RESOURCE

Length: 4089 Feet | **Width (ft.):** 30

Max slope (%): 2 | **Max grade (%):** 3

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: The access road will be constructed and maintained as necessary to prevent soil erosion and accommodate all-weather traffic. The road will be crowned and ditched with water turnouts installed as necessary to provide for proper drainage along with access road route.

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: OTHER

Access topsoil source: ONSITE

Access surfacing type description: Surface material will be native caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: Approximately 6 inches of topsoil (root zone) will be stripped from the proposed access road prior to any further construction activity. The topsoil that was stripped will be spread along the edge of the road and within the ditch. The topsoil will be seeded with the proper seed mix designated by the BLM.
Access other construction information: Construction, reclamation, and/or routine maintenance will not be conducted during periods when the soil conditions for construction could lead to impacts to the surrounding environment, or when watershed damage is likely to occur as a result of these activities.
Access miscellaneous information:

Number of access turnouts: 1 **Access turnout map:** Bubbles Fed_Turn_11-29-2016.pdf

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: The access road and associated drainage structures will be constructed and maintained in accordance with road guidelines contained in the joint BLM/USFS publication: Surface Operating Standards for Oil and Gas Exploration and Development, The Gold Book, Fourth Edition and/or BLM Manual Section 9113 concerning road construction standards on projects subject to federal jurisdiction.
Road Drainage Control Structures (DCS) description: No drainage control structures were identified at onsite. Drainage control structures will be applied for as-needed and be in accordance with road guidelines contained in the joint BLM/USFS publication: Surface Operating Standards for Oil and Gas Exploration and Development, The Gold Book, Fourth Edition and/or BLM Manual Section 9113 concerning road construction standards on projects subject to federal jurisdiction.
Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

Bubbles Fed_1 Mile_11-29-2016.pdf

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: B. Production Facilities. A separate 600' x 600' pad was staked with the BLM for construction and use as a Central Tank Battery (Mojo Jojo Central Tank Battery). This pad is located in the Southwest quarter of Section 22-T19S-R30E NMPM, Eddy County, New Mexico. A plat of the proposed facility area is attached. Only the area necessary to maintain facilities will be disturbed. 600'x600' location is anticipated for full area development and includes plans for 24 wells in the area. C. Facility Equipment. In the event that all 24 wells are drilled, the facility pad is expected to contain: 8-1000bbl oil tanks, 8-1000bbl water tanks, 2-LACT meters, 1-flare scrubber, 1-gas scrubber, 1-compressor pad, 1-dehy pad and 2-heater treaters as well as additional equipment as needed based on the conditions and

stipulations set-forth for off-lease measurement, surface commingling and production volumes. This equipment list and the development of these facilities are variable and subject to the number of wells drilled, production results based on well tests and geologic and market uncertainties. In the event that the planned 24 wells are not drilled, excess facility pad will be reduced in size and reclaimed with prior submission of appropriate 3160-5 sundry notices to the Bureau of Land Management. D. Oil Flowlines. In the event the wells are found productive, 4" composite spoolable HDE poly pipe flowlines with a maximum pressure rating of 125psi (anticipated pressure: 80psi) will be laid on the surface within proposed lease road corridors from the well to the Mojo Jojo Central Tank Battery where the oil, gas, and water will be metered and appropriately separated. Oil will be hauled from the location by truck following existing and proposed lease roads. The total distance of proposed oil flowline is: 2271.8' or 0.43 miles following proposed lease road surface corridors. A plat of the proposed flowline is attached. E. Gas Pipeline. A gas pipeline is staked and will be installed from the proposed Mojo Jojo Central Tank Battery facility and will be buried alongside an abandoned railroad track and off-road trail going South. All compressor and dehydration facilities for gas sales purchasing will be located on XTO Energy, Incorporated's Mojo Jojo Tank Battery facility pad. F. Disposal Facilities. Produced water will be hauled from location to a commercial disposal facility as needed. G. Flare. The flare stack will be 50'x50', located at the Southeastern corner of the proposed Mojo JoJo Central Tank Battery facility pad and will be sized for 10 to 15mmscf/d with 150' of distance between all facility equipment, road and well pad locations for safety purposes. H. Aboveground Structures. All permanent (on site six months or longer) aboveground structures constructed or installed on location and not subject to safety requirements will be painted earth-tone colors such as 'desert tan' that reduce the visual impacts of the built environment. I. Containment Berms. Containment berms will be constructed completely around any production facilities designed to hold fluids. The containment berms will be constructed of compacted subsoil, be sufficiently impervious, hold 1 ½ times the capacity of the largest tank and away from cut or fill areas. J. Electrical. All electrical poles and lines will be placed within existing and proposed lease roads corridors. The electrical provider is anticipated to be Excel Energy. All electrical lines will be primary 12,740 volt to properly run expected production equipment. Approximately 14,401.7' of electrical will be run from the anticipated tie-in point following existing and proposed road corridors with a request for 30' ROW construction and maintenance buffer; 15' on either side of the electrical centerline. This distance is a maximum approximation and may vary based on the lease road corridors, varying elevations and terrain in the area. A plat of the proposed electrical is attached.

Production Facilities map:

Bubbles Fed_Facility_11-29-2016.pdf

Bubbles Fed_Flow_11-29-2016.pdf

Bubbles Fed_Gas_11-29-2016.pdf

Bubbles Fed_Elec_11-29-2016.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING

Water source type: GW WELL

Describe type:

Source latitude: 32.614117

Source longitude: -104.0171

Source datum: NAD83

Water source permit type: WATER WELL

Source land ownership: FEDERAL

Water source transport method: TRUCKING

Source transportation land ownership: FEDERAL

Water source volume (barrels): 40000

Source volume (acre-feet): 5.155724

Source volume (gal): 1680000

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUBBLES 22 15 FEDERAL **Well Number:** 8H

Water source use type: INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING

Water source type: GW WELL

Describe type:

Source latitude: 32.58578

Source longitude: -104.03414

Source datum: NAD83

Water source permit type: WATER WELL

Source land ownership: FEDERAL

Water source transport method: TRUCKING

Source transportation land ownership: FEDERAL

Water source volume (barrels): 40000

Source volume (acre-feet): 5.155724

Source volume (gal): 1680000

Water source and transportation map:

Bubbles Fed_Road_11-29-2016.pdf

Water source comments: The well will be drilled using a combination of water mud systems as outlined in the Drilling Program. The water will be obtained from a 3rd party vendor and hauled to the location by transport truck using the existing and proposed roads depicted in the attached exhibits. No water well will be drilled on the location. Water for drilling, completion and dust control will be purchased from the following company: Rockhouse Water & Brine Inc 1108 West Pierce St Carlsbad, NM 88220 Water for drilling, completion and dust control will be supplied by Rockhouse Water for sale to XTO Energy, Inc from the following two sources per Rockhouse Water: 1st Well: CP745 Section 12-T20S-R29E Latitude: 32.585782 Longitude: -104.034144 2nd Well: CP742 Section 31-T19S-R30E Latitude: 32.614117 Longitude: -104.017098 Anticipated water usage for drilling includes an estimated 35,000 barrels of water to drill a horizontal well in a combination of fresh water and brine as detailed in the mud program in the drilling plans. These volumes are calculated for ~1.5bbls per foot of hole drilled with 40% excess to accommodate any lost circulation or wash out that may occur. Actual water volumes used during operations will depend on the depth of the well, length of horizontal sections, and the losses that may occur during the operation. Well completion is expected to require approximately 50,000 barrels of fresh water per horizontal well. Actual water volumes used during operations will depend on the depth of the well and length of horizontal sections. After production is established, XTO may complete wells with approximately 50,000 barrels of produced water. If the decision to use produced water is made, the BLM will be notified appropriately, proper permitting will ensue with the New Mexico Oil Conservation division and this surface use plan will be amended as needed. A fresh water frac pond is anticipated after the wells are drilled. The potential location of the frac pond is unknown at this time but will be staked with a BLM representative present in order to make certain all wildlife habitat and hydrological areas are protected with minimal environmental impact, then permitted properly prior to being built. All water source information was provided by the anticipated contract vendor.

New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUBBLES 22 15 FEDERAL **Well Number:** 8H

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Native caliche. Source 1: BLM Pit (35-T19S-R30E) Source 2: BLM Pit (31-T19S-R31E)
Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Cuttings

Amount of waste: 2100 pounds

Waste disposal frequency : One Time Only

Safe containment description: The well will be drilled utilizing a closed-loop mud system. Drill cuttings will be held in roll-off style mud boxes.
Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL
Disposal type description:

Disposal location description: R360 Environmental Solutions 4507 W Carlsbad Hwy, Hobbs, NM 88240 (575) 393-1079

Waste type: SEWAGE

Waste content description: Human Waste

Amount of waste: 250 gallons

Waste disposal frequency : Weekly

Safe containment description: Portable, self-contained toilets will be provided for human waste disposal. Upon completion of drilling and completion activities, or as required, the toilet holding tanks will be pumped and the contents thereof disposed of in an approved sewage disposal facility. All state and local laws and regulations pertaining to the disposal of human and solid waste will be complied with. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: A licensed 3rd party contractor will be used to haul and dispose of human waste.

Waste type: GARBAGE

Waste content description: Garbage, junk and non-flammable waste materials

Amount of waste: 250 pounds

Waste disposal frequency : Weekly

Safe containment description: All garbage, junk and non-flammable waste materials will be contained in a self-contained, portable dumpster or trash cage, to prevent scattering and will be removed and deposited in an approve sanitary landfill. Immediately after drilling all debris and other waste materials on and around the well location not contained in the trash cage will be cleaned up and removed from the location. No potentially adverse materials or substances will be left on the location.
Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL
Disposal type description:

Disposal location description: A licensed 3rd party vendor will be contracted to haul and safely dispose of garbage, junk and non-flammable waste materials.

Waste type: DRILLING

Waste content description: Fluid

Amount of waste: 500 barrels

Waste disposal frequency : One Time Only

Safe containment description: Steel mud pits

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL
Disposal type description:

Disposal location description: R360 Environmental Solutions 4507 W Carlsbad Hwy, Hobbs, NM 88240 (575) 393-1079

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location Cuttings. The well will be drilled utilizing a closed-loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to a New Mexico Oil Conservation Division (NMOCD) approved disposal site. Drilling Fluids. These will be contained in steel mud pits and then taken to a NMOCD approved commercial disposal facility. Produced Fluids. Water produced from the well during completion will be held temporarily in steel tanks and then taken to a NMOCD approved commercial disposal facility. Oil produced during operations will be stored in tanks until sold.

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Bubbles 8H_Maps_11-29-2016.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:** BUBBLES 22 15

Multiple Well Pad Number: 1H

Recontouring attachment:

Bubbles 8H_Int Rec_11-29-2016.pdf

Drainage/Erosion control construction: All compacted areas to be seeded will be ripped to a minimum depth of 18 inches with a minimum furrow spacing of 2 feet, followed by recontouring the surface and then evenly spreading the stockpiled topsoil. Prior to seeding, the seedbed will be scarified to a depth of no less than 4-6 inches.

Drainage/Erosion control reclamation: Erosion features are equal to or less than surrounding area and erosion control is sufficient so that water naturally infiltrates into the soil and gullying, headcutting, slumping, and deep or excessive rills (greater than 3 inches) are not observed.

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUBBLES 22 15 FEDERAL **Well Number:** 8H

Wellpad long term disturbance (acres): 2.65151

Wellpad short term disturbance (acres): 3.82231

Access road long term disturbance (acres): 2.816

Access road short term disturbance (acres): 2.816

Pipeline long term disturbance (acres): 5.497934

Pipeline short term disturbance (acres): 5.497934

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0

Total long term disturbance: 10.965444

Total short term disturbance: 12.136244

Disturbance Comments: Flowline will be run on surface following proposed road corridors to the central tank battery. Pipeline will be buried. 30' request is for ROW for construction. After completion, all disturbed areas will be reclaimed in accordance to reclamation standards set forth in this APD with disturbance occurring only for maintenance or emergency purposes.

Reconstruction method: The original stock piled topsoil will be spread over the areas being reclaimed and the original landform will be restored for all disturbed areas including well pads, production facilities, roads, pipelines, and utility corridors as close as possible to the original topography. The location will then be ripped and seeded.

Topsoil redistribution: The original stock piled topsoil will be spread over the areas being reclaimed and the original landform will be restored for all disturbed areas including well pads, production facilities, roads, pipelines, and utility corridors as close as possible to the original topography. The location will then be ripped and seeded.

Soil treatment: A self-sustaining, vigorous, diverse, native (or otherwise approved) plan community will be established on the site with a density sufficient to control erosion and invasion by non-native plants and to re-establish wildlife habitat or forage production. At a minimum, the established plant community will consist of species included in the seed mix and/or desirable species occurring in the surrounding natural vegetation.

Existing Vegetation at the well pad: Soil area consist of Berino soils. These sois are associated with the Loamy Sand ecological site (R024CX003NM) which typically supports black grama, dropseed, and bluestem grasslands with an even distribution of sand sage, shinnery oak, and mesquite. The current vegetative community consists of shinnery oak, sand sage, mesquite, soapweed yucca, broom snakeweed, and desert grasses and forbs. The project is undulating landscape with small to moderate dunes (1'-15'), approximately 2.83 miles north of Clayton Basin and 1.69 miles west of Nimenim Ridge.

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Soil area consist of Berino soils. These sois are associated with the Loamy Sand ecological site (R024CX003NM) which typically supports black grama, dropseed, and bluestem grasslands with an even distribution of sand sage, shinnery oak, and mesquite. The current vegetative community consists of shinnery oak, sand sage, mesquite, soapweed yucca, broom snakeweed, and desert grasses and forbs. The project is undulating landscape with small to moderate dunes (1'-15'), approximately 2.83 miles north of Clayton Basin and 1.69 miles west of Nimenim Ridge.

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Soil area consist of Berino soils. These sois are associated with the Loamy Sand ecological site (R024CX003NM) which typically supports black grama, dropseed, and bluestem grasslands with an even distribution of sand sage, shinnery oak, and mesquite. The current vegetative community consists of shinnery oak, sand sage, mesquite, soapweed yucca, broom snakeweed, and desert grasses and forbs. The project is undulating landscape with small to moderate dunes (1'-15'), approximately 2.83 miles north of Clayton Basin and 1.69 miles west of Nimenim Ridge.

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: Soil area consist of Berino soils. These sois are associated with the Loamy Sand ecological site (R024CX003NM) which typically supports black grama, dropseed, and bluestem grasslands with an even distribution of sand sage, shinnery oak, and mesquite. The current vegetative community consists of shinnery oak, sand sage, mesquite, soapweed yucca, broom snakeweed, and desert grasses and forbs. The project is undulating landscape with small to moderate dunes (1'-15'), approximately 2.83 miles north of Clayton Basin and 1.69 miles west of Nimenim Ridge.

Existing Vegetation Community at other disturbances attachment:

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUBBLES 22 15 FEDERAL **Well Number:** 8H

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary	
Seed Type	**Pounds/Acre**

Total pounds/Acre:

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Jeff

Last Name: Raines

Phone: (432)620-4349

Email: jeffrey_raines@xtoenergy.com

Seedbed prep: Initial seedbed preparation will consist of recontouring to the appropriate interim or final reclamation standard. All compacted areas to be seeded will be ripped to a minimum depth of 18 inches with a minimum furrow spacing of 2 feet, followed by recontouring the surface and then evenly spreading the stockpiled topsoil. Prior to seeding, the seedbed will be scarified to a depth of no less than 4-6 inches. If the site is to be broadcast seeded, the surface will be left rough enough to trap seed and snow, control erosion, and increase water infiltration.
Seed BMP: If broadcast seeding is to be used and is delayed, final seedbed preparation will consist of contour cultivating to a depth of 4-6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust

and create seed germination micro-sites.

Seed method: Seeding will be conducted no more than two weeks following completion of final seedbed preparation. A certified weed-free seed mix designed by the BLM to meet reclamation standards will be used. If the site is harrowed or dragged, seed will be covered by no more than 0.25 inch of soil.
Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: Weed control for all phases will be through the use of approved pesticides and herbicides according to applicable State, Federal and local laws.
Weed treatment plan attachment:

Monitoring plan description: Monitoring of invasive and noxious weeds will be visual and as-needed. If it is determined additional methods are required to monitor invasive and noxious weeds, appropriate BLM authorities will be contacted with a plan of action for approval prior to implementation.
Monitoring plan attachment:

Success standards: 100% compliance with applicable regulations.

Pit closure description: There will be no reserve pit as each well will be drilled utilizing a closed loop mud system. The closed loop system will meet the NMOCD requirements 19.15.17.
Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: OTHER

Describe: Electrical

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUBBLES 22 15 FEDERAL **Well Number:** 8H

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: XTO ENERGY INCORPORATED

Well Name: BUBBLES 22 15 FEDERAL **Well Number:** 8H

Disturbance type: PIPELINE

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: OTHER

Describe: Facility & Flowline

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Section 12 - Other Information

Right of Way needed? YES **Use APD as ROW?** YES

ROW Type(s): 281001 ROW - ROADS,288100 ROW – O&G Pipeline,288101 ROW – O&G Facility Sites,289001 ROW-O&G Well Pad,FLPMA (Powerline)

ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: Fell 150ft N of P/L running E&W. Moved 20ft N. The only things we have figured out so far is the V-door (East) and Road (SW Corner)

Other SUPO Attachment

Bubbles Fed_Arch_11-29-2016.pdf

Bubbles Fed_Elec_11-29-2016.pdf

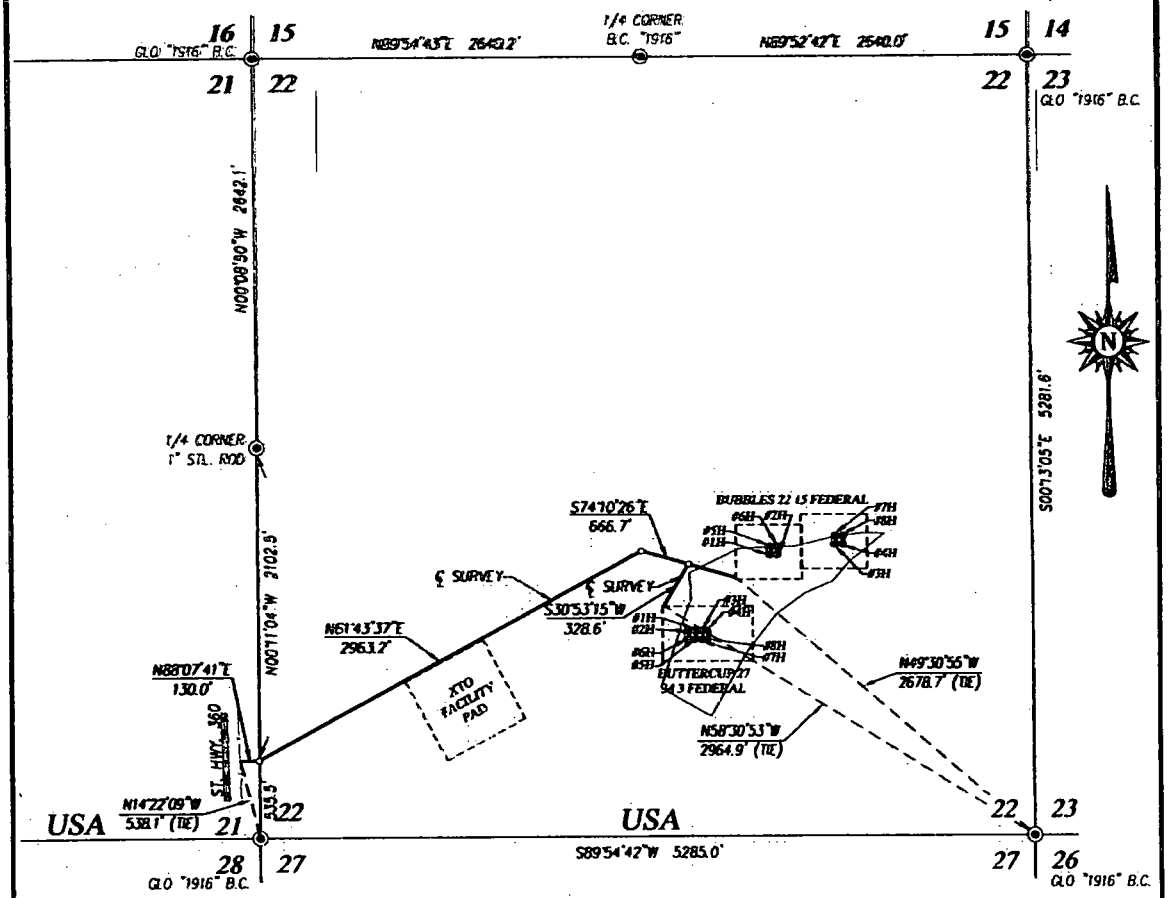
Bubbles Fed_Facility_11-29-2016.pdf

Bubbles Fed_Flow_11-29-2016.pdf

Bubbles Fed_Gas_11-29-2016.pdf

Bubbles Fed_Lse_11-29-2016.pdf

Bubbles Fed_Agree Statement_02-11-2017.pdf



DESCRIPTION

SURVEY OF A STRIP OF LAND 30.0 FEET WIDE AND 4088.5 FEET OR 0.774 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 21 & 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J. Eidson

DATE: 8/25/2016

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 FEET

Scale: 1"=1000'

XTO ENERGY

SURVEY FOR AN ACCESS ROAD TO CONNECT THE BUTTERCUP 27 34 3 FEDERAL #1H THROUGH #7H WELLS & BUBBLES 22 15 FEDERAL #1H THROUGH #8H WELLS CROSSING SECTIONS 21 & 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

PROVIDING SURVEYING SERVICES SINCE 1946

JOHN WEST SURVEYING COMPANY

412 N. DAL PASO HOBBS, N.M. 88240

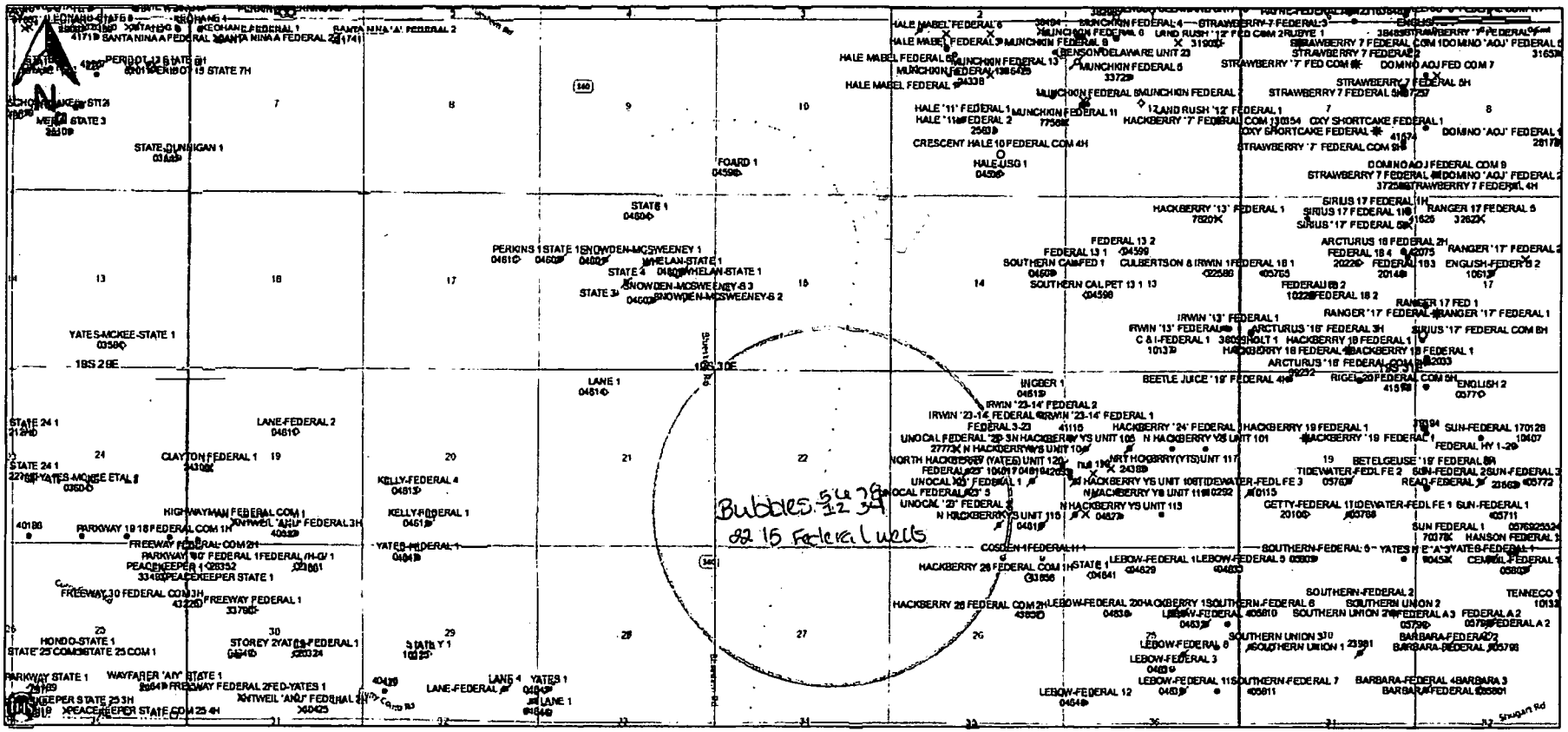
(575) 393-3117 www.jwsc.biz

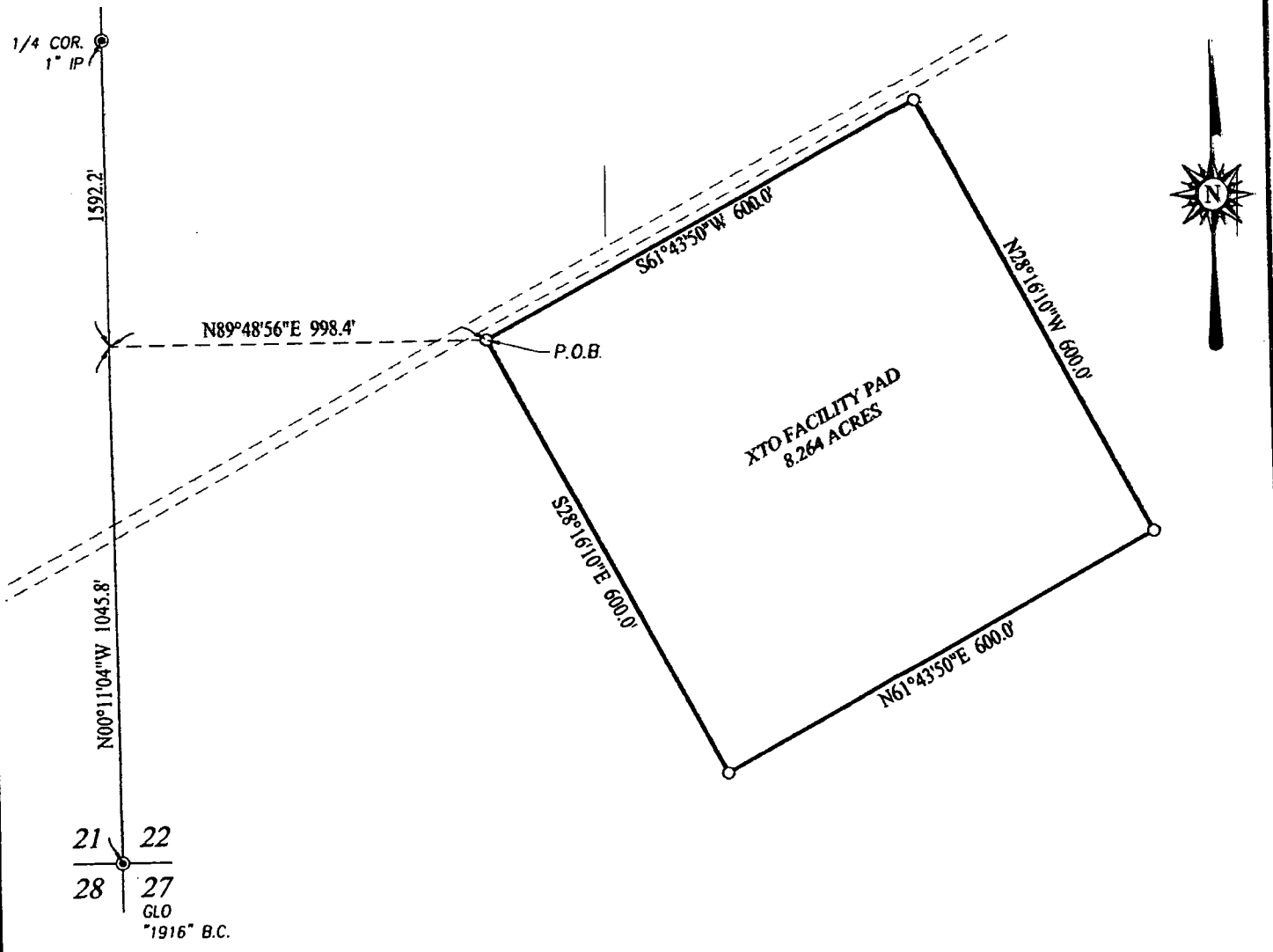
TBPLS# 10021000

Survey Date: 7/22/16	CAD Date: 8/18/16	Drawn By: ACK	
W.O. No.: 16110563	Rev: 8/24/16	Rel. W.O.:	Sheet 1 of 1

© Angelica\2016\XTO ENERGY\Easements\16110563 Access Rd to the Buttercup & Bubbles Wells in Secs 21-27, T19S, R30E

Bubbles 22 15 Federal Lease





LEGEND

◉ DENOTES FOUND CORNER AS NOTED

NOTE

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RONALD J. EIDSON: Ronald J. Eidson

DATE: 8/16/2016

REGISTERED PROFESSIONAL SURVEYOR 3239

DESCRIPTION:

A PROPOSED FACILITY PAD SITUATED IN THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF THE FACILITY PAD WHICH LIES N00°11'04"W 1045.8 FEET AND N89°48'56"E 998.4 FEET FROM THE SOUTHWEST CORNER OF SAID SECTION 22; THEN S28°16'10"E 600.0 FEET; THEN N61°43'50"E 600.0 FEET; THEN N28°16'10"W 600.0 FEET; THEN S61°43'50"W 600.0 FEET TO THE POINT OF BEGINNING AND CONTAINING 8.264 ACRES MORE OR LESS.

200 0 200 400 Feet

Scale: 1"=200'

XTO ENERGY

SURVEY FOR A FACILITY PAD
SITUATED IN THE SW/4 OF SECTION 22,
TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M.
EDDY COUNTY, NEW MEXICO

Survey Date: 7/29/16	CAD Date: 8/4/16	Drawn By: LSL	
W.O. No.: 16110562	Rev:	Rel. W.O.:	Sheet 1 of 1

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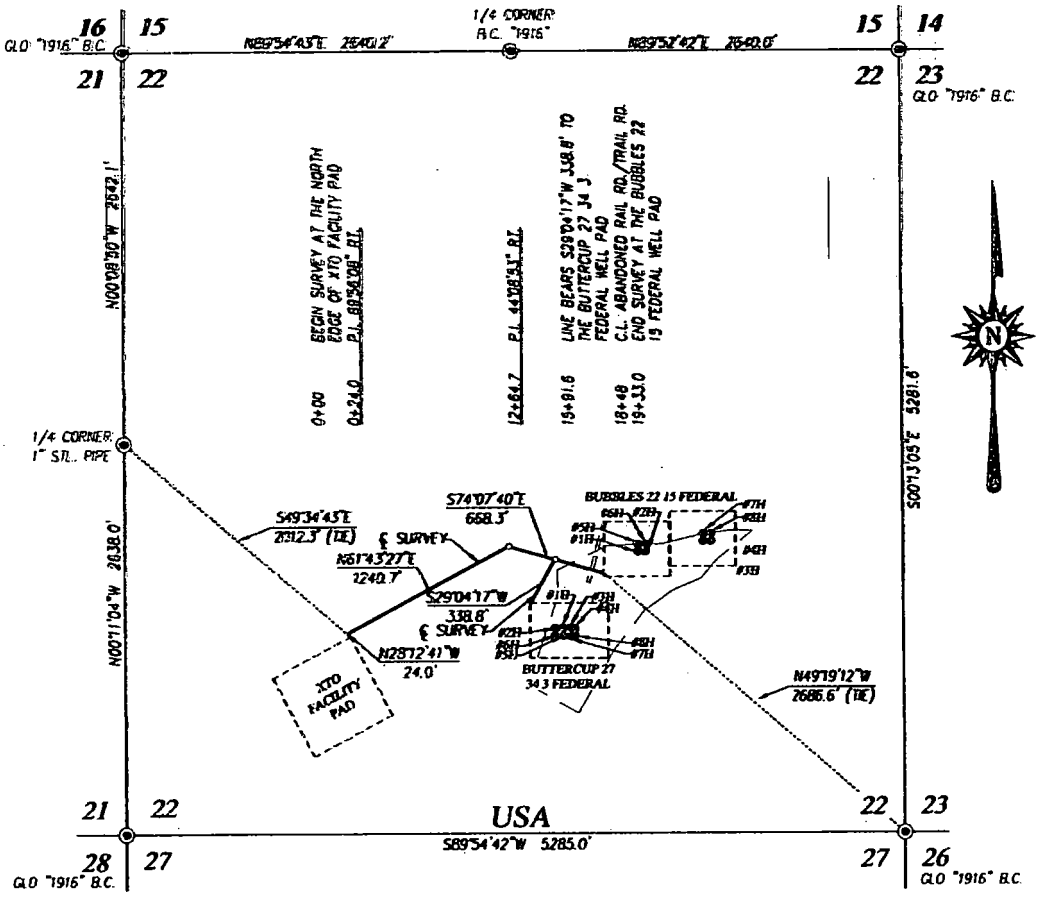
TBPLS# 10021000

© DRAFTING\Lorenzo\2016\XTO ENERGY\TRACT\16110562 buttercup facility pad



DESCRIPTION

SURVEY FOR A STRIP OF LAND 30.0 FEET WIDE AND 2271.8 FEET OR 0.430 MILES IN LENGTH CROSSING USA LAND IN SECTION 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J. Eidson

DATE: 8/25/2016

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 FEET

Scale: 1"=1000'

XTO ENERGY

SURVEY FOR A FLOW LINE TO THE BUTTERCUP 27 34 3 FEDERAL WELL PAD & BUBBLES 22 15 FEDERAL WELL PAD CROSSING SECTION 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

PROVIDING SURVEYING SERVICES SINCE 1946

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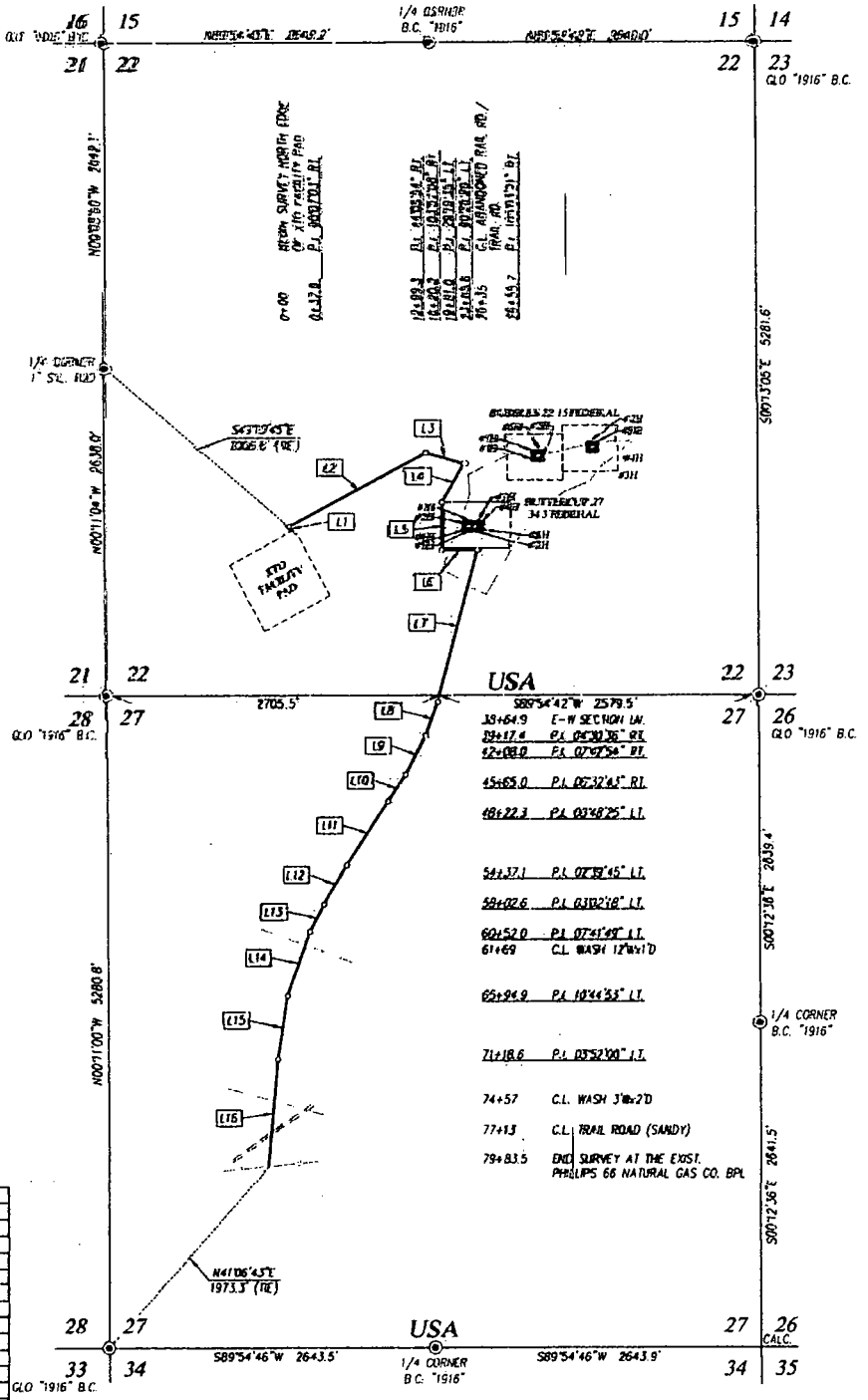
Survey Date: 8/1/16	CAD Date: 8/24/16		Drawn By: ACK
W.O. No.: 16110565	Rev: .	Rel. W.O.:	Sheet 1 of 1

©Anjelico\2016\XTO ENERGY\Easements\16110565 Flow Line to connect the Buttercup & Bubbles Wells in Sec22, T19S, R30E



LINE	BEARING	DISTANCE
L1	N28°23'34"W	37.9'
L2	N61°43'29"E	1261.4'
L3	S74°10'37"E	320.9'
L4	S29°46'31"W	360.8'
L5	S00°26'56"W	384.6'
L6	S89°59'33"E	290.1'
L7	S15°03'48"W	1261.7'
L8	S19°34'24"W	290.6'
L9	S27°17'18"W	357.0'
L10	S33°50'01"W	257.3'
L11	S33°01'36"W	614.8'
L12	S30°21'51"W	365.4'
L13	S27°19'33"W	249.4'
L14	S19°37'44"W	542.9'
L15	S08°52'51"W	523.7'
L16	S05°00'51"W	864.9'

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON

DATE: 8/24/2016

PROVIDING SURVEYING SERVICES SINCE 1946

JOHN WEST SURVEYING COMPANY

412 N. DAL PASO HOBBS, N.M. 88240

(575) 393-3117 www.jwsc.biz

TBPLS# 10021000

DESCRIPTION

SURVEY FOR A STRIP OF LAND 30.0 FEET WIDE AND 7983.5 FEET OR 1.512 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 22 & 27, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 FEET

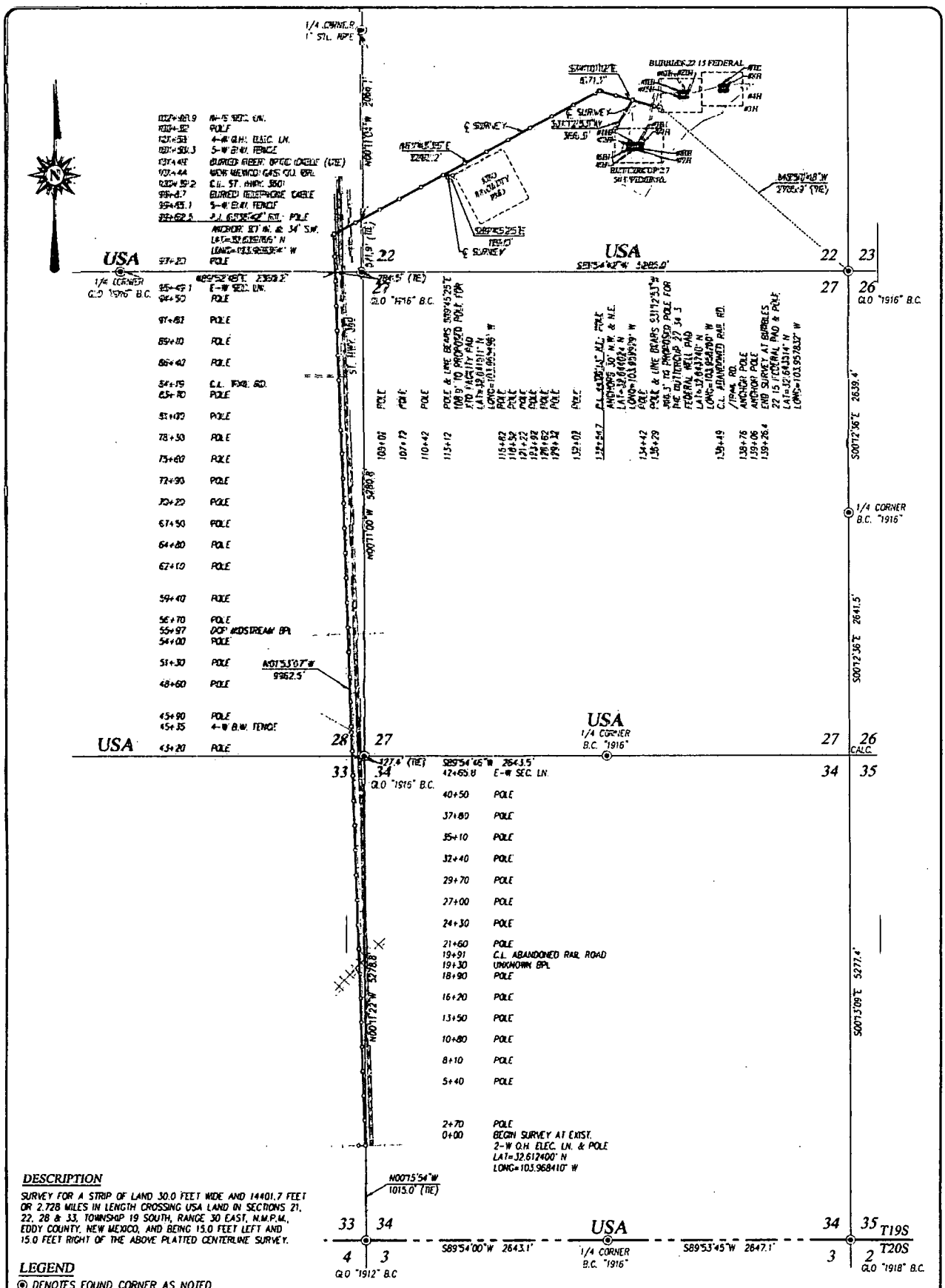
Scale: 1"=1000'

XTO ENERGY

SURVEY FOR A GAS SALE PIPELINE TO THE PHILLIPS 66 NATURAL GAS CO. BPL CROSSING SECTIONS 22 & 27, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 8/9-11/16	CAD Date: 8/24/16	Drawn By: ACK
W.O. No.: 16110566	Rev.:	Rel. W.O.:	Sheet 1 of 1

© Arxjelco\2016\XTO ENERGY\Easements\16110566 Gas Sales PL to the Phillips 66 Natural Gas Pipeline in Secs 22&27, T19S, R30E



DESCRIPTION

SURVEY FOR A STRIP OF LAND 30.0 FEET WIDE AND 14401.7 FEET OR 2.728 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 21, 22, 28 & 33, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION, THAT I AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO, AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON

DATE: 8/24/2016

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JOHN WEST SURVEYING COMPANY

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TBPLS# 10021000

NOTE

1) BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

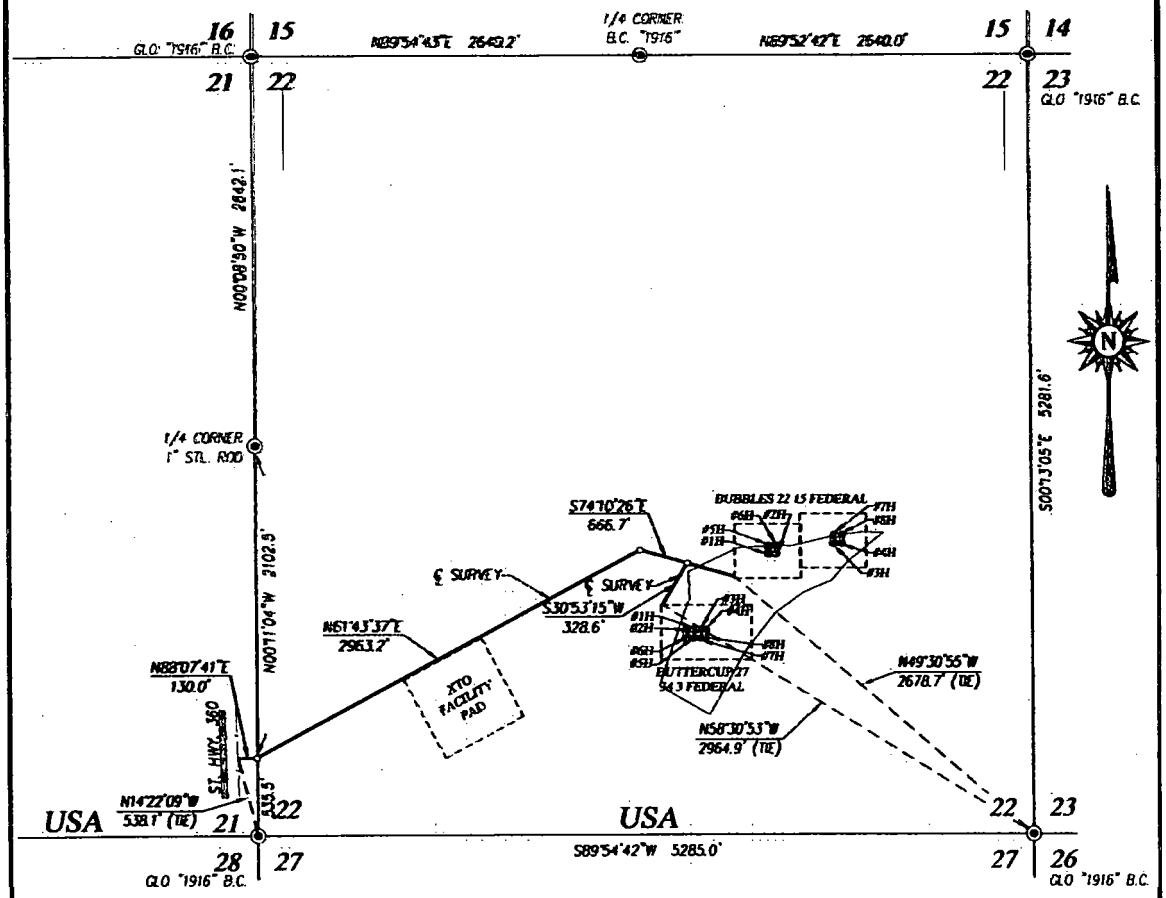
2) LATITUDE AND LONGITUDE VALUES SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN DATUM 1983 (NAD83).

XTO ENERGY

SURVEY FOR AN ELECTRIC LINE TO THE BUBBLES 22 15 FEDERAL #1H THROUGH #8H WELLS AND BUTTERCUP 27 34 3 FEDERAL #1H THROUGH #8H WELLS CROSSING SECTIONS 21, 22, 28 & 33, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 8/2/16	CAD Date: 8/23/16	Drawn By: ACK
W.O. No.: 16110564	Rev: .	Rel. W.O.:	Sheet 1 of 1

© Angelica\2016\XTO ENERGY\Easements\16110564 Elec Ln to the Buttercup & Bubble Wells in Sec22, T19S, R30E



DESCRIPTION

SURVEY OF A STRIP OF LAND 30.0 FEET WIDE AND 4088.5 FEET OR 0.774 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 21 & 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

NOTE

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RONALD J. EIDSON Ronald J. Eidson

DATE: 8/25/2016

NEW MEXICO 3239 PROFESSIONAL SURVEYOR

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 FEET

Scale: 1"=1000'

XTO ENERGY

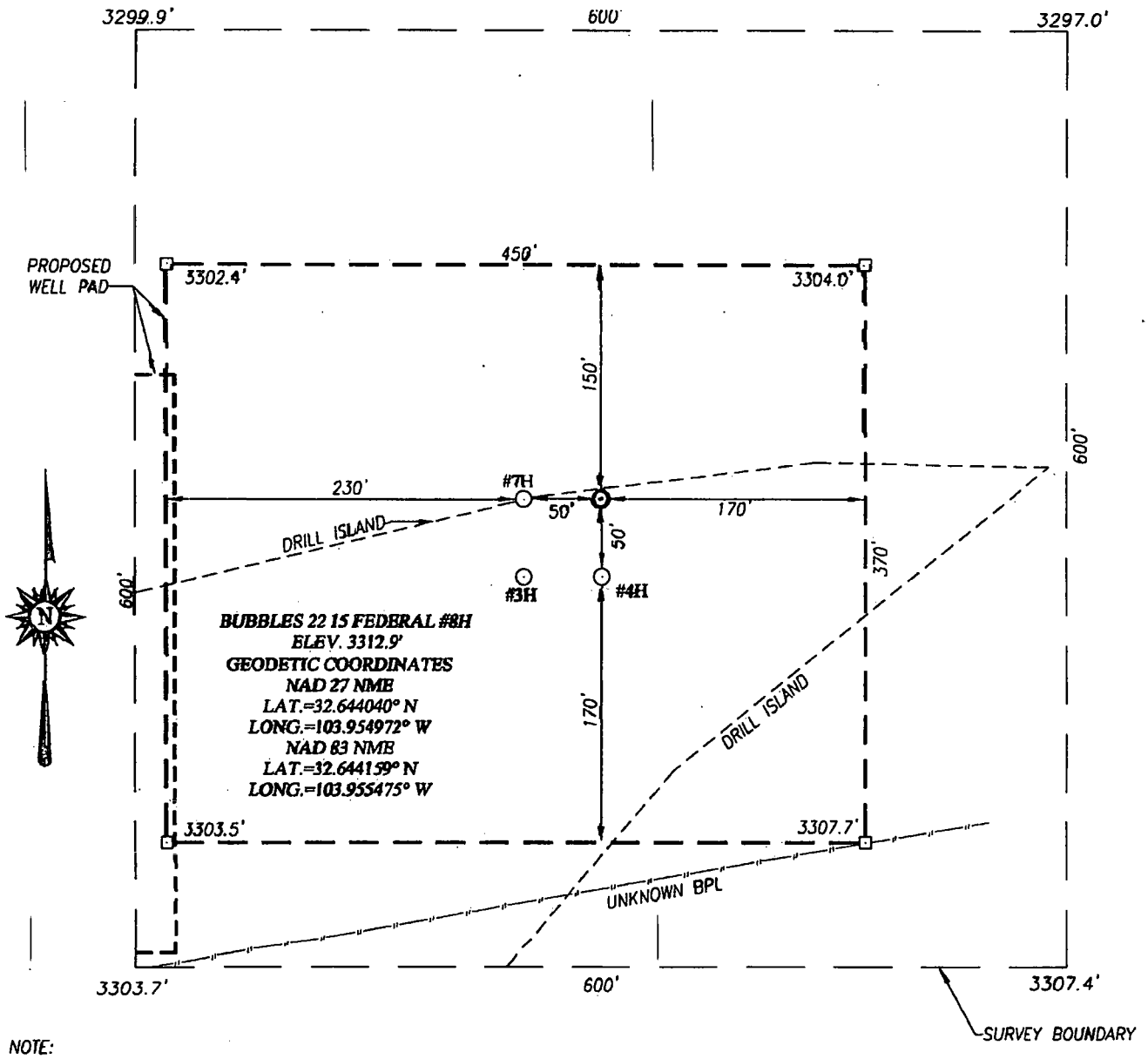
SURVEY FOR AN ACCESS ROAD TO CONNECT THE BUTTERCUP 27 34 3 FEDERAL #1H THROUGH #7H WELLS & BUBBLES 22 15 FEDERAL #1H THROUGH #8H WELLS CROSSING SECTIONS 21 & 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

Survey Date: 7/22/16	CAD Date: 8/18/16	Drawn By: ACK	
W.O. No.: 16110563	Rev: 8/24/16	Rel. W.O.:	Sheet 1 of 1

© Anjelica\2016\XTO ENERGY\Easements\16110563 Access Rd to the Buttercup & Bubbles Wells in Secs 21-27, T19S, R30E

WELL SITE PLAN



NOTE:
1) SEE "TOPOGRAPHICAL AND ACCESS ROAD MAP" FOR PROPOSED ROAD LOCATION.
2) PROPOSED PIPELINE AND ELECTRICAL LINE SHOWN HEREON HAVE NOT BEEN SURVEYED.

DIRECTIONS TO LOCATION:

FROM THE INTERSECTION OF U.S. HWY. 62-180 AND ST. HWY. #360, GO NORTH ON ST. HWY. #360 FOR APPROX. 8.45 MILES TO PROPOSED ACCESS ROAD. FOLLOW STAKED ROAD NORTHEAST APPROX. 0.02 MILES. TURN RIGHT AND GO SOUTHEAST APPROX. 0.69 MILES TO THE SOUTHWEST CORNER OF THE BUBBLES WEST PAD.

100 0 100 200 Feet
Scale: 1"=100'

XTO ENERGY

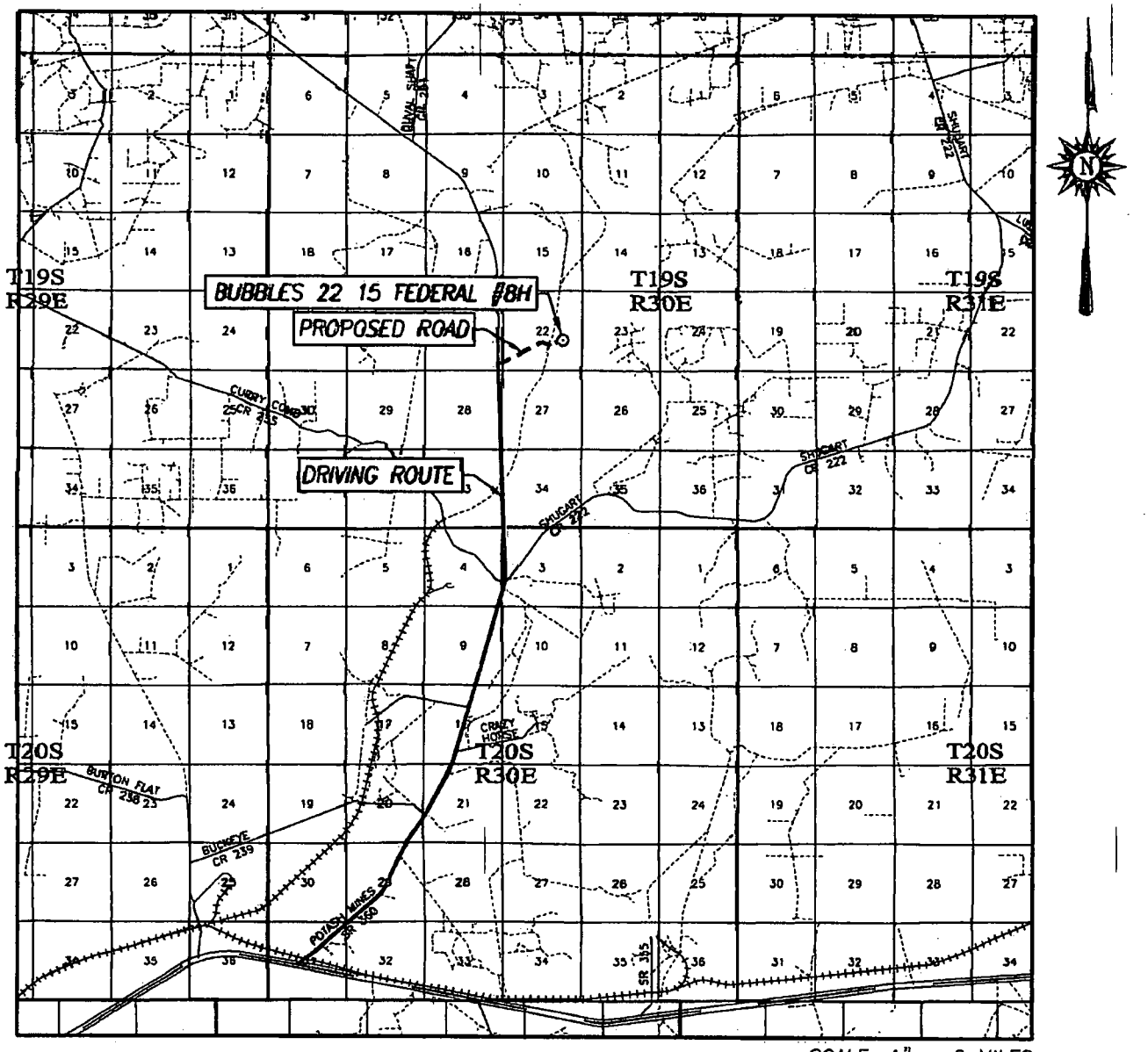
BUBBLES 22 15 FEDERAL #8H WELL
LOCATED 2020 FEET FROM THE SOUTH LINE
AND 1305 FEET FROM THE EAST LINE OF SECTION 22,
TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

Survey Date: 8/16/16	CAD Date: 8/26/16	Drawn By: ACK	
W.O. No.: 16110419	Rev: .	Rel. W.O.:	Sheet 1 of 1

© Anjelico\2016\XTO ENERGY\Wells\16110419 Bubbles 22 15 Federal #8H

VICINITY MAP



SCALE: 1" = 2 MILES

DRIVING ROUTE: SEE TOPOGRAPHICAL AND ACCESS ROAD MAP

SEC. 22 TWP. 19-S RGE. 30-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 2020' FSL & 1305' FEL

ELEVATION 3313'

OPERATOR XTO ENERGY

LEASE BUBBLES 22 15 FEDERAL

PROVIDING SURVEYING SERVICES
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JOHN WEST SURVEYING COMPANY
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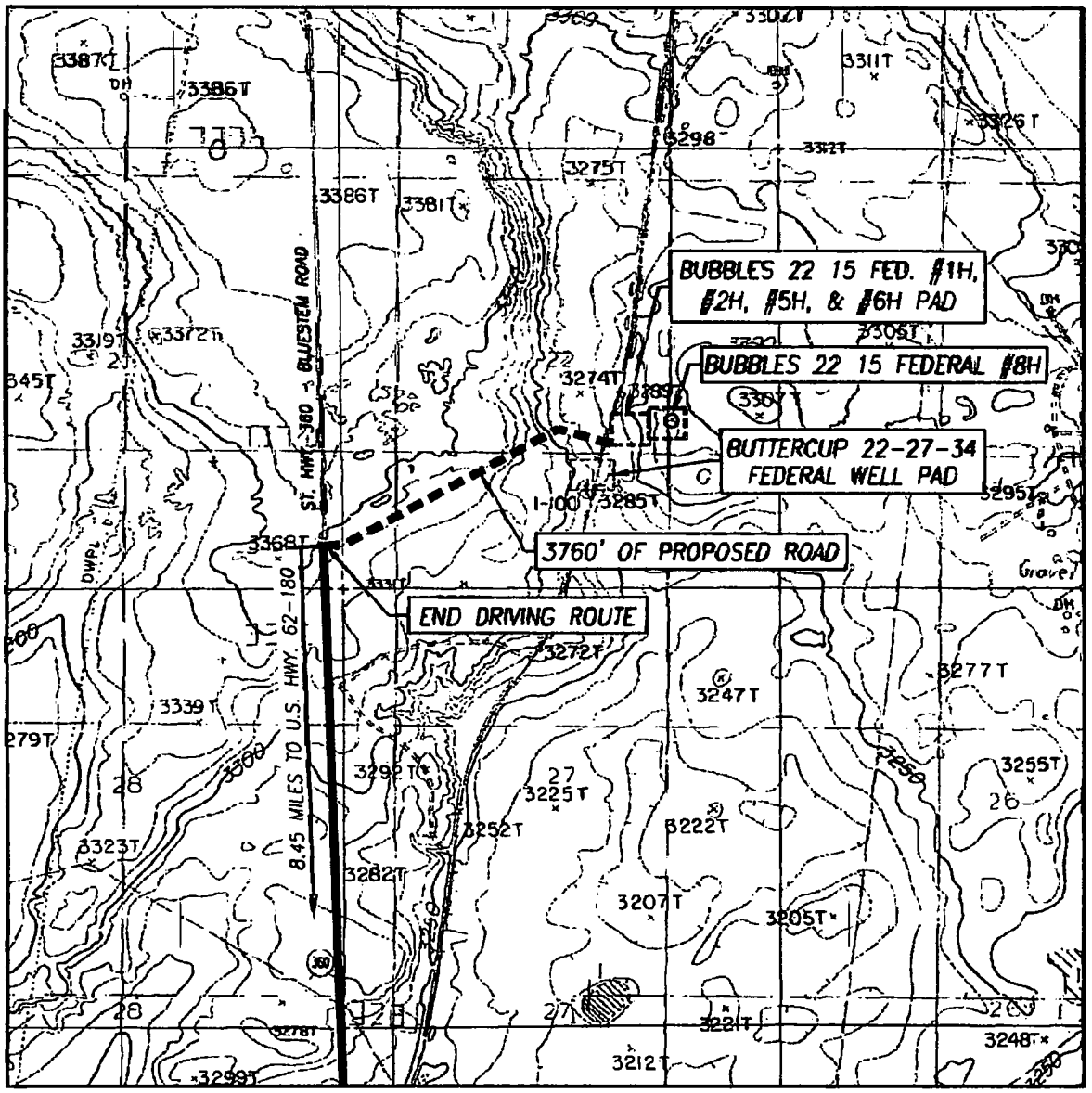
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

TOPOGRAPHICAL AND ACCESS ROAD MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
HACKBERRY LAKE, N.M. - 10'

SEC. 22 TWP. 19-S RGE. 30-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 2020' FSL & 1305' FEL

ELEVATION 3313'

OPERATOR XTO ENERGY

LEASE BUBBLES 22 15 FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
HACKBERRY LAKE, N.M.

DIRECTIONS TO LOCATION:

FROM THE INTERSECTION OF U.S. HWY. 62-180 AND ST. HWY. #360, GO NORTH ON ST. HWY. #360 FOR APPROX. 8.45 MILES TO PROPOSED ACCESS ROAD. FOLLOW STAKED ROAD NORTHEAST APPROX. 0.02 MILES. TURN RIGHT AND GO SOUTHEAST APPROX. 0.69 MILES TO THE SOUTHWEST CORNER OF THE BUBBLES WEST PAD.

PROVIDING SURVEYING SERVICES
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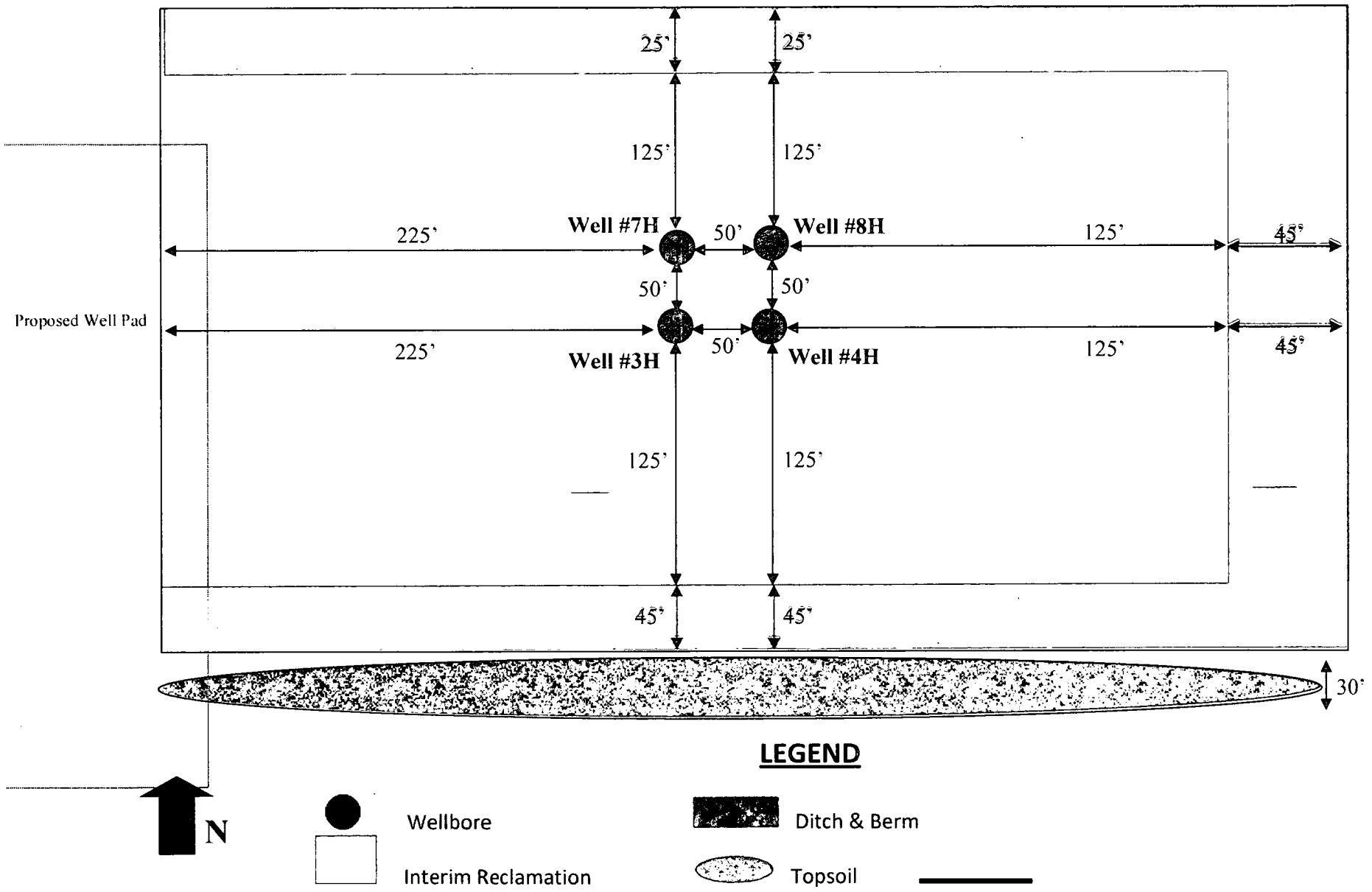
Interim Reclamation Diagram

Bubbles 22 15 Federal #3H, 4H, 7H & 8H

V-Door East (All Wells)



NMCRIS No.: 136713

NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

1. NMCRIS Activity No.:	2a. Lead Agency:	2b. Other Agency(ies):	3. Lead Agency Report No.:
136713	US Bureau of Land Management Carlsbad Field Office (BLM/CFO)		

4. Title of Report:

A Class III Archaeological Survey for the XTO Energy Proposed Mojo Jojo Drill Island for the Bubbles 22 15 Federal #1H - #8H and the Buttercup 27 34 3 Federal #1H - #8H Well Pads and Associated Access Road, Electric Line, Flowline, and Buried Gas Line, Eddy County, New Mexico.

Author(s)

Galassini, Stacy K. and Joshua W. Broxson

5. Type of Report

☑ Negative

☐ Positive

6. Investigation Type

☐ Research Design ☑ Archaeological Survey/Inventory ☐ Architectural Survey/Inventory ☐ Test Excavation ☐ Excavation
☐ Collections/Non-Field Study ☐ Compliance Decision Based on Previous Inventory ☐ Overview/Lit Review ☐ Monitoring
☐ Ethnographic Study ☐ Site/Property Specific Visit ☐ Historic Structures Report ☐ Other

7. Description of Undertaking (what does the project entail?):

A pedestrian cultural resources survey was conducted from September 8 to September 19, 2016 for the XTO Energy proposed Mojo Jojo Drill Island for the Bubbles 22 15 Federal #1H - #8H and the Buttercup 27 34 3 Federal #1H - #8H well pads and associated access road, electric line, flowline, and buried gas line. The proposed project lies on federal lands managed by the BLM/CFO in Sections 21, 22, and 27 of T19S R30E. The proposed drilling island measures 722,603.16 sq. ft. or 16.59 acres. The three well pads (two at 350 ft. x 450 ft. and one at 350 ft. x 530 ft.) total 529,100 sq. ft. or 12.15 acres. The facility pad (600 ft. x 600 ft.) measures 360,000 sq. ft. or 8.26 acres. The access road, electric line, flowline, and gas line share a right of way which measures 4,176.59 ft. x 60 ft. A portion of the gas line measuring 6,001.32 ft. x 30 ft. extends beyond the shared right of way. The linear features measure 430,634.6 sq. ft. or 9.89 acres. The project totals 2,042,338.66 sq. ft. or 46.89 acres. Per a pre-field consultation with BLM/CFO archaeologist B. Boeke conducted on August 18, 2016, the drill island and a 200 ft. wide surrounding buffer zone was surveyed using 50 ft. parallel transects. An additional 100 ft. wide buffer was surveyed to cover the portions of the well pads which extended beyond the drilling island.

[x] **Continuation**

8. Dates of Investigation: from: 08-Sep-2016 to: 19-Sep-2016

9. Report Date: 20-Sep-2016

10. Performing Agency/Consultant: Boone Archaeological Resource Consultants, LLC.

Principal Investigator: Stacy K. Galassini

Field Supervisor: Christopher L. Mickwee

Field Personnel Names: Christopher L. Mickwee
Paul D. Ashbaugh

Historian / Other:

11. Performing Agency/Consultant Report No.:

BARC 07-16-90

12. Applicable Cultural Resource Permit No(s):

BLM Permit No.: 190-2920-16-V

NMCRIS No.: 136713

13. Client/Customer (project proponent):

XTO Energy

Contact: Stephanie Rabadue

Address: 200 N. Loraine, Suite 800, Midland, TX 79701 **Phone:** 432-620-6714

14. Client/Customer Project No.:

15. Land Ownership Status (must be indicated on project map):

Land Owner (By Agency)	Acres Surveyed	Acres in APE
US Bureau of Land Management Carlsbad Field Office	92.67	92.67
TOTALS	92.67	92.67

16. Records Search(es):

Date(s) of HPD/ARMS File Review: 18 Aug 2016	Name of Reviewer(s): S.K. Galassini	
Date(s) of Other Agency File Review: 18 Aug 2016	Name of Reviewer(s): S.K. Galassini	Agency: BLM/CFO

17. Survey Data:

a. Source Graphics [ ] NAD 27 [x] NAD 83 Note: NAD 83 is the NMCRIS standard.

[x] USGS 7.5' (1:24,000) topo map [ ] Other topo map, Scale:

[x] GPS Unit Accuracy [x] <1.0m [ ] 1-10m [ ] 10-100m [ ] >100m [ ] Aerial Photo(s)

Other Source Graphic(s):

b. USGS 7.5' Topographic Map Name	USGS Quad Code
Hackberry Lake, NM	32103-F8

c. County(ies): EDDY

d. Nearest City or Town: Loco Hills, NM

e. Legal Description:

Township (N/S)	Range (E/W)	Sections
19S	30E	21, 22, and 27

Projected legal description? [ ] Yes [x] No [ ] Unplatted

f. Other Description (e.g. well pad footages, mile markers, plats, land grant name, etc.):

Buttercup 27 34 3 Federal:
#1H: 1,495' FSL & 1,770' FEL #5H: 1,445' FSL & 1,770' FEL
#2H: 1,495' FSL & 1,820' FEL #6H: 1,445' FSL & 1,820' FEL
#3H: 1,670' FSL & 1,655' FEL #7H: 1620 ' FSL & 1,655' FEL
#4H: 1,670' FSL & 1,605' FEL #8H: 1,620' FSL & 1,605' FEL

Bubbles 22 #15 Federal:
#1H: 1,895' FSL & 1,800' FEL #5H: 1,945' FSL & 1,800' FEL
#2H: 1,895' FSL & 1,750' FEL #6H: 1,945' FSL & 1,750' FEL
#3H: 1,970' FSL & 1,355' FEL #7H: 2,020' FSL & 1,355' FEL
#4H: 1,970' FSL & 1,305' FEL #8H: 2,020' FSL & 1,350' FEL

[ ] Continuation

18. Survey Field Methods:

Intensity: [x] 100% coverage [ ] <100% coverage

NMCRIS No.: 136713

Configuration: [x] block survey units [x] linear survey units (l x w): 7,158.82 ft. x 150 ft.
[ ] other survey units (specify):

Scope: [x] non-selective (all sites/properties recorded) [ ] selective/thematic (selected sites/properties recorded)

Coverage Method: [x] systematic pedestrian coverage
[ ] other method (describe):

Survey Interval (m): 15 **Crew Size:** 2 **Fieldwork Dates:** from: 08-Sep-2016 to: 19-Sep-2016

Survey Person Hours: 21.00 **Recording Person Hours:** 0.00 **Total Hours:** 21.00

Additional Narrative:

The proposed project lies within 1/4 mile of eleven previously recorded archaeological sites: LAs 36561, 36562, 36563, 37952, 37953, 70120, 76426, 107315, 131308, 158191, and 164792. The project intersects the site boundaries of LA 158191; however no update was conducted of the site per instructions from BLM/CFO archaeologist B. Boeke. The project is at a distance sufficient to avoid impacting the remaining sites. For detailed descriptions of these sites, see Table 1 on page 5.

[ ] Continuation

19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.):

According to the Natural Resources Conservation Service' online database, the project area soils consist of Berino soils. These soils are associated with the Loamy Sand ecological site (R024CX003NM) which typically supports black grama, dropseed, and bluestem grasslands with an even distribution of sand sage, shinnery oak, and mesquite. The current vegetative community consists of shinnery oak, sand sage, mesquite, soapweed yucca, broom snakeweed, and desert grasses and forbs. The project is located on an undulating landscape with small to moderate dunes (1 ft. – 15 ft.), approximately 2.83 miles north of Clayton Basin and 1.69 miles west of Nimenim Ridge. The elevation ranges from 3,280 ft. to 3,350 ft. above mean sea level.

[ ] Continuation

20.a. Percent Ground Visibility: 10% - 70% **b. Condition of Survey Area (grazed, bladed, undistributed, etc.):**

The survey area includes Bluestem Rd and an abandoned railroad (LA 158191).

[ ] Continuation

21. CULTURAL RESOURCE FINDINGS [ ] **Yes, see next report section** [x] **No, discuss why:**

LA 158191 fell within the survey area; however, the site was not updated per instructions from BLM/CFO archaeologist B. Boeke. Twenty-one isolated occurrences were noted and recorded. For detailed descriptions of the isolated occurrences, see Table 2 on page 6.

[ ] Continuation

22. Attachments (check all appropriate boxes):

[x] **USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)**

[x] **Copy of NMCRIS Map Check (required)**

[ ] **LA Site Forms - new sites (with sketch map & topographic map) if applicable**

[ ] **LA Site Forms (update) - previously recorded & un-relocated sites (first 2 pages minimum)**

[ ] **Historic Cultural Property Inventory Forms, if applicable**

[ ] **List and Description of Isolates, if applicable**

[ ] **List and Description of Collections, if applicable**

23. Other Attachments:

[ ] **Photographs and Log**

[x] **Other Attachments (Describe):** BLM Map, Plat Map, Pre-field Form

NMCRIS No.: 136713

24. I certify the information provided above is correct and accurate and meets all applicable agency standards.

Principal Investigator/Qualified Supervisor: **Printed Name:** Stacy K. Galassini

Signature: Stacy K. Galassini **Date:** 09-21-16 **Title:** Principal Investigator

25. Reviewing Agency	**26. SHPO**
Reviewer's Name/Date:	**Reviewer's Name/Date:**
Accepted [ ] **Rejected [ ]**	**HPD Log #:**
	Date sent to ARMS:

CULTURAL RESOURCE FINDINGS

[fill in appropriate section(s)]

SURVEY RESULTS:

Archaeological Sites discovered and registered: 0

Archaeological Sites discovered and NOT registered: 0

Previously recorded archaeological sites revisited (site update form required): 0

Previously recorded archaeological sites not relocated (site update form required): 0

TOTAL ARCHAEOLOGICAL SITES (visited & recorded): 0

Total isolates recorded: 21 ☑ **Non-selective isolate recording?**

HCPI properties discovered and registered: 0

HCPI properties discovered and NOT registered: 0

Previously recorded HCPI properties revisited: 0

Previously recorded HCPI properties not relocated: 0

TOTAL HCPI PROPERTIES (visited & recorded, including acequias): 0

MANAGEMENT SUMMARY:

The survey area intersects the site boundary of LA 158191; however, the site was not updated per instructions from BLM/CFO archaeologist B. Boeke. The site has been previously determined not eligible for the National Register of Historic Places and no treatment is recommended. Twenty-one isolated occurrences were noted and recorded. Isolated occurrences are not eligible for the National Register of Historic Places and no treatment is recommended. The project is recommended for approval as staked. If additional cultural materials are encountered during construction, work should be halted and archaeologists with BLM/CFO should be notified immediately.

[ ] Continuation

IF REPORT IS NEGATIVE, YOU ARE DONE AT THIS POINT.

SURVEY LA/HCPI NUMBER LOG

Sites/Properties Discovered:

LA/HCPI No. **Field/Agency No.** **Eligible? (Y/N/U, applicable criteria)**

NMCRIS No.: 136713

Previously recorded revisited sites/HCPI properties:

LA/HCPI No. **Field/Agency No.** **Eligible? (Y/N/U, applicable criteria)**

MONITORING LA NUMBER LOG (site form required)

Sites Discovered (site form required): **Previously recorded sites (site update form required):**

LA No. **Field/Agency No.** **LA No.** **Field/Agency No.**

Areas outside known nearby site boundaries monitored? **[ ] Yes** **[ ] No, Explain why:**

TESTING & EXCAVATION LA NUMBER LOG (site form required)

Tested LA number(s) **Excavated LA number(s)**

7. Description of Undertaking (what does the project entail?): The drill island survey area measures 2,322,392 sq. ft. or 53.32 acres. The facility pad and a 100 ft. wide surrounding buffer was also surveyed using 50 ft. parallel transects. The facility pad survey area measures 640,000 sq. ft. or 14.69 acres. Those portions of the linear features which fell outside of the drilling island and facility pad measure 7,158.82 ft. in length and were surveyed using three parallel 50 ft. transects, creating a 150 ft. wide survey area. The linear survey areas total 1,073,823 sq. ft. or 24.66 acres. The total survey area measures 4,036,215 sq. ft. or 92.67 acres.

The survey area intersects the site boundary of LA 158191; however, the site was not updated per instructions from BLM/CFO archaeologist B. Boeke. The site has been previously determined not eligible for the National Register of Historic Places and no treatment is recommended. Twenty-one isolated occurrences were noted and recorded. Isolated occurrences are not eligible for the National Register of Historic Places and no treatment is recommended.

Table 1. Previously Recorded Archaeological Sites within ¼ Mile.

LA No.	Cultural/Temporal Affiliation	Eligibility
36561	Jornada Mogollon/Unspecified (200 AD – 1400 AD)	Not Eligible
36562	Jornada Mogollon/Late Pithouse (750 AD – 1100 AD)	Not Eligible
36563	Jornada Mogollon/Early Pueblo (1100 AD – 1200 AD)	Eligible, D
37952	Unknown Aboriginal (9500 BC – 1880 AD)	Undetermined
37953	Unknown Aboriginal (9500 BC – 1880 AD)	Undetermined
70120	Unknown Aboriginal (9500 BC – 1880 AD)	Undetermined
76426	Unknown Aboriginal (9500 BC – 1880 AD)	Not Eligible
107315	Jornada Mogollon/Late Pithouse - Late Pueblo (750 AD – 1400 AD)	Undetermined
131308	Unknown Aboriginal (9500 BC – 1880 AD)	Eligible, D
158191	Anglo/ Recent (1945 AD – present)	Not Eligible
164792	Unknown Aboriginal (9500 BC – 1880 AD)	Eligible, D

Table 2. Isolated Occurrences.

IO No.	Description	Easting	Northing
01	Core-reduction flake, gray chert with platform and bulb, 1 cm x 2 cm	597294	3612151
02	Clear bottle glass	597671	3612322
03	Core-reduction flake, brown quartzite with platform and bulb, 2 cm x 2 cm	597270	3612134
04	Core-reduction flake, black chert with platform and bulb, 2 cm x 3 cm	597559	3611947
05	Core, gray chert, 8 cm x 8 cm	597202	3610778
06	Brownware sherd, 4 x 4	597646	3612131
07	Core-reduction flake, gray chert with platform and bulb, 3 cm x 3 cm	597249	3612139
08	Slab metate fragment, gray limestone, 12 cm x 10 cm	597277	3612160
09	Core-reduction flake, gray chert, 2 cm x 3 cm	597960	3612290
10	Carlsbad-like point, tan chert, 2 cm x 3 cm (collected) Core-reduction flake, brown chert with platform and bulb, 2 cm x 3 cm	597276	3612148
11	Metal wire object (n=2)	596738	3611861
12	Brownware sherd, 1 cm x 1 cm Core-reduction flake, brown chert, 1 cm x 1 cm Core-reduction flake, tan chert, 3 cm x 4 cm	597358	3612181
13	BC scatter (n=21) within 25 ft. radius	597112	3611945
14	Brownware sherd, 4 x 4	597647	3612131
15	Unifacial scraper, red chert with platform and bulb, 5 cm x 8 cm	597723	3612089
16	Ground-stone fragment, sandstone, 6 cm x 10 cm	597112	3612027
17	Core-reduction flake, white chert, 2 cm x 2 cm	597950	3612197
18	Brownware sherd, 4 x 4	597647	3612131
19	Core-reduction flake, white chert with platform and bulb, 2 cm x 2 cm	597615	3612122
20	Brownware sherd, 4 x 4	597981	3612184
21	Core-reduction flake, gray quartzite with platform and bulb, 4 cm x 4 cm	597941	3612263

Figure 1. IO 10, Carlsbad-like Point.

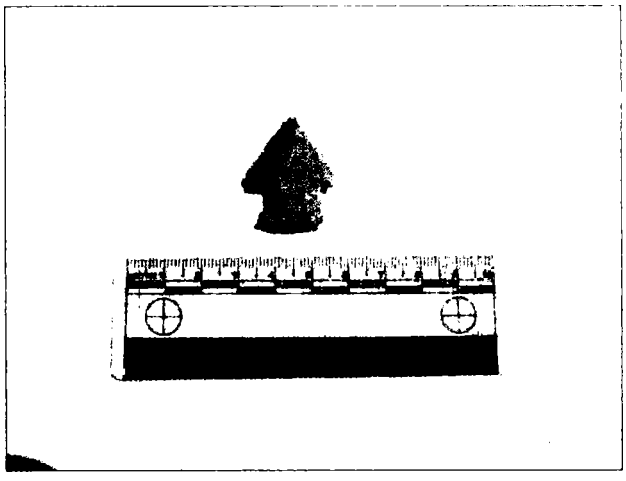
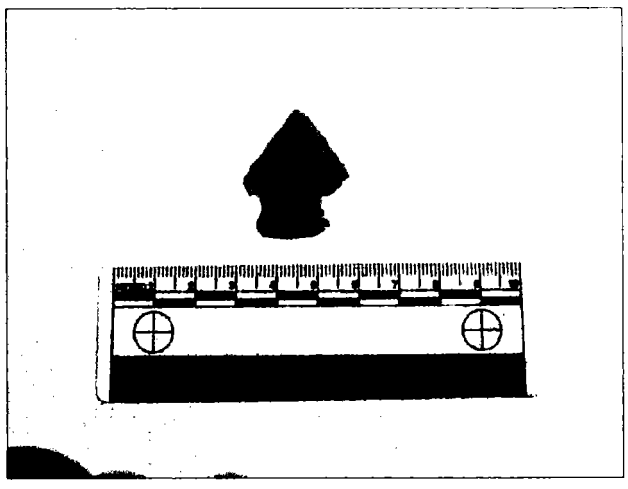


Figure 2. IO 10, Carlsbad-like Point, Reverse.



A Class III Archaeological Survey for the XTO Energy Proposed Mojo Jojo Drill Island for the Bubbles 22 15 Federal #1H - #8H and Buttercup 27 34 3 Federal #1H - #8H Well Pads and Associated Access Road, Electric Line, Flowline, and Buried Gas Line, Eddy County, New Mexico.

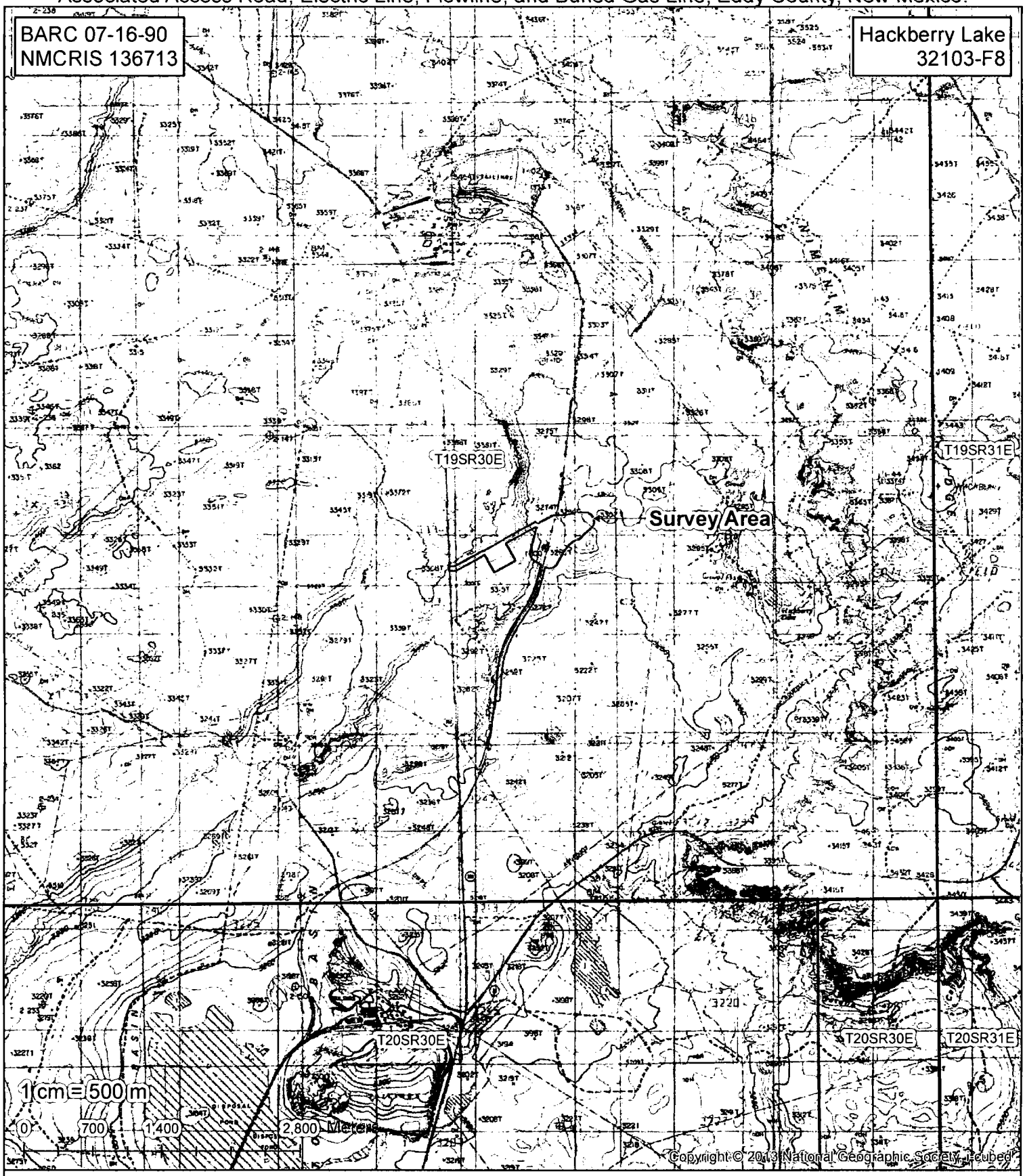


Figure 1. Project Area

☐ Survey Area BLM Private NM State Trust Land

N
W E
S

A Class III Archaeological Survey for the XTO Energy Proposed Mojo Jojo Drill Island for the Bubbles 22 15 Federal #1H - #8H and Buttercup 27 34 3 Federal #1H - #8H Well Pads and Associated Access Road, Electric Line, Flowline, and Buried Gas Line, Eddy County, New Mexico.

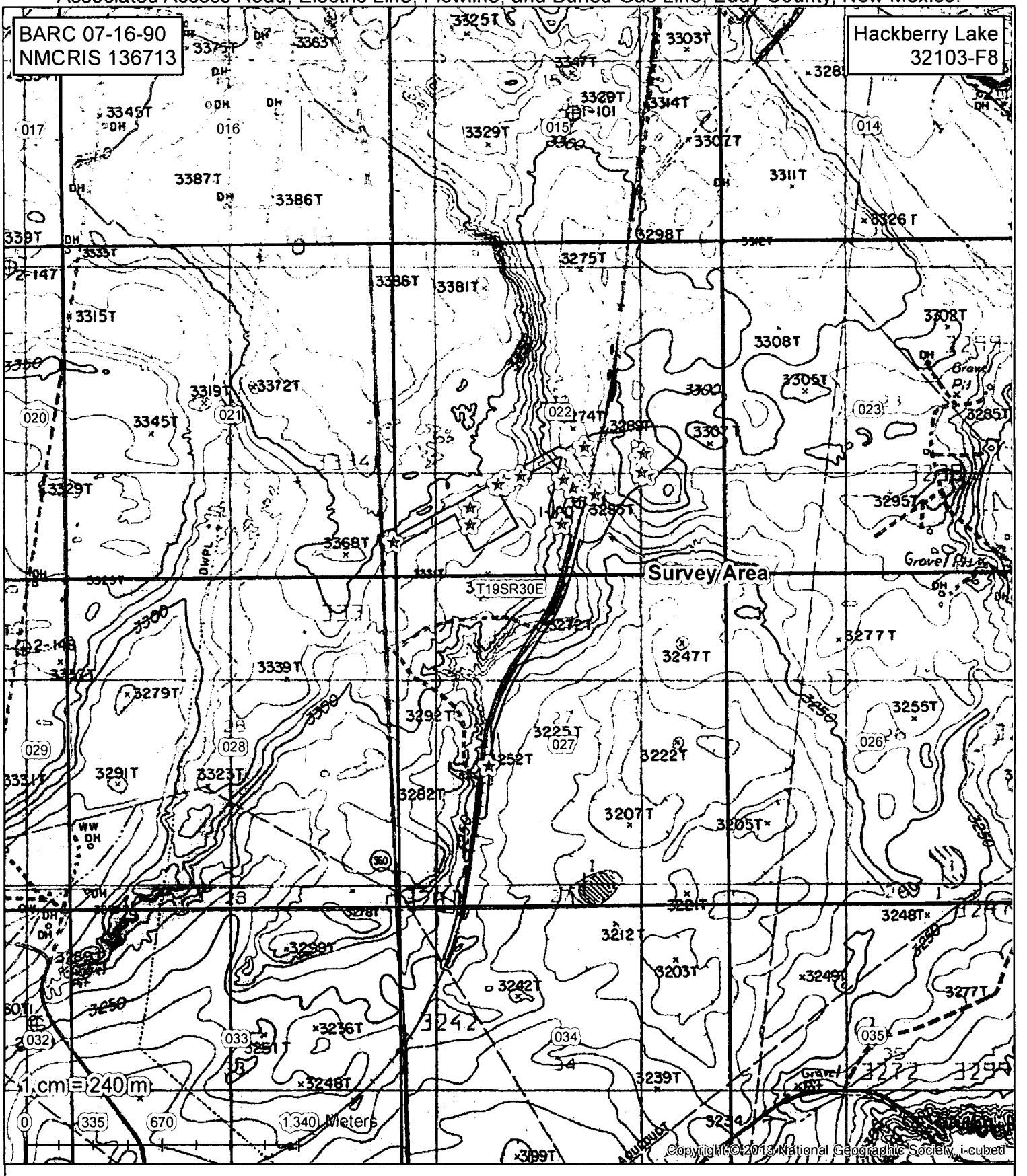


Figure 2. Current & Previous Survey Results

☐ Survey Area ★ Isolated Occurrence BLM Private NM State Trust Land

N W E S

A Class III Archaeological Survey for the XTO Energy Proposed Mojo Jojo Drill Island for the Bubbles 22 15 Federal #1H - #8H and Buttercup 27 34 3 Federal #1H - #8H Well Pads and Associated Access Road, Electric Line, Flowline, and Buried Gas Line, Eddy County, New Mexico.

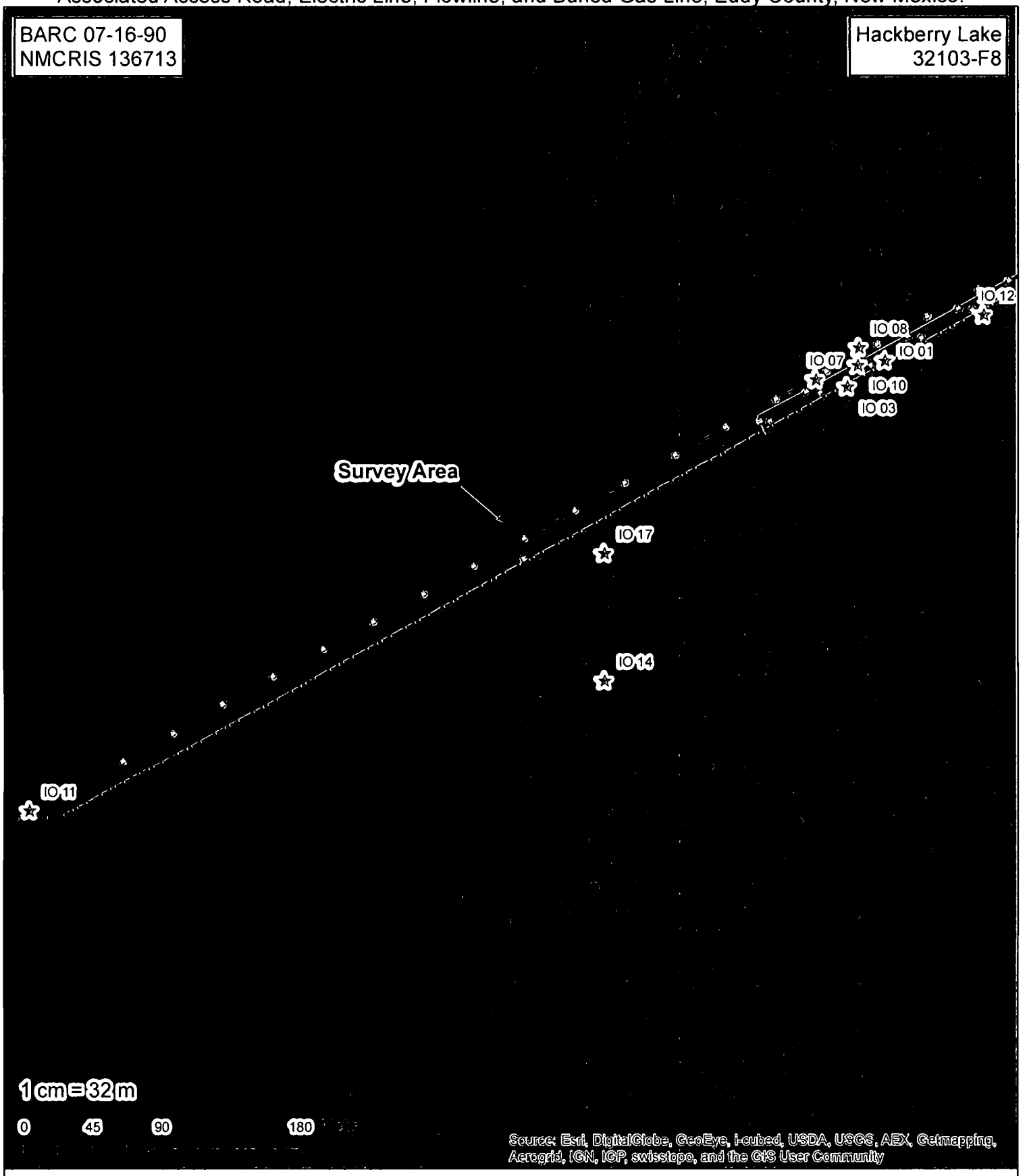


Figure 3. Project Layout & Isolated Occurrences

Survey Area | Access Road | Flowline | Isolated Occurrence | Private
Facility Pad | Electric Line | Gas Sales Pipeline | BLM | NM State Trust Land

N W E S

A Class III Archaeological Survey for the XTO Energy Proposed Mojo Jojo Drill Island for the Bubbles 22 15 Federal #1H - #8H and Buttercup 27 34 3 Federal #1H - #8H Well Pads and Associated Access Road, Electric Line, Flowline, and Buried Gas Line, Eddy County, New Mexico.

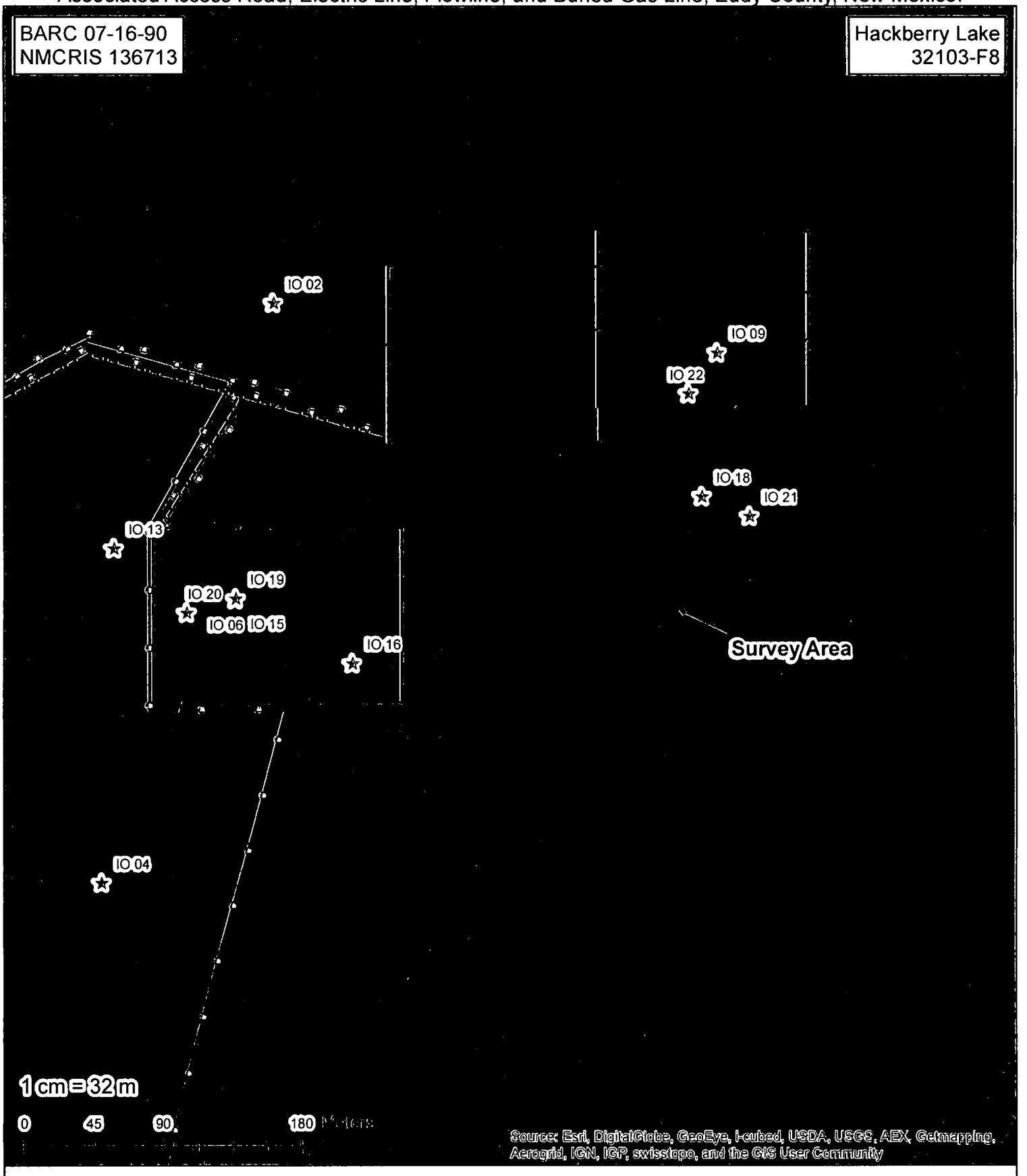


Figure 4. Project Layout & Isolated Occurrences

Survey Area | Well Pad | Electric Line | Gas Sales Pipeline | BLM | NM State Trust Land

Drill Island | Access Road | Flowline | Isolated Occurrence | Private

N W E S

A Class III Archaeological Survey for the XTO Energy Proposed Mojo Jojo Drill Island for the Bubbles 22 15 Federal #1H - #8H and Buttercup 27 34 3 Federal #1H - #8H Well Pads and Associated Access Road, Electric Line, Flowline, and Buried Gas Line, Eddy County, New Mexico.

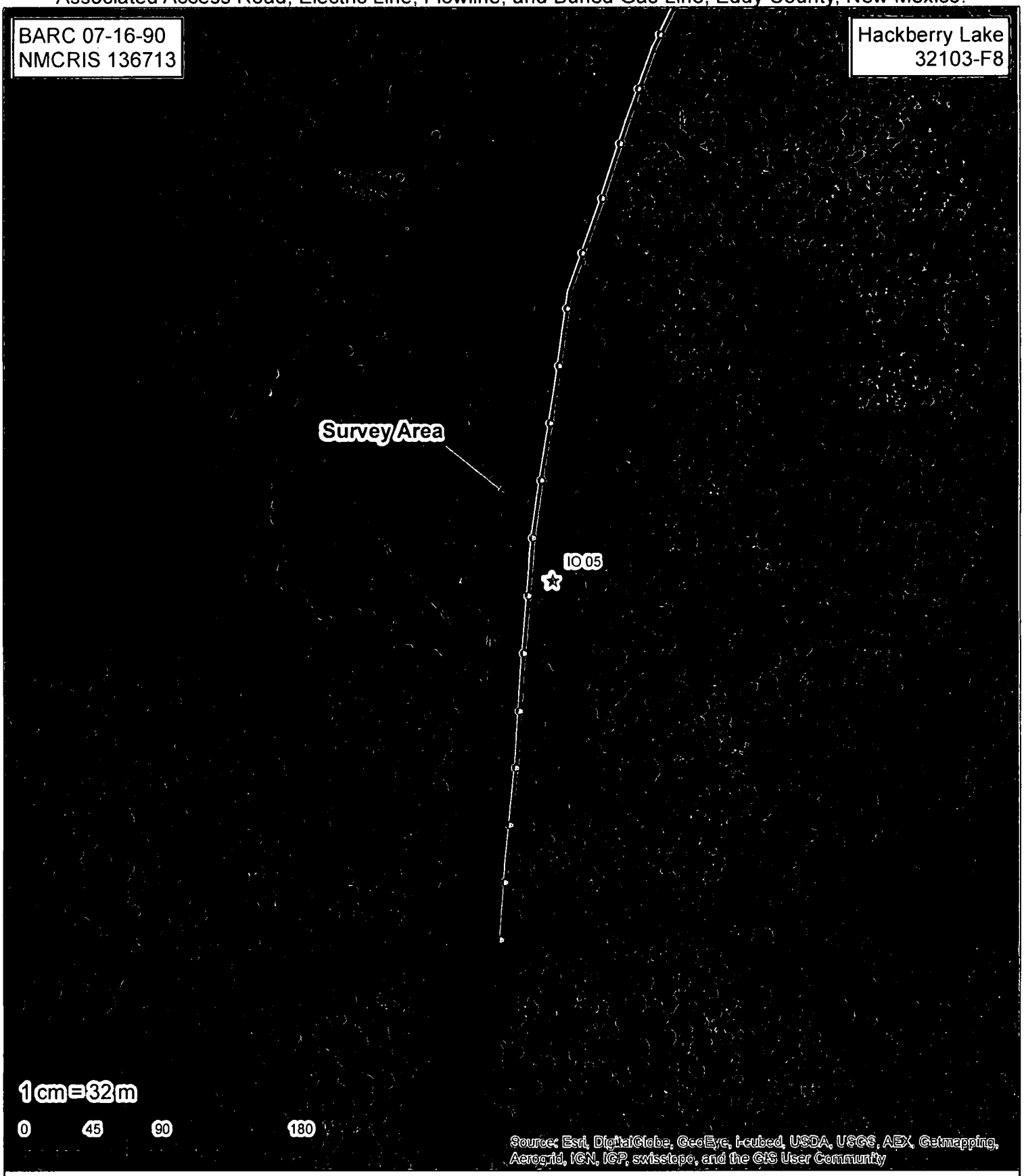


Figure 5. Project Layout & Isolated Occurrences

Survey Area | Well Pad | Electric Line | Gas Sales Pipeline | BLM | NM State Trust Land

Drill Island | Access Road | Flowline | Isolated Occurrence | Private

N W E S

Form 8151-3
Authorization # (BLM Use):

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FIELDWORK AUTHORIZATION REQUEST

To Conduct Specific Cultural Resource Work Under the Authority of a Cultural Resource Use Permit Issued by the Bureau of Land Management Pursuant to Sec 302(b) of P L 94-579, October 21, 1976, 43 U.S C 1732 and Sec 4 of P.L. 96-95, October 31, 1979, 16 U.S.C. 470cc

1. **Name of Permittee and Company**
   Stacy Galassini, Boone
2. **Date Permit Issued**
3. **Contact Telephone Number**
   575-885-1352
4. **Project Name and Client Name**
   XTO - Mojo Jojo Drill Island, CTB
5. **Location of Work or Legal Description (Include map)**
   a. **Description of Public Lands Involved**
   T19S R30E S22

   BARC# 07-16-90
6. **Nature of Cultural Resource Work (Survey, APE, etc.)**
   a. **Identification of Previous Surveys and Sites (if applicable)**
   NO SITE. UPDATE REQUIRED 158191 | SURVEY BLOCK
7. **Name of Individual(s) Responsible for Planning & Supervising Field Work, & Approving Reports, Evaluations, & Recommendations**
   Stacy Galassini
8. Signature of Individual Conducting Pre-Field Consultation
9. Date

· The individual named in item 7 above shall be present during the conduct of field work authorized herein, or shall notify the authorized officer of the need for any extended absence, and shall make provision that the work will be carried out under supervision of equal quality, by an individual approved by the authorized officer.

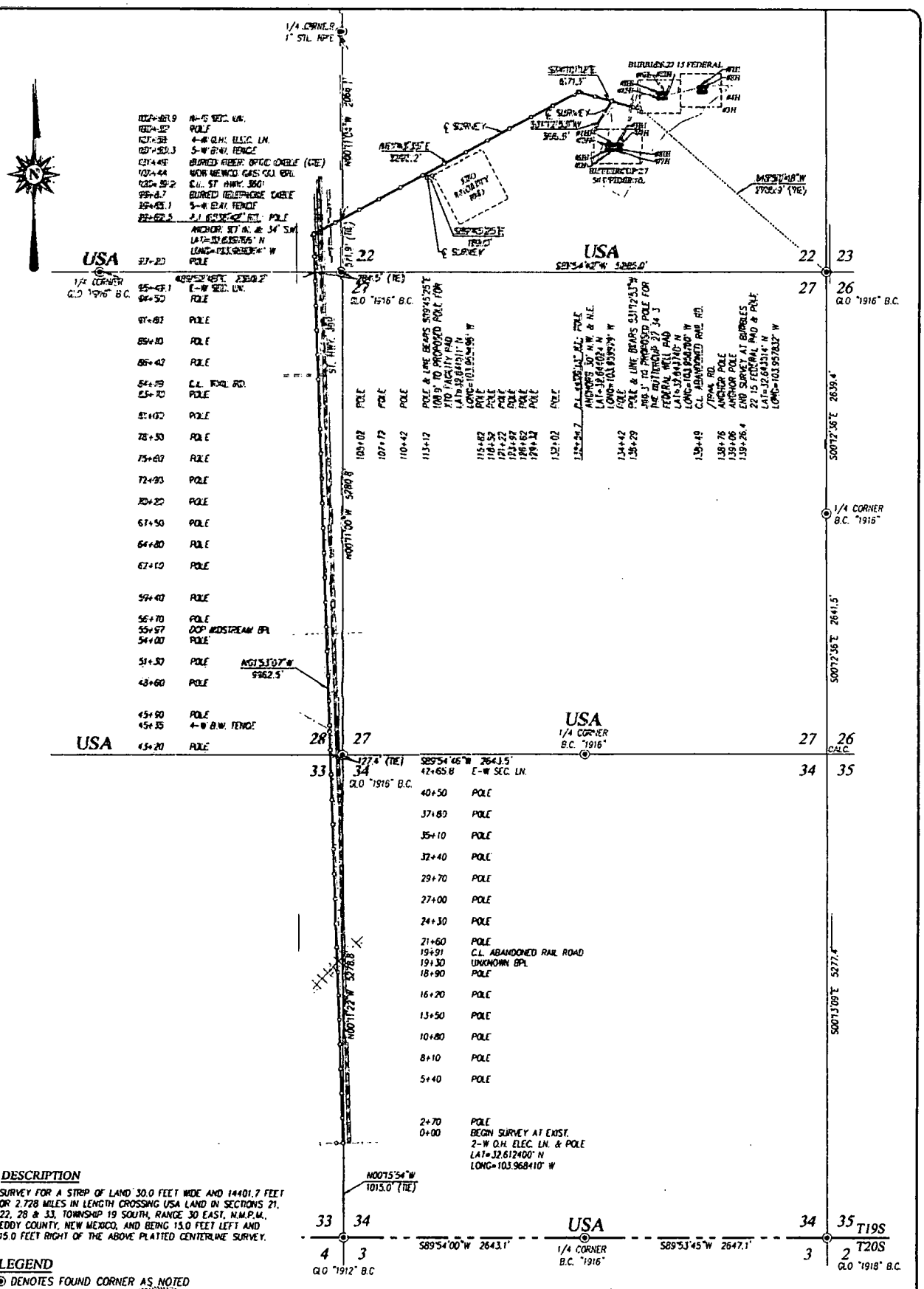
· All terms and conditions of the permit continue to apply; any special conditions attached hereto have the same force and effect as conditions of the permit.

· Permittee shall immediately notify the authorized officer of any change in items 3 through 7 above.

Fieldwork Authorization Request approved by:

Bryan Boyle
(Signature of BLM Authorized Officer)

Date: 8/18/16



DESCRIPTION

SURVEY FOR A STRIP OF LAND 30.0 FEET WIDE AND 14401.7 FEET OR 2.728 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 21, 22, 28 & 33, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION, THAT I AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO, AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON

DATE: 8/24/2016

PROVIDING SURVEYING SERVICES SINCE 1946

JOHN WEST SURVEYING COMPANY

412 N. DAL PASO HOBBS, N.M. 88240

(575) 393-3117 www.jwsc.biz

TBPLS# 10021000

NOTE

1) BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES

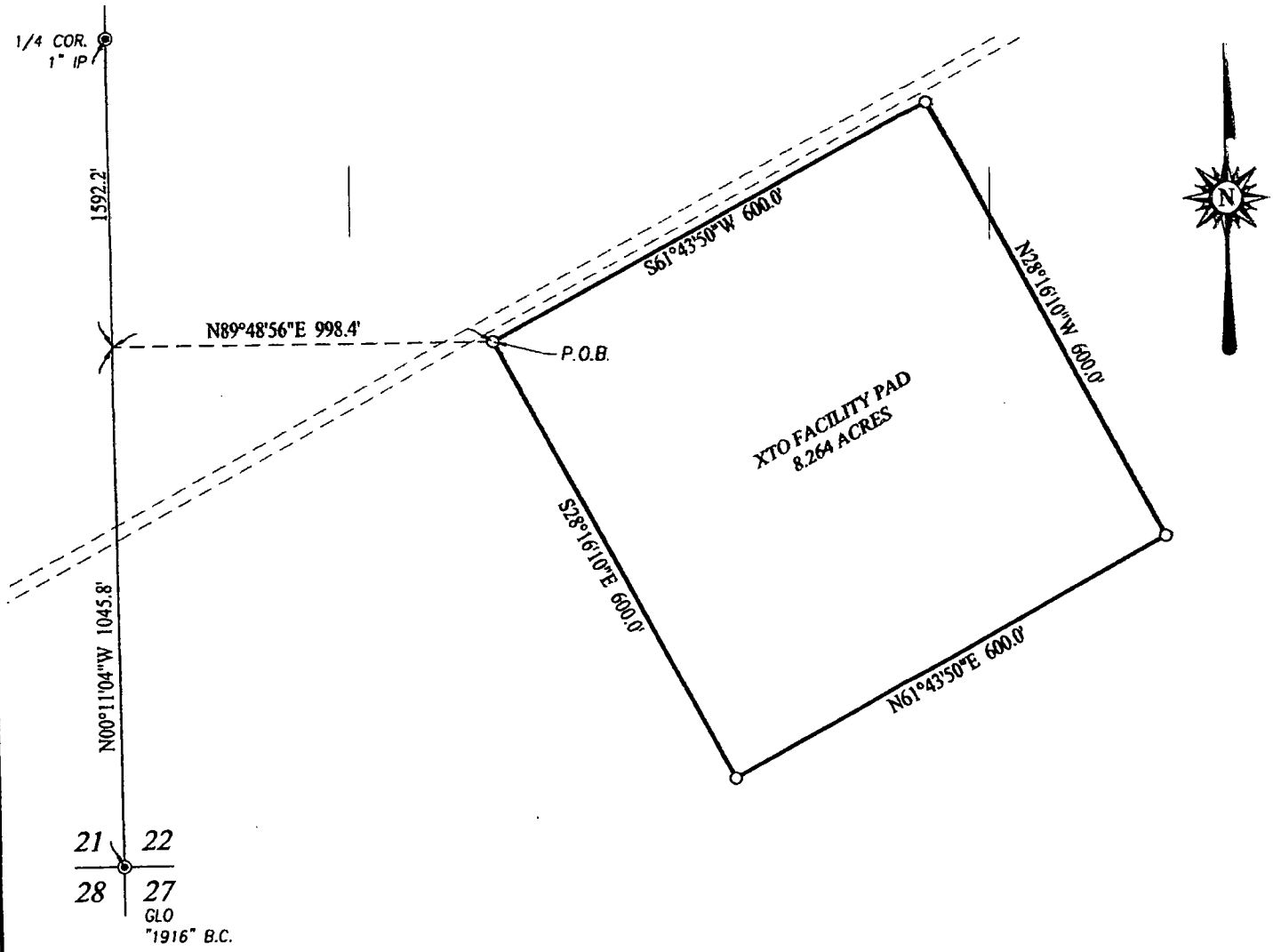
2) LATITUDE AND LONGITUDE VALUES SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN DATUM 1983 (NAD83).

XTO ENERGY

SURVEY FOR AN ELECTRIC LINE TO THE BUBBLES 22 15 FEDERAL #1H THROUGH #8H WELLS AND BUTTERCUP 27 34 3 FEDERAL #1H THROUGH #8H WELLS CROSSING SECTIONS 21, 22, 28 & 33, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 8/2/16	CAD Date: 8/23/16	Drawn By: ACK
W.O. No.: 16110564	Rev: .	Rel. W.O.:	Sheet 1 of 1

© Angelica\2016\XTO ENERGY\Easements\16110564 Elec Ln to the Buttercup & Bubble Wells in Sec.22, T19S, R30E



LEGEND

◉ DENOTES FOUND CORNER AS NOTED

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON 3239 Ronald J. Eidson

DATE: 8/16/2016

DESCRIPTION:

A PROPOSED FACILITY PAD SITUATED IN THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF THE FACILITY PAD WHICH LIES N00°11'04"W 1045.8 FEET AND N89°48'56"E 998.4 FEET FROM THE SOUTHWEST CORNER OF SAID SECTION 22; THEN S28°16'10"E 600.0 FEET; THEN N61°43'50"E 600.0 FEET; THEN N28°16'10"W 600.0 FEET; THEN S61°43'50"W 600.0 FEET TO THE POINT OF BEGINNING AND CONTAINING 8.264 ACRES MORE OR LESS.

200 0 200 400 Feet

Scale: 1"=200'

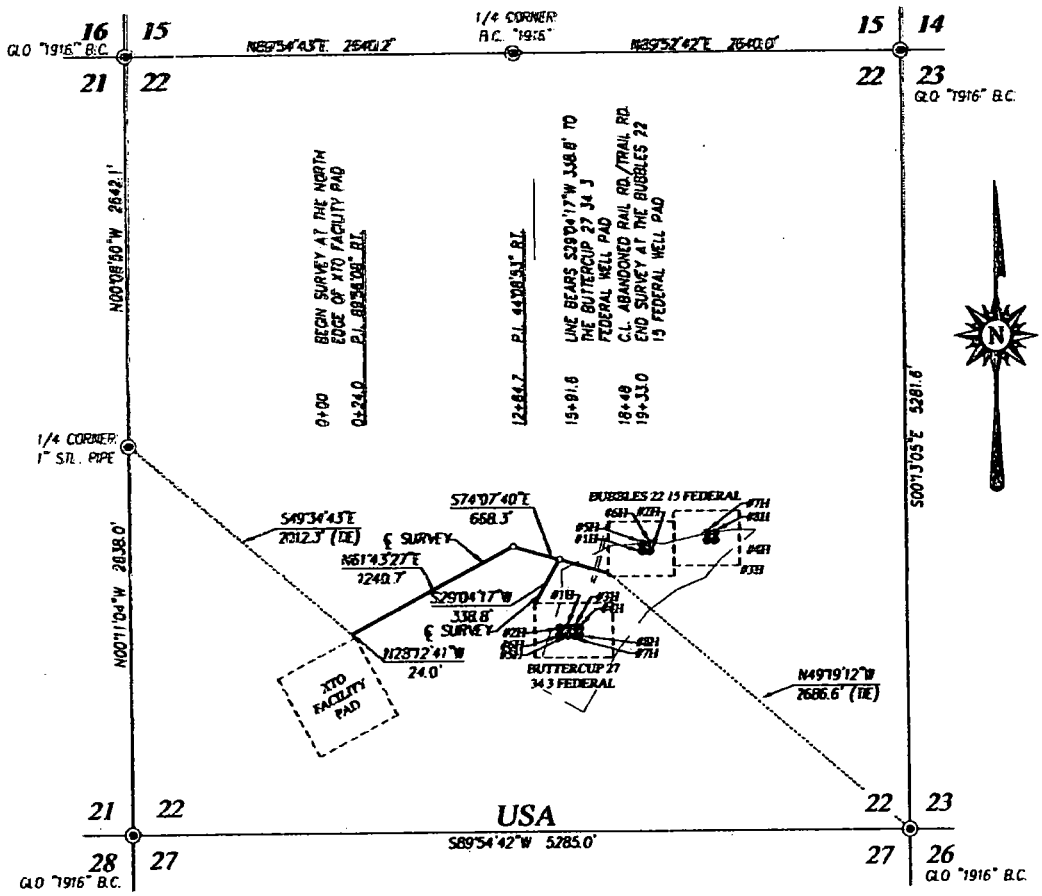
XTO ENERGY

SURVEY FOR A FACILITY PAD
SITUATED IN THE SW/4 OF SECTION 22,
TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M.
EDDY COUNTY, NEW MEXICO

Survey Date: 7/29/16	CAD Date: 8/4/16	Drawn By: LSL
W.O. No.: 16110562	Rev:	Rel. W.O.:	Sheet 1 of 1

PROFESSIONAL SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

© DRAFTING\Lorenzo\2016\XTO ENERGY\TRACT\16110562 buttercup facility pad



DESCRIPTION

SURVEY FOR A STRIP OF LAND 30.0 FEET WIDE AND 2271.8 FEET OR 0.430 MILES IN LENGTH CROSSING USA LAND IN SECTION 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON Ronald J. Eidson

DATE: 8/25/2016

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 FEET

Scale: 1" = 1000'

XTO ENERGY

SURVEY FOR A FLOW LINE TO THE BUTTERCUP 27 34 3 FEDERAL WELL PAD & BUBBLES 22 15 FEDERAL WELL PAD CROSSING SECTION 22, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 8/1/16	CAD Date: 8/24/16		Drawn By: ACK
W.O. No.: 16110565	Rev: .	Rel. W.O.:	Sheet 1 of 1

PROVIDING SURVEYING SERVICES SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
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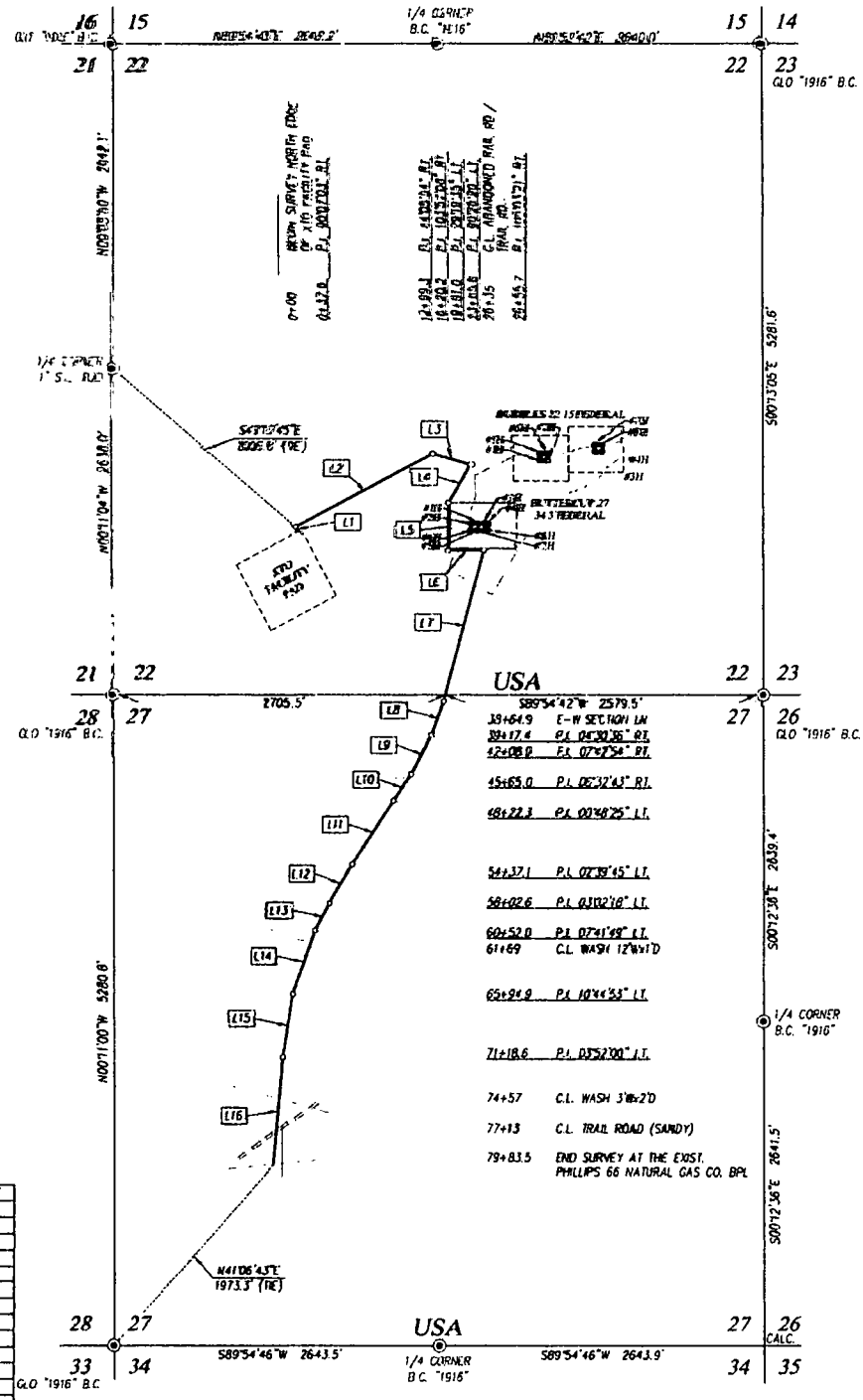
TBPLS# 10021000

©Anjelico\2016\XTO ENERGY\Easements\16110565 Flow Line to connect the Buttercup & Bubbles Wells in Sec22, T19S, R30E



LINE	BEARING	DISTANCE
L1	N28°23'34"W	37.9'
L2	N61°43'29"E	1261.4'
L3	S74°10'37"E	320.9'
L4	S29°46'31"W	360.8'
L5	S00°26'56"W	384.6'
L6	S89°59'33"E	290.1'
L7	S15°03'48"W	1261.7'
L8	S19°34'24"W	290.6'
L9	S27°17'18"W	357.0'
L10	S33°50'01"W	257.3'
L11	S33°01'56"W	614.8'
L12	S30°21'51"W	365.4'
L13	S27°19'33"W	249.4'
L14	S19°37'44"W	542.9'
L15	S08°52'51"W	523.7'
L16	S05°00'51"W	864.9'

NOTE

BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE SURFACE VALUES.

I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

RONALD J. EIDSON

DATE: 8/24/2016

PROVIDING SURVEYING SERVICES SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

DESCRIPTION

SURVEY FOR A STRIP OF LAND 30.0 FEET WIDE AND 7983.5 FEET OR 1.512 MILES IN LENGTH CROSSING USA LAND IN SECTIONS 22 & 27, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO, AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

LEGEND

◉ DENOTES FOUND CORNER AS NOTED

1000 0 1000 2000 FEET

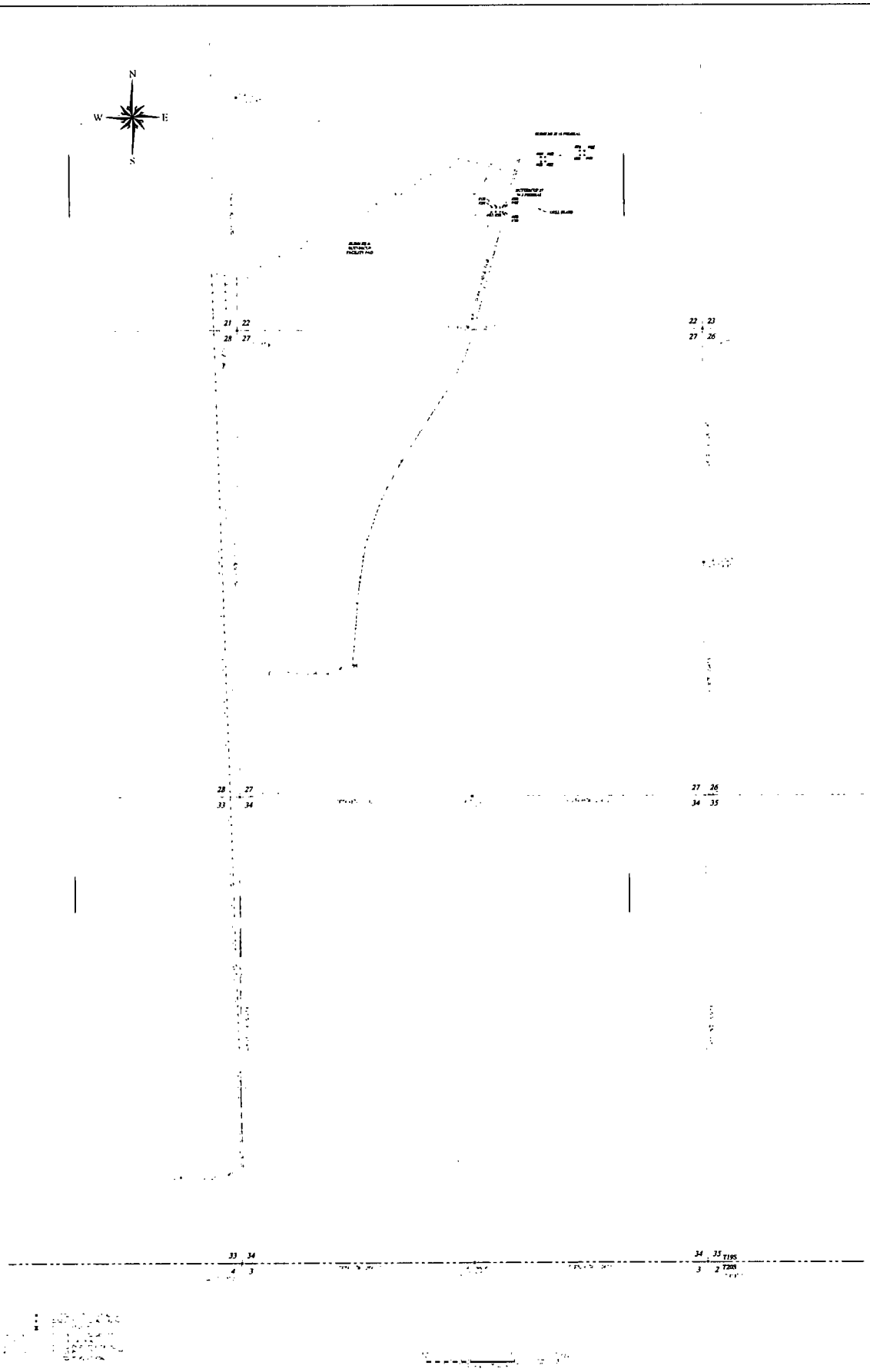
Scale: 1"=1000'

XTO ENERGY

SURVEY FOR A GAS SALE PIPELINE TO THE PHILLIPS 66 NATURAL GAS CO. BPL CROSSING SECTIONS 22 & 27, TOWNSHIP 19 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 8/9-11/16	CAD Date: 8/24/16	Drawn By: ACK
W.O. No.: 16110566	Rev: .	Rel. W.O.:	Sheet 1 of 1

© Angifico\2016\XTO ENERGY\Easements\16110566 Gas Sales PL to the Phillips 66 Natural Gas Pipeline in Secs 22&27, T19S, R30E



Survey Date:	Work Order No.:
CAD Drafter & Date:	Revised Date:
Scale: One Inch = Five Hundred Feet	

JWSC File No. E-3488

XTO ENERGY

LEASE FLOW MAP FOR THE BUBBLES 22 15 FEDERAL #1H THROUGH #8H WELLS
AND BUTTERCUP 27 34 3 FEDERAL #1H THROUGH #8H WELLS CROSSING
SECTIONS 21, 22, 27, 28, 33 & 34, TOWNSHIP 19 SOUTH, RANGE 30 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, NEW MEXICO 88240
(575) 393-3117 www.jwsc.biz
TBPLS# 10021000

Stephanie Rabadue
Regulatory Analyst
XTO Energy Inc.
500 W. Illinois St Ste 100
Midland, Texas 79701
(432) 620-6714
stephanie_rabadue@xtoenergy.com

January 3, 2017

Bureau of Land Management
Carlsbad Field Office
620 E. Greene Street
Carlsbad, NM 88220

RE: **Operating Agreement/Rights for Bubbles 22 15 Federal #1H, 2H, 3H, 4H, 5H, 6H, 7H, 8H**

To Whom It May Concern:

XTO Energy, Inc. is pursuing a surface and sub-surface easement with the appropriate lessee to use the lease area and to spud the above referenced wells. No construction will begin or wells will be drilled without a legal agreement denoting consent of all proposed activities described within the filed Applications for Permit to Drill.

Sincerely,

Stephanie Rabadue

Stephanie Rabadue
Regulatory Analyst
XTO Energy, Inc

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Injection well name:

Assigned injection well API number?

Injection well API number:

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Info Data Report

07/25/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: UTB000138

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE
CARLSBAD, NEW MEXICO 88220

In Reply
Refer To:
3160 (NMP0201)
NMNM-006764
NMNM-243816

Memorandum

To: Manager, Carlsbad Field Office (NMP0201)

From: Division of Land and Minerals (NMP0220)

Subject: Application for Permit to Drill

Applicant: **XTO Energy Inc.**
Lease: NMNM – 006764
NMNM -- 243816

Bubbles 22-15 Federal 1H:
Surface Hole Location: 1900' FSL & 1800' FEL, Section 22, T. 19 S., R. 30 E.
Bottom Hole Location: 200' FNL & 400' FWL, Section 15, T. 19 S., R. 30 E.
TVD: 8,478'; MD: 17,219'; Producing Formation: 2nd Bone Spring

Bubbles 22-15 Federal 2H:
Surface Hole Location: 1900' FSL & 1750' FEL, Section 22, T. 19 S., R. 30 E.
Bottom Hole Location: 200' FNL & 1820' FWL, Section 15, T. 19 S., R. 30 E.
TVD: 8,491'; MD: 16,725'; Producing Formation: 2nd Bone Spring

Bubbles 22-15 Federal 3H:
Surface Hole Location: 1970' FSL & 1355' FEL, Section 22, T. 19 S., R. 30 E.
Bottom Hole Location: 200' FNL & 1820' FEL, Section 15, T. 19 S., R. 30 E.
TVD: 8,498'; MD: 16,528'; Producing Formation: 2nd Bone Spring

Bubbles 22-15 Federal 4H:
Surface Hole Location: 1970' FSL & 1305' FEL, Section 22, T. 19 S., R. 30 E.
Bottom Hole Location: 200' FNL & 400' FEL, Section 15, T. 19 S., R. 30 E.
TVD: 8,515'; MD: 16,300'; Producing Formation: 2nd Bone Spring

Bubbles 22-15 Federal 5H:
Surface Hole Location: 1950' FSL & 1800' FEL, Section 22, T. 19 S., R. 30 E.
Bottom Hole Location: 200' FNL & 660' FWL, Section 15, T. 19 S., R. 30 E.
TVD: 7,485'; MD: 16,312'; Producing Formation: 1st Bone Spring

Bubbles 22-15 Federal 6H:
Surface Hole Location: 1950' FSL & 1750' FEL, Section 22, T. 19 S., R. 30 E.
Bottom Hole Location: 220' FNL & 1980' FWL, Section 15, T. 19 S., R. 30 E.
TVD: 7,499'; MD: 15,818'; Producing Formation: 1st Bone Spring

Bubbles 22-15 Federal 7H:

Surface Hole Location: 2020' FSL & 1355' FEL, Section 22, T. 19 S., R. 30 E.
Bottom Hole Location: 200' FNL & 1980' FEL, Section 15, T. 19 S., R. 30 E.
TVD: 7,519'; MD: 15,613'; Producing Formation: 1st Bone Spring

Bubbles 22-15 Federal 8H:

Surface Hole Location: 2020' FSL & 1305' FEL, Section 22, T. 19 S., R. 30 E.
Bottom Hole Location: 200' FNL & 1305' FEL, Section 15, T. 19 S., R. 30 E.
TVD: 7,540'; MD: 15,578'; Producing Formation: 1st Bone Spring

---

Approval Recommendation

Objective

The APD was evaluated with respect to the following lease stipulations as stated in the Secretary's 2012 Potash Order.

1. Drilling for oil and gas shall be permitted only in the event that the lessee establishes to the satisfaction of the authorized officer, Bureau of Land Management, that such will not interfere with the mining and recovery of potash deposits (Section III A 1).
2. No Wells shall be drilled for oil or gas at a location which, in the opinion of the authorized officer, would result in undue waste of potash deposits or constitute a hazard to or unduly interfere with mining operations being conducted for the extraction of potash deposits. (Section III A 2)
3. When the authorized officer, determines that unitization is necessary for orderly oil and gas development and proper protection of potash deposits, no well shall be drilled for oil or gas except pursuant to a unit plan approved by the authorized officer. (Section III A 3)
4. The drilling or the abandonment of any well on said lease shall be in accordance with applicable oil and gas operating regulations, including such requirements as the authorized officer may prescribe as necessary to prevent the infiltration of oil, gas or water into formations containing potash deposits or into mines or workings being utilized in the extraction of such deposits. (Section III A 4)
5. In taking any action under Part A, Items 1, 2, 3, and 4 of this Order, the authorized officer shall take into consideration the applicable rules and regulations of the Oil Conservation Division of the State of New Mexico.

New Objectives

1. It is the intent of the Department of the Interior to administer oil and gas operations through the Designated Potash Area in a manner which promotes safe, orderly co-development of oil, gas, and potash resources. It is the policy of the Department of the Interior to deny approval of most applications for permits to drill oil and gas wells from surface locations within the Designated Potash Area. Three exceptions to this policy will be permitted if the drilling will occur under the following conditions from:

    a. A Drilling Island associated with a Development Area established under this Order or a Drilling Island established under a prior Order;
    b. A Barren Area and the Authorized Officer determines that such operations will not adversely affect active or planned potash mining operations in the immediate vicinity of the proposed drill-site; or
    c. A Drilling Island, not covered by (a) above, or single well site established under this Order by the approval and in the sole discretion of the Authorized Officer, provided

that such site was jointly recommended to the Authorized Officer by the oil and gas lessee(s) and the nearest potash lessee(s).

2. In taking any action under Section 6.e. of this Order, the Authorized Officer will take into consideration the applicable rules and regulations of the NMOCD.
3. The Authorized Officer will make full use of his/her authorities wherever necessary or advisable to require unitization and/or communitization pursuant to the regulations in 43CFR Subparts 3105 and 3180.
4. In implementing this Order, the BLM is authorized to exercise its discretion through any and all appropriate means, including rulemaking, notices to lessees, and orders of the Authorized Officer.

Chronology and Data

The APD was evaluated using all the pertinent information and data available at the date of the application. The information and data pertinent to this decision are:

1. The area was included within the Secretary's Potash Area on February 25, 1939.
2. Oil and Gas Leases NMNM-006764 and NMNM-243816 were issued on August 1, 1952 and March 1, 1962 respectively.
3. The Application for Permit to Drill (APD) was received on November 29, 2016.
4. The proposed well will be horizontally drilled with a total vertical depth of 7,540 feet.
5. The proposed well is not within the potash enclave.
6. The proposed well is an established drill island.
7. The proposed well is leased for potassium.
8. The proposed well is not within one mile of a Three Year Mine Plan.
9. The proposed well is within one mile of open mine workings
10. The proposed well does not interfere with access to potash ore deposits.
11. The proposed well is in an Approved Development Area.
12. The proposed well is not in a known barren area.
13. The proposed well casing requirements will have three casing strings cemented to surface.
14. The proposed location is a Drilling Island associated with a Development Area established under this Order.

Rationale:

Buffer Zones Established by the BLM - Buffer zones of ¼ mile for oil wells and ½ mile for gas wells have been established in the Secretary's Potash Order of 2012. These Buffer Zones will stay in effect until such time as revised distances are adopted by the BLM Director or other BLM official, as delegated. The Director will base revised Buffer Zones on science, engineering, and new technology and will consider comments and reports from the Joint Industry Technical Committee and other interested parties in adopting any revisions.

The proposed well is not within an established oil and gas buffer zone.

Base of Second Bone Spring Sandstone General – The BLM differentiates between shallow and deep wells with respect to the base of the Second Bone Spring Sandstone of the Leonardian Group, correlated from existing wells, for the respective area within the Secretary's Potash Area. The BLM generally defines shallow and deep zones for oil and gas as:

Shallow Zone - all formations above the base of the Second Bone Spring Sandstone as defined by the BLM geological report for the respective area within the Secretary's Potash Area.

Deep Zone - all formations below the base of the Second Bone Spring Sandstone as defined by the BLM geological report for the respective area within the Secretary's Potash Area.

The BLM, at its discretion, uses the base of the Second Bone Spring Sandstone of the Leonardian Group as a liberally defined demarcation between shallow oil wells and deep gas wells. The Second Bone Spring Sandstone is often produced for oil at or very near the bottom of the formation. The BLM allows wells to be drilled 50 feet below the base of the Second Bone Spring Sandstone to accommodate logging the zones at the base of the formation, and still be classified as shallow oil wells.

The proposed location is to be horizontally drilled to a total vertical depth of 7,540 feet. The base of the Second Bone Spring Sandstone is given in the BLM's geological report as 8,680 feet. The proposed well is 1,140 feet within the base of the Second Bone Spring Sandstone and is therefore classified as "shallow" by BLM definitions.

Development Areas, Drill Islands & Three Year Mine Plans: - The Secretary's 2012 Order allows for the establishment of Development Areas and Drilling Islands within Development Areas. A Development Area established by the BLM within the Designated Potash Area in consideration of appropriate oil and gas technology such that wells can be drilled from a Drilling Island capable of effectively extracting oil and gas resources while managing the impact on potash resources. Each Development Area will typically have only one Drilling Island, subject to narrow exceptions based on specific facts and circumstances. All new oil and gas wells that penetrate the potash formations within a Development Area will be drilled from the Drilling Island (s) associated with that Development Area. The boundaries of each Development Area will be determined in conformity with Section 6.e. (2).

The Approved Mojo Jojo Development Area comprises all of Section 15 and north half of Section 22 in the northern development area and all of Section 34 and south half of Section 27 in southern development area in T19S R30E (See Attached Map). The Approved Development Area has been designated as DA-2017-005 on February 13, 2017.

Drilling Islands usually associated with and within a Development Area, from which all new drilling of vertical, directional, or horizontal wells that newly penetrate the potash formations can be performed in order to support the development of oil and gas resources. The size and shape of a Drilling Island defines the area where wellbore penetrations of the potash formations will be allowed; this area is to be small as practical to allow effective oil and gas development while managing impacts on potash.

No islands shall be established within one mile of any area where approved mining operations will be conducted within three years. Three-year mine plans are filed to make this determination.

The Mojo Jojo Drill Island will be established with the approval of this APD (See Attached Map).

A three-year mine plan has been filed by Intrepid for CY 2018. Intrepid's HB Solution Mine Three Year Mine Plan is approximately 1.2 miles southwest of proposed location.

Open Mine Workings - The proposed location is within one mile of open mine workings. Intrepid's HB Solution mine workings are located approximately .26 miles south of the proposed location.

In areas where there are no mineable ore reserves, or the reserves have been completely mined and no mining is being conducted in that mine, drilling is allowed no closer to open mine workings than ½ mile for deep wells and ¼ mile for shallow wells.

Access to Measured Potash Ore Reserves - The proposed location is not in an area which if drilled will limit access to currently defined Measured Ore reserves.

Measured Potash Ore Reserves - The proposed location is not within currently defined Measured Ore reserves.

In the area of the proposed location the First Ore Zone is defined by the core holes listed below.

Core-Hole	1st Ore Zone Thickness(ft)	%K_2O as Sylvite
P-55	2.33	32.16
P-42	4.67	31.28
P-128	Minor Mineralization	Minor Mineralization
P-43	Barren	Barren

The above information is considered confidential and shall not be disclosed

Protests or Objections – The proposed location has not been protested by an affected party.

Casing Requirements- The Authorized Officer shall take into consideration the applicable rules and regulations of the Oil Conservation Division of the State of New Mexico as necessary to prevent the infiltration of oil, gas or water into formations containing potash deposits or into mines or workings being utilized in the extraction of such deposits.

The Casing and Cementing requirements in the Secretary's Potash Area are delineated by whether the proposed well is inside or outside of the R-111-P boundary.

Secretary's Potash—Casing design is for three strings of casing. The first two strings, which protect the fresh water and the salt formation, are cemented to surface. The intermediate casing may be set deeper than the base of the salt. The requirement for the third casing string is that it tie-back a minimum of 500 feet into the next larger casing string.

R-111-P—Casing design is for three or four strings of casing. With three casing strings, all will be cemented to surface. With four casing strings, the fourth casing string will have a tie-back of at least 500 feet into the next larger casing. The first casing protects surface water; the second casing is a salt string and is set within 100 to 600 feet of the salt base. The third and possibly fourth casings are production casings.

The proposed well is within the R-111-P and will require R-111-P casing design. The surface casing will be set into the first competent formation and above the salt and cemented circulated to surface. The intermediate casing will be set to protect the salt formation with cement circulated to surface.

Determination

Considering the above analysis, it has been determined that the drilling of this well satisfies all conditions of the Secretary's 2012 Potash Order because it is a Drilling Island associated with a Development Area established under this Order. The drilling of the proposed well is in accordance with applicable oil and gas operating regulations, including such requirements as necessary to prevent the infiltration of oil, gas or water into formations containing potash deposits or into mines or workings being utilized in the extraction of such deposits. Drilling at this location will not result in undue waste of potash deposits, nor will it constitute a hazard to or unduly interfere with mining operations being conducted for the extraction of potash deposits. Unitization is not applicable because the adjacent lease is open to drilling.

Recommendation of Bubbles 22 15 Federal 8H

The APD was evaluated with consideration of the 2012 Potash Order and is recommended for **approval** at the requested location. A well drilled for oil and gas at the proposed location will not result in the undue waste of potash deposits, and will not constitute a hazard to or unduly interfere with mining operations being conducted for the extraction of potash deposits.

See Attachments:

Date: July 16, 2018

James S. Rutley
Geologist
Carlsbad Field Office

Concurrence of Recommendation of Bubbles 22 15 Federal 8H

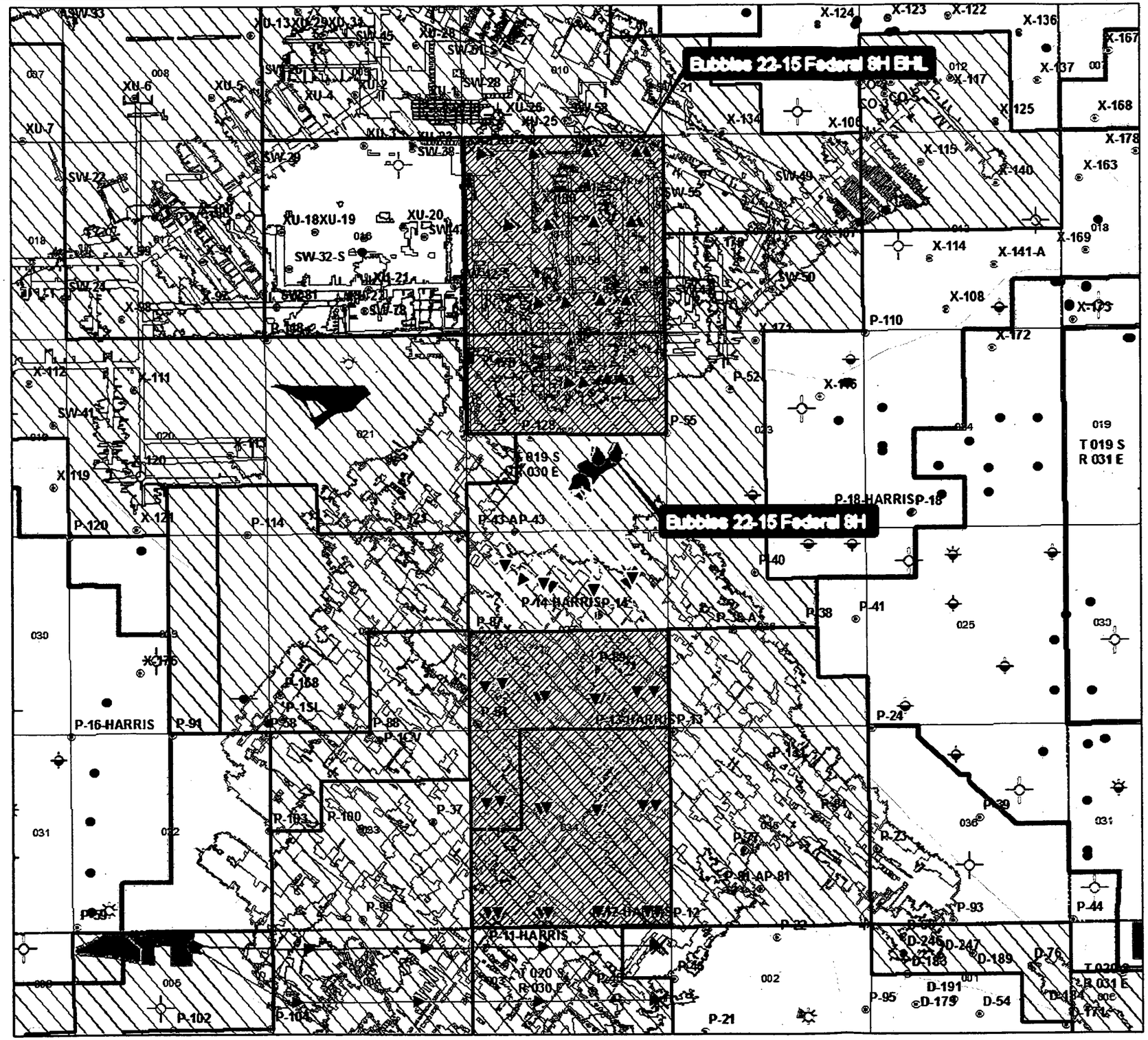
Date: 07/16/2018

Cody Layton
Acting Field Manager (Lands & Minerals)
Carlsbad Field Office

Bubb es 22-15 Federa 8H

XTO Energy Inc.

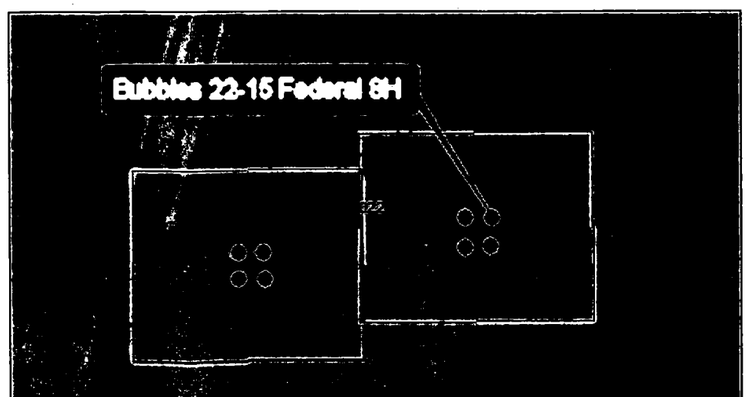
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by BLM. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.
Map created 06/08/2018



Legend

- Approved Mojo Jojo DA-2017-005
- **Drill Islands**
  - Approved, All Depths
  - Approved, Shallow
  - Nominated, All Depths
  - Nominated, Shallow
  - Core Holes
  - Potash Leases
  - Mine Workings
  - 2012 Secretary Potash Area
  - KPLA
  - Measured
  - Indicated
  - Inferred
- **IHS US Wells**
  - Oil
  - Gas
  - Oil & Gas
  - Temp Abandoned- Oil
  - Temp Abandoned- Gas
  - Dry Hole
  - Dry & Abandoned- Gas
  - Dry & Abandoned- Oil
  - Dry & Abandoned- Oil & Gas
  - Injection
  - Injection- Water

0 0.225 0.45 0.9 1.35 1.8 Miles



SHL: T19S, R30E, Section 22, 2020' FSL & 1305' FEL
BHL: T19S, R30E, Section 15, 200' FNL & 1305' FEL
TVD: 7,540' Formation: 1BSS