Form 3160-3
(March 2012)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM 93771

6. If Indian, Allotee or Tribe Name:

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

1a. Type of work: ☑ DRILL ☐ REENTER

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

8. Lease Name and Well No.: VIRGO 24/23 B2AD FED COM 1H 320081

2. Name of Operator: MEWBOURNE OIL COMPANY 14744

9. API Well No.: 30-015-44579

3a. Address: PO Box 5270 Hobbs NM 88240

3b. Phone No. *(include area code)*: (575)393-5905

10. Field and Pool, or Exploratory: SHUGART NORTH BONE SPRING / BO 56405

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface: NENE / 450 FNL / 185 FEL / LAT 32.7389224 / LONG -103.9174898

At proposed prod. zone: NWNW / 450 FNL / 330 FWL / LAT 32.7389342 / LONG -103.9501394

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 24 / T18S / R30E / NMP

14. Distance in miles and direction from nearest town or post office*: 28 miles

12. County or Parish: EDDY

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 185 feet

16. No. of acres in lease: 320

17. Spacing Unit dedicated to this well: 320

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 80 feet

19. Proposed Depth: 8546 feet / 18536 feet

20. BLM/BIA Bond No. on file: FED: NM1693

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3632 feet

22. Approximate date work will start*: 03/07/2017

23. Estimated duration: 60 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	Name *(Printed/Typed)*	Date
(Electronic Submission)	Bradley Bishop / Ph: (575)393-5905	11/18/2016

Title: Regulatory

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	10/20/2017

Title	Office
Supervisor Multiple Resources	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.

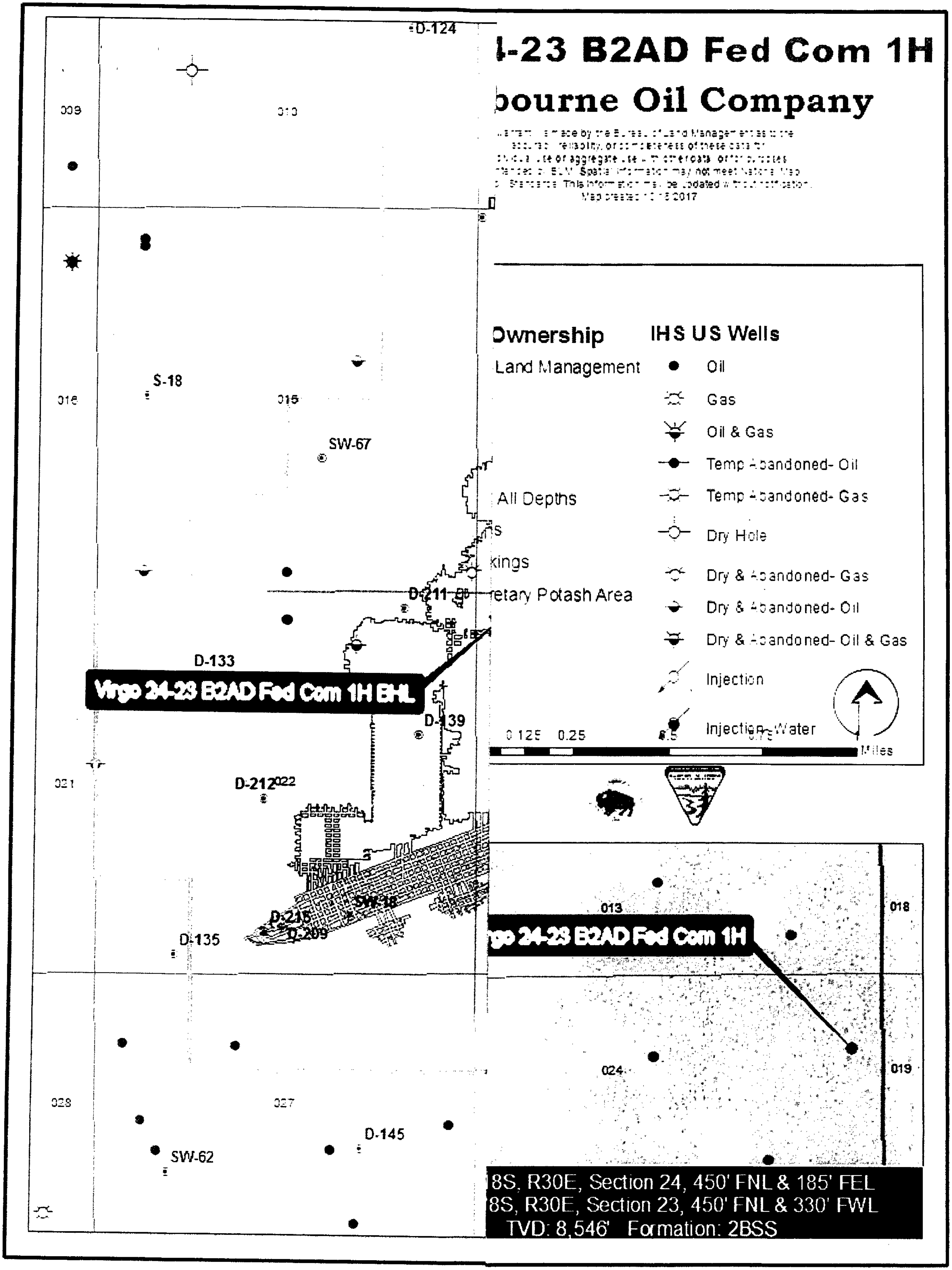
(Continued on page 2)

*(Instructions on page 2)

APPROVED WITH CONDITIONS

Approval Date: 10/20/2017

RWP 12-01-2017



4-23 B2AD Fed Com 1H
bourne Oil Company
Ownership
Land Management
All Depths
ns
kings
etary Potash Area
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
0.125 0.25 0.5
Miles
D-124
009
010
S-18
016
015
SW-67
D-211
D-133
Virgo 24-23 B2AD Fed Com 1H BHL
D-139
021
D-212
022
SW-18
D-215
D-209
D-135
028
027
D-145
SW-62
013
018
rgo 24-23 B2AD Fed Com 1H
024
019
8S, R30E, Section 24, 450' FNL & 185' FEL
8S, R30E, Section 23, 450' FNL & 330' FWL
TVD: 8,546' Formation: 2BSS

that such operations will not adversely affect active or planned potash mining operations in the immediate vicinity of the proposed drill-site. 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 Virgo 24-23 B2AD Fed Com 1H

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: OCTOBER 18, 2017

James S. Rutley
Geologist
Carlsbad Field Office

Concurrence of Recommendation of Virgo 24-23 Fed Com 1H

Date: 10/20/17

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

A three-year mine plan has been filed by Intrepid for CY 2017. Intrepid's Three Year Mine Plan is approximately 7.7 miles southwest of proposed location.

Open Mine Workings - The proposed location is not within one mile of open mine workings. Intrepid's mine workings are located approximately 1.2 miles east 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_20 as Sylvite
SW-68	Barren	Barren
D-144	Barren	Barren
SW-7	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 not within the R-111-P and will not 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 Barren Area and the Authorized Officer determines

14. The proposed location is 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.

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 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 8,546 feet. The base of the Second Bone Spring Sandstone is given in the BLM's geological report as 8,712 feet. The proposed well is 142 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).

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.

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. Oil and Gas Lease NMNM-93771, NMLC-28990A, and NMNM-14331 were issued on September 1, 1956, December 28, 1939 and February 1, 1955 respectively.
2. The area was included within the Secretary's Potash Area on October 18, 1951.
3. The Application for Permit to Drill (APD) was received on December 9, 2016.
4. The proposed well will be horizontally drilled with a total vertical depth of 8,546 feet.
5. The proposed well is not within the potash enclave.
6. The proposed well is not an established drill island.
7. The proposed well is not leased for potassium.
8. The proposed well is not within one mile of a Three Year Mine Plan.
9. The proposed well is not 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 not in a Designated Development Area.
12. The proposed well is in a known barren area.
13. The proposed well casing requirements will have two casing strings cemented to surface.

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

In Reply
Refer To:
3160 (NMP0201)
NMNM-93771
NMLC-28990A
NMNM-16809

Memorandum

To: Manager, Carlsbad Field Office (NMP0201)

From: Division of Land and Minerals (NMP0220)

Subject: Application for Permit to Drill

Applicant:	**Mewbourne Oil Company**
Lease:	NMNM – 93771 NMLC-28990A NMNM – 16809
Well Name:	**Virgo 24-23 B2AD Fed Com 1H**
Surface Location:	450' FNL & 185' FEL T18S, R30E: Sec. 24 NMNM - 93771
Bottom Hole Location:	450' FNL & 330' FWL T18S, R30E: Sec. 23 NMNM - 16809
Well Type:	Oil and Gas Well; TVD: 8,546'; MD: 18,536'
Producing Formation:	2nd 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

OCD ARTESIA 16-649

AFMSS

Application for Permit to Drill

U.S. Department of the Interior
Bureau of Land Management

APD Package Report

Date Printed: 11/16/2017 07:30 AM

APD ID: 10400002823	Well Status: AAPD
APD Received Date: 11/18/2016 07:20 AM	Well Name: VIRGO 24/23 B2AD FED CON
Operator: MEWBOURNE OIL COMPANY	Well Number: 1H

APD Package Report Contents

SECRETARY'S POTASH

- Form 3160-3

- Operator Certification Report

- Application Report
- Application Attachments
  -- Operator Letter of Designation: 1 file(s)
  -- Well Plat: 1 file(s)

NM OIL CONSERVATION
ARTESIA DISTRICT
NOV 22 2017
RECEIVED

- Drilling Plan Report
- Drilling Plan Attachments
  -- Blowout Prevention Choke Diagram Attachment: 3 file(s)
  -- Blowout Prevention BOP Diagram Attachment: 3 file(s)
  -- Casing Taperd String Specs: 3 file(s)
  -- Casing Design Assumptions and Worksheet(s): 4 file(s)
  -- Hydrogen sulfide drilling operations plan: 1 file(s)
  -- Proposed horizontal/directional/multi-lateral plan submission: 2 file(s)
  -- Other Variances: 1 file(s)

- SUPO Report
- SUPO Attachments
  -- Existing Road Map: 1 file(s)
  -- New Road Map: 1 file(s)
  -- Attach Well map: 1 file(s)
  -- Production Facilities map: 1 file(s)
  -- Water source and transportation map: 1 file(s)
  -- Construction Materials source location attachment: 1 file(s)
  -- Well Site Layout Diagram: 1 file(s)

- PWD Report
- PWD Attachments
  -- None

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Mewbourne Oil Co
LEASE NO.:	NM93771
WELL NAME & NO.:	Virgo 24 23 B2AD Fed Com – 1H
SURFACE HOLE FOOTAGE:	450'/FNL & 185'/FEL
BOTTOM HOLE FOOTAGE	450'/FNL & 330'/FWL, sec. 23
LOCATION:	Sec. 24, T. 18 S, R. 30 E
COUNTY:	Eddy County

Potash	○ None	◉ Secretary	○ R-111-P
Cave Karst Potential	○ Low	○ Medium	◉ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	◉ Conventional	○ Multibowl	
Other	☐4 String Area	☐Capitan Reef	☐WIPP

A. Hydrogen Sulfide

1. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **13 3/8** inch surface casing shall be set at approximately **610 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface.

   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 will be a minimum of **8 hours/24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

   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.

Approval Date: 10/20/2017

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

   Cement to surface. If cement does not circulate see B.1.a, c-d above. **Excess calculates to 24% - Additional cement may be required.**

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

3. The minimum required fill of cement behind the **7** inch production casing is:

   Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Excess calculates to -32% - Additional cement may be required.**

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

   - Cement should tie-back at least 100 feet into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi.

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

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 7 production casing shoe shall be 3000 (3M) psi.

ZS 090717

Approval Date: 10/20/2017

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Mewbourne Oil Co
LEASE NO.:	NM93771
WELL NAME & NO.:	Virgo 24 23 B2AD Fed Com - 1H
SURFACE HOLE FOOTAGE:	450'/N & 185'/E
BOTTOM HOLE FOOTAGE	450'/N & 330'/W, sec. 23
LOCATION:	Section 24, T. 18 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.

Approval Date: 10/20/2017

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)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Below Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Recreation

Pipelines shall be buried 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. Power poles and associated ground structures (poles, guy wires) will not be placed within 20 feet of recreation trails. Guy wires must be equipped with a sleeve, tape or other industry approved apparatus that is highly visible during the day and reflective at night. Appropriate safety signage will be in place during all phases of the project. Pipelines and power lines will not be placed across open dunes designated for recreation. Upon completion of construction, roads/trails shall be returned to pre-construction condition with no bumps or dips. All vehicle and equipment operators will observe speed limits and practice responsible defensive driving habits.

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.

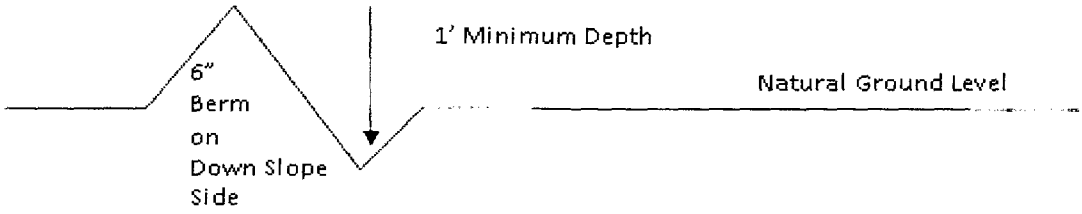
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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.

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

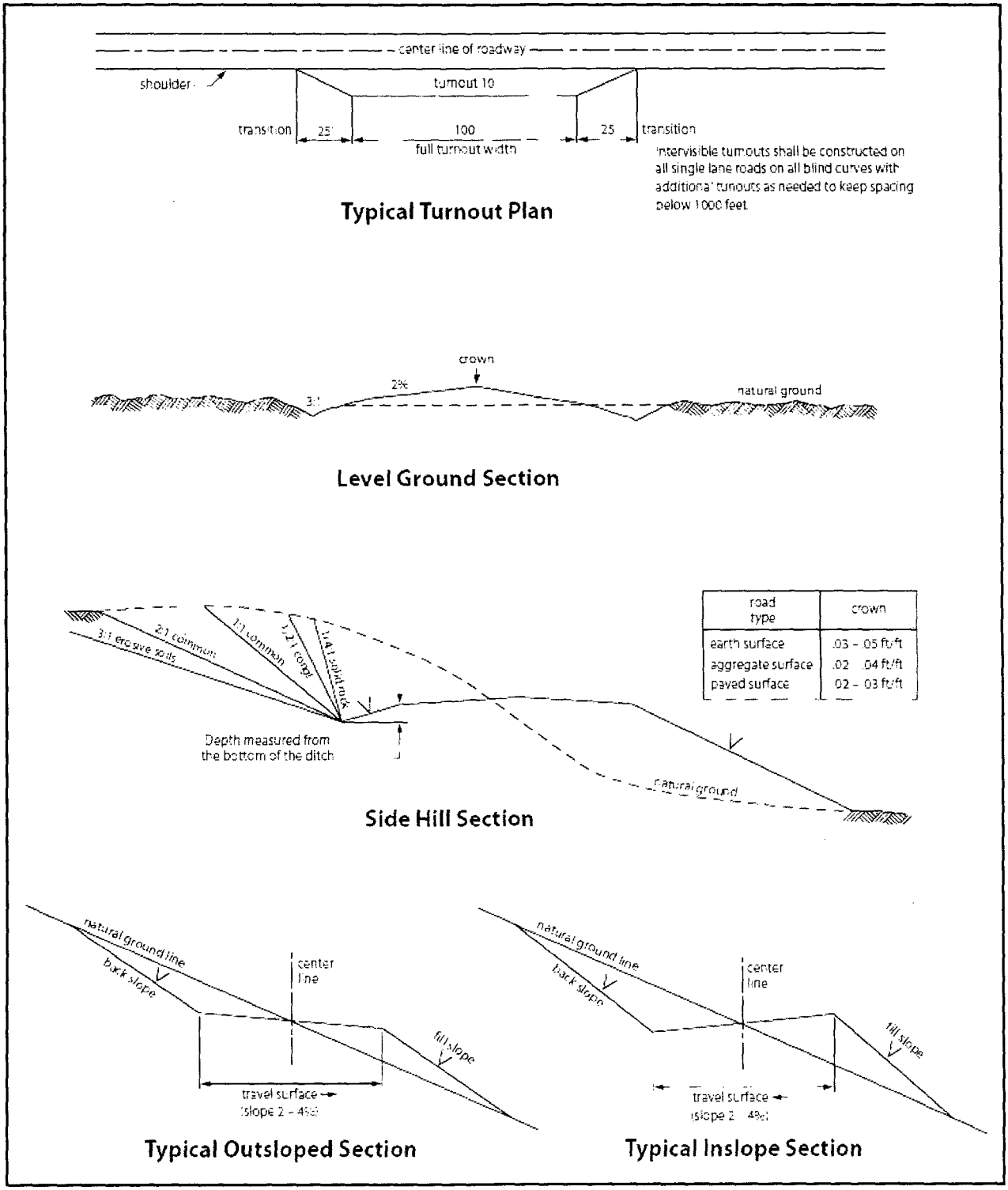


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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).

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).

Below Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

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

AFMSS

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

...tor Certification Data Report

11/16/2017

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: Bradley Bishop

Signed on: 11/16/2016

Title: Regulatory

Street Address: PO Box 5270

City: Hobbs State: NM Zip: 88240

Phone: (575)393-5905

Email address: bbishop@mewbourne.com

Field Representative

Representative Name:

Street Address:

City: State: Zip:

Phone:

Email address:

APD ID: 10400002823
Submission Date: 11/18/2016
Operator Name: MEWBOURNE OIL COMPANY
Well Name: VIRGO 24/23 B2AD FED COM
Well Number: 1H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Section 1 - General

APD ID: 10400002823
Tie to previous NOS?
Submission Date: 11/18/2016
BLM Office: CARLSBAD
User: Bradley Bishop
Title: Regulatory
Federal/Indian APD: FED
Is the first lease penetrated for production Federal or Indian? FED
Lease number: NMNM 93771
Lease Acres: 320
Surface access agreement in place?
Allotted?
Reservation:
Agreement in place? NO
Federal or Indian agreement:
Agreement number:
Agreement name:
Keep application confidential? YES
Permitting Agent? NO
APD Operator: MEWBOURNE OIL COMPANY
Operator letter of designation: Virgo 24-23 B2AD Fed Com 1H_operatorletterofcertification_11-16-2016.pdf

Operator Info

Operator Organization Name: MEWBOURNE OIL COMPANY
Operator Address: PO Box 5270
Zip: 88240
Operator PO Box:
Operator City: Hobbs
State: NM
Operator Phone: (575)393-5905
Operator Internet Address:

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: VIRGO 24/23 B2AD FED COM
Well Number: 1H
Well API Number:
Field/Pool or Exploratory? Field and Pool
Field Name: SHUGART NORTH BONE SPRING
Pool Name: BONE SPRING
Is the proposed well in an area containing other mineral resources? POTASH

Operator Name: MEWBOURNE OIL COMPANY

Well Name: VIRGO 24/23 B2AD FED COM Well Number: 1H

Describe other minerals:

Is the proposed well in a Helium production area? N Use Existing Well Pad? NO New surface disturbance?

Type of Well Pad: SINGLE WELL Multiple Well Pad Name: Number:

Well Class: HORIZONTAL Number of Legs:

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: APPRAISAL

Describe sub-type:

Distance to town: 28 Miles Distance to nearest well: 80 FT Distance to lease line: 185 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: Virgo 24-23 B2AD Fed Com 1H_well plat_11-16-2016.pdf

Well work start Date: 03/07/2017 Duration: 60 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	450	FNL	185	FEL	18S	30E	24	Aliquot NENE	32.7389224	-103.9174898	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 93771	3632	0	0
KOP Leg #1	450	FNL	185	FEL	18S	30E	24	Aliquot NENE	32.7389224	-103.9174898	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 93771	-4592	8224	8224
PPP Leg #1	450	FNL	330	FEL	18S	30E	24	Aliquot NENE	32.7388031	-103.9174556	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 93771	-4934	8606	8566

Operator Name: MEWBOURNE OIL COMPANY

Well Name: VIRGO 24/23 B2AD FED COM Well Number: 1H

	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	450	FNL	330	FWL	18S	30E	23	Aliquot NWNW	32.7389342	-103.9501394	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 016809	-4914	18536	8546
BHL Leg #1	450	FNL	330	FWL	18S	30E	23	Aliquot NWNW	32.7389342	-103.9501394	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 016809	-4914	18536	8546

United States Department of the Interior
Bureau of Land Management
Roswell Field Office
2909 West Second Street
Roswell, New Mexico 88201-1287

Statement Accepting Responsibility for Operations

Operator Name: Mewbourne Oil Company
Street or Box: P.O. Box 5270
City, State: Hobbs, New Mexico
Zip Code: 88241

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted of the leased land or portion thereof, as described below.

Lease Number:	NMNM 93771 NMLC 028990A NMNM 016809
Legal Description of Land:	Section 24, T-18S, R-30E Eddy County, New Mexico. Location @ 450' FNL & 185' FEL.
Formation (if applicable):	Shugart North Bone Spring
Bond Coverage:	$150,000
BLM Bond File:	NM1693 Nationwide, NMB 000919

Approved by:

Authorized Signature: _____

Name: Robin Terrell
Title: District Manager
Date: 11-16-2016

Operator Name: MEWBOURNE OIL COMPANY

Well Name: VIRGO 24/23 B2AD FED COM Well Number: 1H

Pressure Rating (PSI): 3M Rating Depth: 18540

Equipment: Annular, Pipe Ram, Blind Ram

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold.

Testing Procedure: Test Annular to 1500# Test BOPE to 3000#

Choke Diagram Attachment:

Virgo 24-23 B2AD Fed Com 1H_3M BOPE Choke Diagram_11-17-2016.pdf

BOP Diagram Attachment:

Virgo 24-23 B2AD Fed Com 1H_3M BOPE Schematic_11-17-2016.pdf

Pressure Rating (PSI): 3M Rating Depth: 4425

Equipment: Annular

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold.

Testing Procedure: Test to 1500#

Choke Diagram Attachment:

Virgo 24-23 B2AD Fed Com 1H_3M Surface BOPE Choke Diagram_11-17-2016.pdf

BOP Diagram Attachment:

Virgo 24-23 B2AD Fed Com 1H_3M Surface BOPE Schematic_11-17-2016.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	17.5	13.375	NEW	API	N	0	550	0	550	-4914	-5464	550	H-40	48	STC	2.69	6.05	DRY	12.2	DRY	20.49
2	INTERMEDIATE	12.25	9.625	NEW	API	Y	0	4425	0	4425	-4914	-9339	4425	J-55	36	LTC	1.13	1.96	DRY	2.78	DRY	4.54
3	PRODUCTION	8.75	7.0	NEW	API	N	0	8981	0	8701	-4914	-13615	8981	P-110	26	LTC	1.82	2.33	DRY	2.97	DRY	3.55
4	LINER	6.125	4.5	NEW	API	N	8223	18540	8223	8701	-13137	-13615	10317	P-110	13.5	LTC	2.36	2.74	DRY	2.43	DRY	3.03

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Virgo 24-23 B2AD Fed Com 1H_Csg Assumptions_11-17-2016.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Virgo 24-23 B2AD Fed Com 1H_TaperedCsg_11-17-2016.pdf

Casing Design Assumptions and Worksheet(s):

Virgo 24-23 B2AD Fed Com 1H_Csg Assumptions_11-17-2016.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Virgo 24-23 B2AD Fed Com 1H_Csg Assumptions_11-17-2016.pdf

Operator Name: MEWBOURNE OIL COMPANY

Well Name: VIRGO 24/23 B2AD FED COM Well Number: 1H

Casing Attachments

Casing ID: 4 **String Type:** LINER

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Virgo 24-23 B2AD Fed Com 1H_Csg Assumptions_11-17-2016.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	360	240	2.12	12.5	403	100	Class C	Salt, Gel, Extender, LCM
SURFACE	Tail		360	550	200	1.34	14.8	268	100	Class C	Retarder
INTERMEDIATE	Lead		0	3763	720	2.12	12.5	1526	25	Class C	Salt, Gel, Extender, LCM
INTERMEDIATE	Tail		3763	4425	200	1.34	14.8	268	25	Class C	Retarder
PRODUCTION	Lead		3925	6520	235	2.12	12.5	498	25	Class C	Gel, Retarder, Defoamer, Extender
PRODUCTION	Tail		6520	8981	400	1.18	15.6	472	25	Class H	Retarder, Fluid Loss, Defoamer
LINER	Lead		8223	18540	420	2.97	11.2	1247	25	Class C	Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-Settling Agent

Operator Name: MEWBOURNE OIL COMPANY

Well Name: VIRGO 24/23 B2AD FED COM Well Number: 1H

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: Lost circulation material Sweeps Mud scavengers in surface hole

Describe the mud monitoring system utilized: Visual Monitoring

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	550	SPUD MUD	8.6	8.8							
550	4425	SALT SATURATED	10	10							
4425	8223	WATER-BASED MUD	8.6	9.5							
8223	8701	WATER-BASED MUD	8.6	9.7							

Section 6 - Test, Logging, Coring

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

Will run GR/CNL from KOP (8223') to surface
Will run GR (MWD) from KOP (8223') to TD

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

CNL,DS,GR,MWD,MUDLOG

Coring operation description for the well:

None

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4525 Anticipated Surface Pressure: 2640.48

Anticipated Bottom Hole Temperature(F): 140

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Virgo 24-23 B2AD Fed Com 1H_H2S Plan_11-17-2016.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Virgo 24-23 B2AD Fed Com 1H_Dir Plan_11-17-2016.pdf
Virgo 24-23 B2AD Fed Com 1H_Dir Plot_11-17-2016.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Other Variance attachment:

Virgo 24-23 B2AD Fed Com 1H_Flex Line Specs_11-17-2016.pdf

3M BOPE & Closed Loop Equipment Schematic

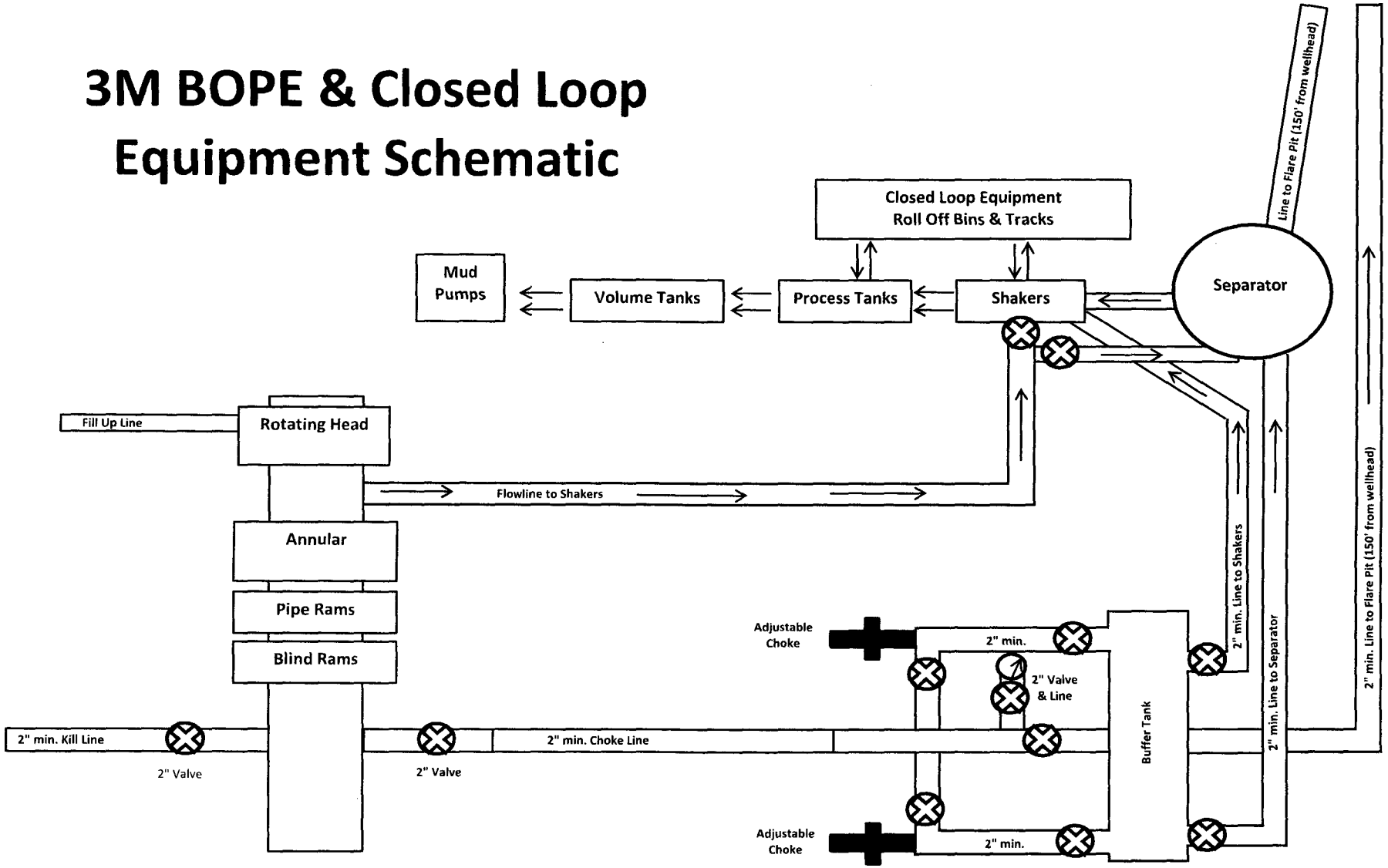
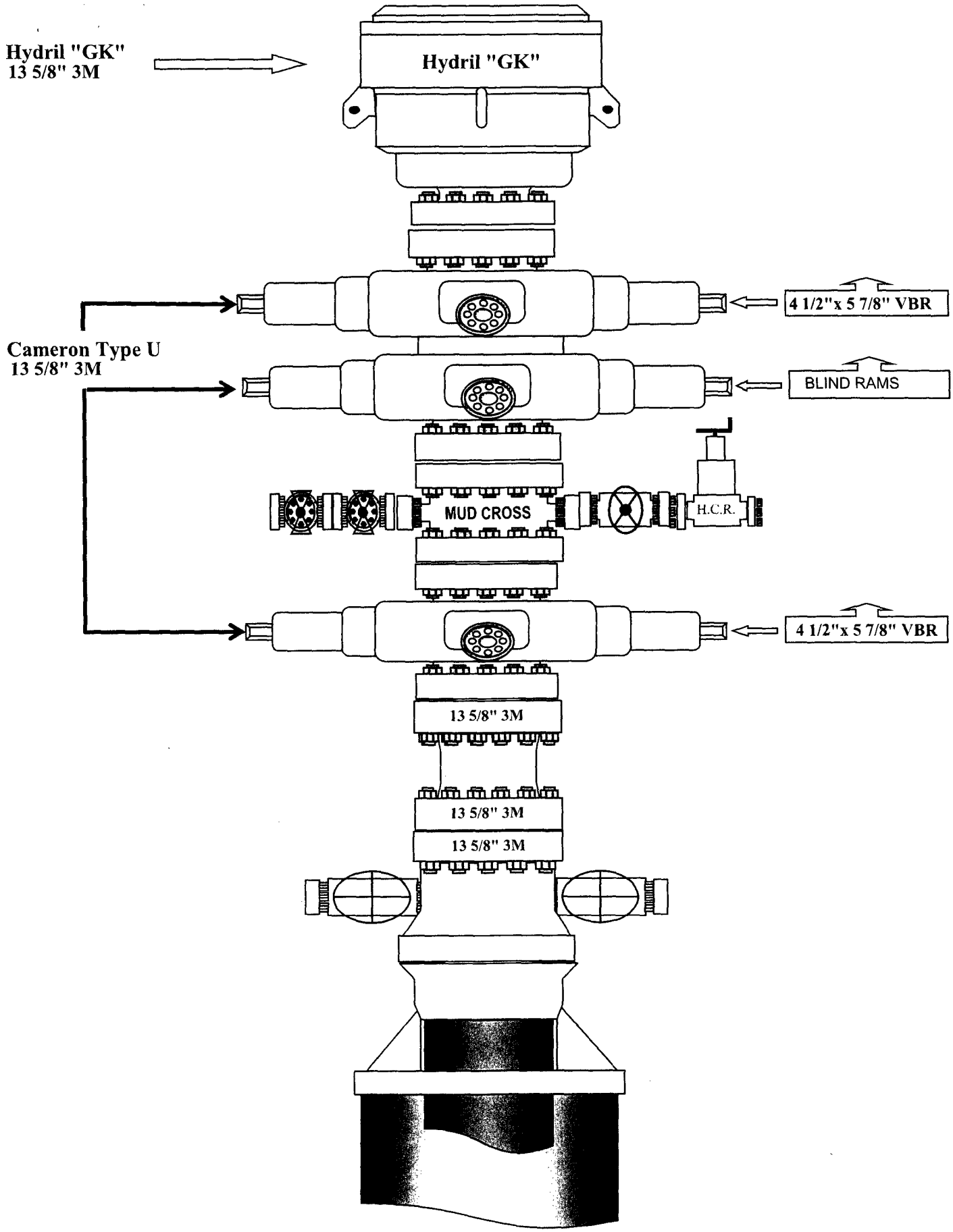


Exhibit "2"


Hydril "GK"
13 5/8" 3M
Hydril "GK"
4 1/2"x 5 7/8" VBR
Cameron Type U
13 5/8" 3M
BLIND RAMS
MUD CROSS
H.C.R.
4 1/2"x 5 7/8" VBR
13 5/8" 3M
13 5/8" 3M
13 5/8" 3M

Mewbourne Oil Company
BOP Schematic for

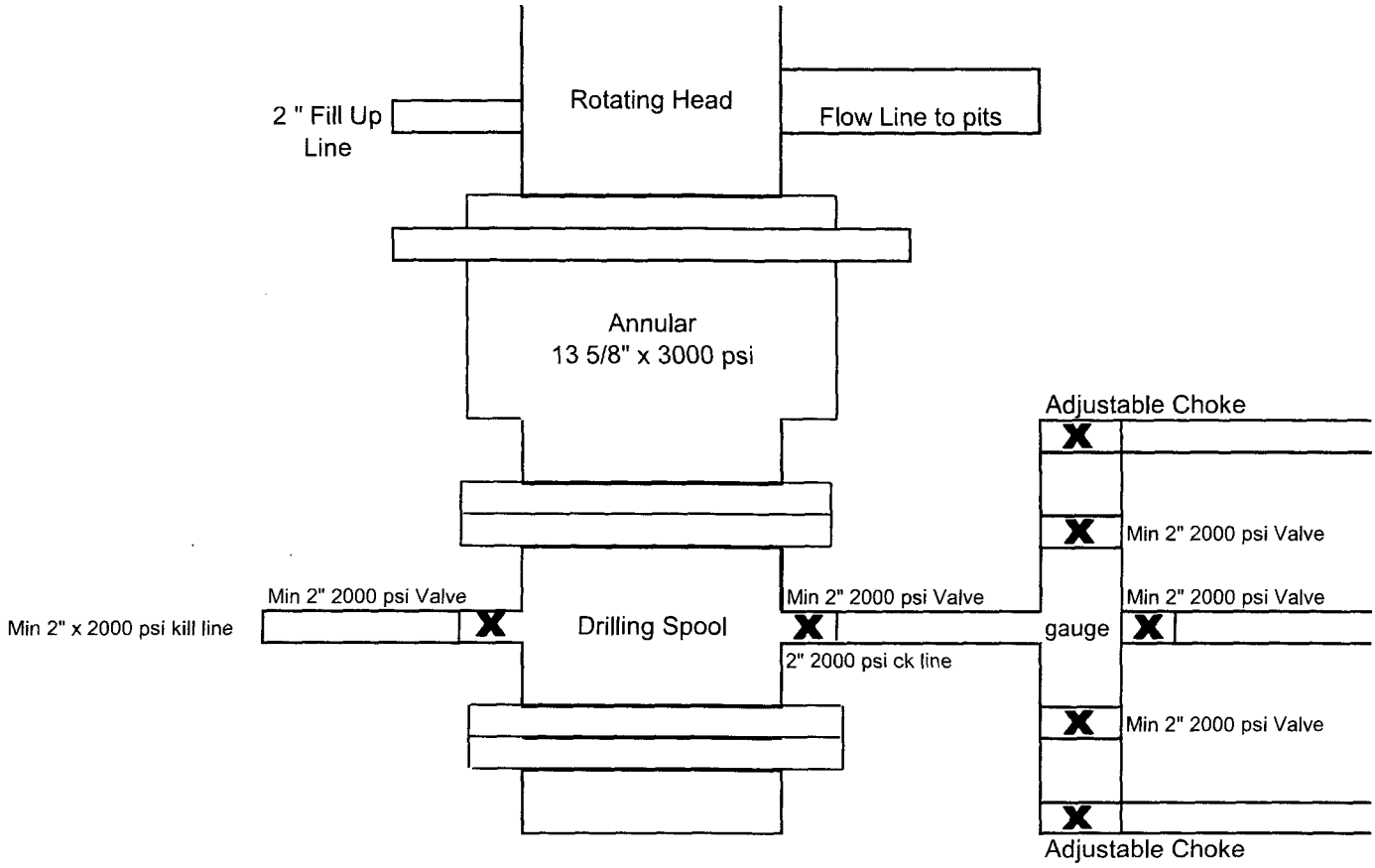
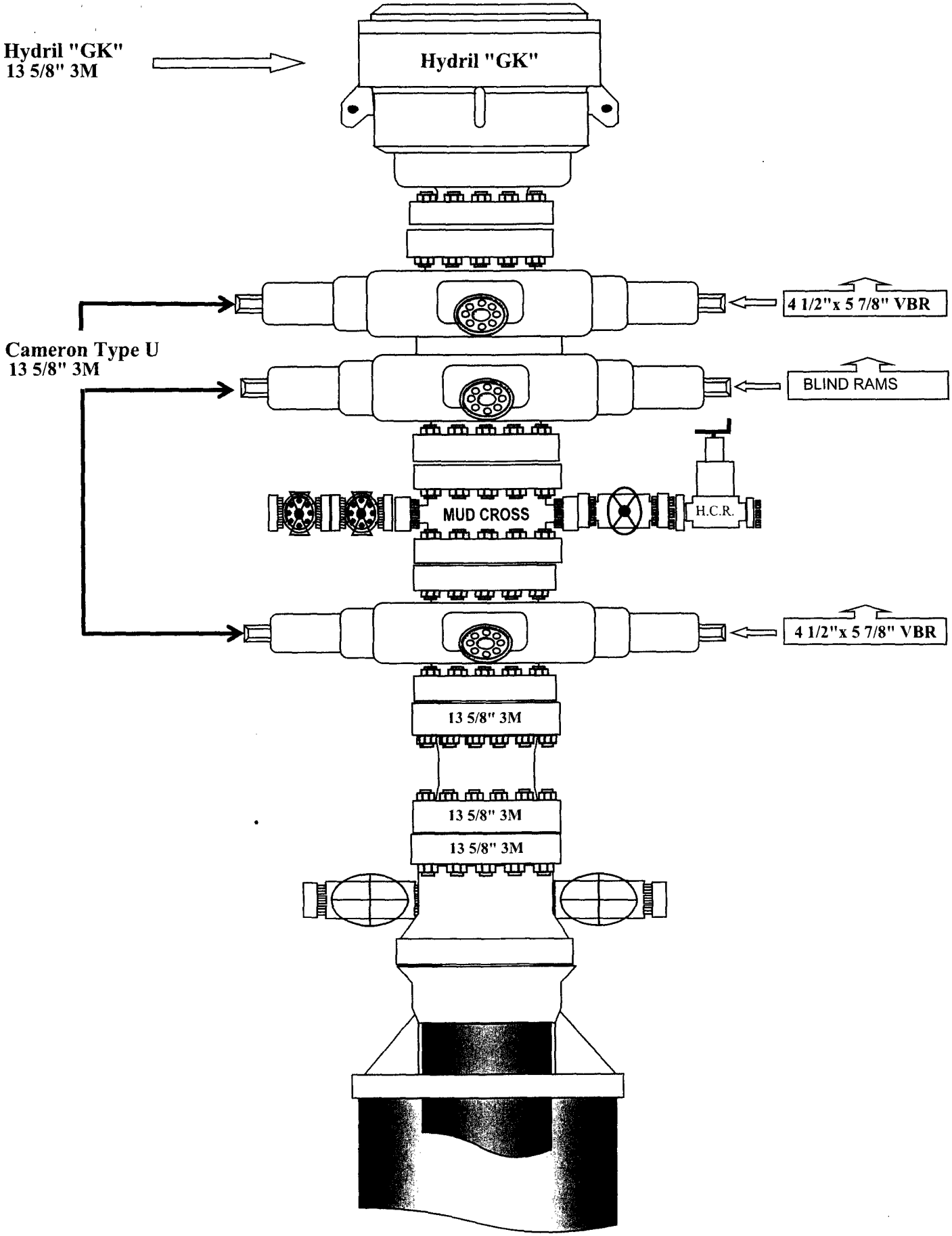
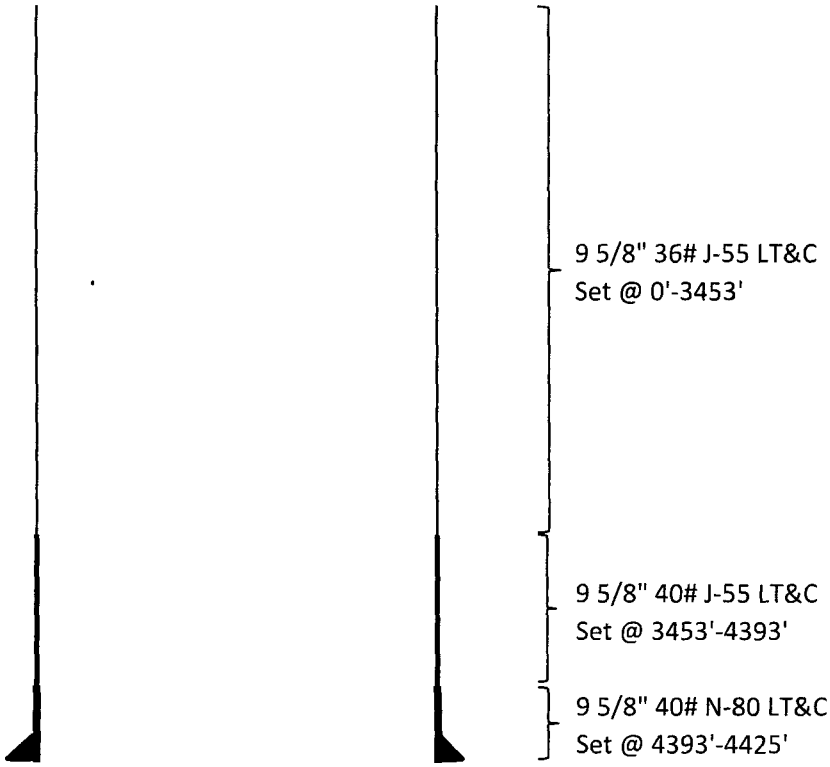


Exhibit #2


Hydril "GK"
13 5/8" 3M
Hydril "GK"
4 1/2"x 5 7/8" VBR
Cameron Type U
13 5/8" 3M
BLIND RAMS
MUD CROSS
H.C.R.
4 1/2"x 5 7/8" VBR
13 5/8" 3M
13 5/8" 3M
13 5/8" 3M

Virgo 24/23 B2AD Fed Com #1H
Intermediate Casing



Casing	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
36# J-55	1.13	1.96	2.78	4.54
40# J-55	1.13	1.73	13.37	16.75
40# N-80	1.34	2.5	578.72	719.28

Mewbourne Oil Company, Virgo 24/23 B2AD Fed Com #1H
Sec 24, T18S, R30E
SL: 450' FNL & 185' FEL, Sec 24
BHL: 450' FSL & 330' FWL, Sec 23

Casing Program

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
17.5"	0'	550'	13.375"	48	H40	STC	2.69	6.05	12.20	20.49
12.25"	0'	3453'	9.625"	36	J55	LTC	1.13	1.96	2.78	4.54
12.25"	3453'	4393'	9.625"	40	J55	LTC	1.13	1.73	13.37	16.75
12.25"	4393'	4425'	9.625"	40	N80	LTC	1.34	2.50	578.72	719.28
8.75"	0'	8981'	7"	26	HCP110	LTC	1.82	2.33	2.97	3.55
6.125"	8223'	18540'	4.5"	13.5	P110	LTC	2.36	2.74	2.43	3.03
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h
Must have table for contingency casing

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	Y
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	Y
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Hydrogen Sulfide Drilling Operations Plan
Mewbourne Oil Company

1. General Requirements

Rule 118 does not apply to this well because MOC has researched this area and no high concentrations of H2S were found. MOC will have on location and working all H2S safety equipment before the Delaware formation for purposes of safety and insurance requirements.

2. Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will have received training from a qualified instructor in the following areas prior to entering the drilling pad area of the well:

1. The hazards and characteristics of hydrogen sulfide gas.
2. The proper use of personal protective equipment and life support systems.
3. The proper use of hydrogen sulfide detectors, alarms, warning systems, briefing areas, evacuation procedures.
4. The proper techniques for first aid and rescue operations.

Additionally, supervisory personnel will be trained in the following areas:

1 The effects of hydrogen sulfide on metal components. If high tensile tubular systems are utilized, supervisory personnel will be trained in their special maintenance requirements.
2 Corrective action and shut in procedures, blowout prevention, and well control procedures while drilling a well.
3 The contents of the Hydrogen Sulfide Drilling Operations Plan.

There will be an initial training session prior to encountering a know hydrogen sulfide source. The initial training session shall include a review of the site specific Hydrogen Sulfide Drilling Operations Plan.

3. Hydrogen Sulfide Safety Equipment and Systems

All hydrogen sulfide safety equipment and systems will be installed, tested, and operational prior to drilling below the 9 5/8" intermediate casing.

1. Well Control Equipment
   - A. Choke manifold with minimum of one adjustable choke/remote choke.
   - B. Blowout preventers equipped with blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
   - C. Auxiliary equipment including annular type blowout preventer.
2. Protective Equipment for Essential Personnel
   Thirty minute self contained work unit located in the dog house and at briefing areas.

Additionally: If H2S is encountered in concentrations less than 10 ppm, fans will be placed in work areas to prevent the accumulation of hazardous amounts of poisonous gas. If higher concentrations of H2S are detected the well will be shut in and a rotating head, mud/gas separator, remote choke and flare line with igniter will be installed.

3. Hydrogen Sulfide Protection and Monitoring Equipment
Two portable hydrogen sulfide monitors positioned on location for optimum coverage and detection. The units shall have audible sirens to notify personnel when hydrogen sulfide levels exceed 20 PPM.

4. Visual Warning Systems
A. Wind direction indicators as indicated on the wellsite diagram.
B. Caution signs shall be posted on roads providing access to location. Signs shall be painted a high visibility color with lettering of sufficient size to be readable at reasonable distances from potentially contaminated areas.

4. Mud Program

The mud program has been designed to minimize the amount of hydrogen sulfide entrained in the mud system. Proper mud weight, safe drilling practices, and the use of hydrogen sulfide scavengers will minimize hazards while drilling the well.

5. Metallurgy

All tubular systems, wellheads, blowout preventers, drilling spools, kill lines, choke manifolds, and valves shall be suitable for service in a hydrogen sulfide environment when chemically treated.

6. Communications

State & County Officials phone numbers are posted on rig floor and supervisors trailer. Communications in company vehicles and toolpushers are either two way radios or cellular phones.

7. Well Testing

Drill stem testing is not an anticipated requirement for evaluation of this well. If a drill stem test is required, it will be conducted with a minimum number of personnel in the immediate vicinity. The test will be conducted during daylight hours only.

8. Emergency Phone Numbers

Eddy County Sheriff's Office	**911 or 575-887-7551**
Ambulance Service	**911 or 575-885-2111**
Carlsbad Fire Dept	**911 or 575-885-2111**
Loco Hills Volunteer Fire Dept.	**911 or 575-677-3266**
Closest Medical Facility - Columbia Medical Center of Carlsbad	**575-492-5000**

Mewbourne Oil Company	**Hobbs District Office**	**575-393-5905**
	Fax	**575-397-6252**
	2nd Fax	**575-393-7259**
District Manager	**Robin Terrell**	**575-390-4816**
Drilling Superintendent	**Frosty Lathan**	**575-390-4103**
	Bradley Bishop	**575-390-6838**
Drilling Foreman	**Wesley Noseff**	**575-441-0729**

Mewbourne Oil Company

Eddy County, New Mexico
Virgo 24/23 B2AD Fed Com #1H
Sec 24, T18S, R30E
SL: 450' FNL & 185' FEL, Sec 24
BHL: 450' FNL & 330' FWL, Sec 23

Plan: Design #1

Standard Planning Report

17 November, 2016

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Virgo 24/23 B2AD Fed Com #1H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3659.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	**MD Reference:**	WELL @ 3659.0usft (Original Well Elev)
Site:	Virgo 24/23 B2AD Fed Com #1H	**North Reference:**	Grid
Well:	Sec 24, T18S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 450' FNL & 330' FWL, Sec 23		
Design:	Design #1		

Project	Eddy County, New Mexico		
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		

Site Virgo 24/23 B2AD Fed Com #1H

Site Position:		**Northing:**	632,739.00 usft	**Latitude:**	32° 44' 19.691 N
From:	Map	**Easting:**	628,021.00 usft	**Longitude:**	103° 55' 1.142 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.23 °

Well Sec 24, T18S, R30E

Well Position	**+N/-S**	0.0 usft	**Northing:**	632,739.00 usft	**Latitude:**	32° 44' 19.691 N
	+E/-W	0.0 usft	**Easting:**	628,021.00 usft	**Longitude:**	103° 55' 1.142 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	3,659.0 usft	**Ground Level:**	3,632.0 usft

Wellbore BHL: 450' FNL & 330' FWL, Sec 23

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF200510	12/31/2009	7.95	60.66	49,063

Design Design #1

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.0	0.0	0.0	269.81	

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
8,223.5	0.00	0.00	8,223.5	0.0	0.0	0.00	0.00	0.00	0.00	KOP @ 8224'
8,981.4	90.93	269.81	8,701.0	-1.6	-485.3	12.00	12.00	0.00	-90.19	
18,536.4	90.93	269.81	8,546.0	-33.0	-10,039.0	0.00	0.00	0.00	0.00	BHL: 450' FNL & 330'

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Virgo 24/23 B2AD Fed Com #1H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3659.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	**MD Reference:**	WELL @ 3659.0usft (Original Well Elev)
Site:	Virgo 24/23 B2AD Fed Com #1H	**North Reference:**	Grid
Well:	Sec 24, T18S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 450' FNL & 330' FWL, Sec 23		
Design:	Design #1		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
SL: 450' FNL & 185' FEL, Sec 24									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Virgo 24/23 B2AD Fed Com #1H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3659.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	**MD Reference:**	WELL @ 3659.0usft (Original Well Elev)
Site:	Virgo 24/23 B2AD Fed Com #1H	**North Reference:**	Grid
Well:	Sec 24, T18S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 450' FNL & 330' FWL, Sec 23		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,200.0	0.0	0.0	0.0	0.00	0.00	0.00
8,223.5	0.00	0.00	8,223.5	0.0	0.0	0.0	0.00	0.00	0.00
KOP @ 8224'									
8,300.0	9.17	269.81	8,299.7	0.0	-6.1	6.1	12.00	12.00	0.00
8,400.0	21.17	269.81	8,396.0	-0.1	-32.2	32.2	12.00	12.00	0.00
8,500.0	33.17	269.81	8,484.8	-0.3	-77.8	77.8	12.00	12.00	0.00
8,600.0	45.17	269.81	8,562.2	-0.5	-140.9	140.9	12.00	12.00	0.00
8,605.8	45.86	269.81	8,566.2	-0.5	-145.0	145.0	12.00	12.00	0.00
FTP: 450' FNL & 330' FEL, Sec 24									
8,700.0	57.17	269.81	8,624.8	-0.7	-218.6	218.6	12.00	12.00	0.00
8,800.0	69.17	269.81	8,669.8	-1.0	-307.7	307.7	12.00	12.00	0.00
8,900.0	81.17	269.81	8,695.4	-1.3	-404.2	404.2	12.00	12.00	0.00
8,981.4	90.93	269.81	8,701.0	-1.6	-485.3	485.3	11.99	11.99	0.00
LP: 450' FNL & 670' FEL, Sec 24									
9,000.0	90.93	269.81	8,700.7	-1.7	-503.9	503.9	0.00	0.00	0.00
9,100.0	90.93	269.81	8,699.1	-2.0	-603.9	603.9	0.00	0.00	0.00
9,200.0	90.93	269.81	8,697.5	-2.3	-703.9	703.9	0.00	0.00	0.00
9,300.0	90.93	269.81	8,695.8	-2.6	-803.8	803.8	0.00	0.00	0.00
9,400.0	90.93	269.81	8,694.2	-3.0	-903.8	903.8	0.00	0.00	0.00
9,500.0	90.93	269.81	8,692.6	-3.3	-1,003.8	1,003.8	0.00	0.00	0.00
9,600.0	90.93	269.81	8,691.0	-3.6	-1,103.8	1,103.8	0.00	0.00	0.00
9,700.0	90.93	269.81	8,689.3	-4.0	-1,203.8	1,203.8	0.00	0.00	0.00
9,800.0	90.93	269.81	8,687.7	-4.3	-1,303.8	1,303.8	0.00	0.00	0.00
9,900.0	90.93	269.81	8,686.1	-4.6	-1,403.8	1,403.8	0.00	0.00	0.00

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Virgo 24/23 B2AD Fed Com #1H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3659.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	**MD Reference:**	WELL @ 3659.0usft (Original Well Elev)
Site:	Virgo 24/23 B2AD Fed Com #1H	**North Reference:**	Grid
Well:	Sec 24, T18S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 450' FNL & 330' FWL, Sec 23		
Design:	Design #1		

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)
10,000.0	90.93	269.81	8,684.5	-4.9	-1,503.7	1,503.8	0.00	0.00	0.00
10,100.0	90.93	269.81	8,682.9	-5.3	-1,603.7	1,603.7	0.00	0.00	0.00
10,200.0	90.93	269.81	8,681.2	-5.6	-1,703.7	1,703.7	0.00	0.00	0.00
10,300.0	90.93	269.81	8,679.6	-5.9	-1,803.7	1,803.7	0.00	0.00	0.00
10,400.0	90.93	269.81	8,678.0	-6.3	-1,903.7	1,903.7	0.00	0.00	0.00
10,500.0	90.93	269.81	8,676.4	-6.6	-2,003.7	2,003.7	0.00	0.00	0.00
10,600.0	90.93	269.81	8,674.7	-6.9	-2,103.7	2,103.7	0.00	0.00	0.00
10,700.0	90.93	269.81	8,673.1	-7.2	-2,203.7	2,203.7	0.00	0.00	0.00
10,800.0	90.93	269.81	8,671.5	-7.6	-2,303.6	2,303.7	0.00	0.00	0.00
10,900.0	90.93	269.81	8,669.9	-7.9	-2,403.6	2,403.6	0.00	0.00	0.00
11,000.0	90.93	269.81	8,668.3	-8.2	-2,503.6	2,503.6	0.00	0.00	0.00
11,100.0	90.93	269.81	8,666.6	-8.6	-2,603.6	2,603.6	0.00	0.00	0.00
11,200.0	90.93	269.81	8,665.0	-8.9	-2,703.6	2,703.6	0.00	0.00	0.00
11,300.0	90.93	269.81	8,663.4	-9.2	-2,803.6	2,803.6	0.00	0.00	0.00
11,400.0	90.93	269.81	8,661.8	-9.5	-2,903.6	2,903.6	0.00	0.00	0.00
11,500.0	90.93	269.81	8,660.1	-9.9	-3,003.5	3,003.6	0.00	0.00	0.00
11,600.0	90.93	269.81	8,658.5	-10.2	-3,103.5	3,103.5	0.00	0.00	0.00
11,700.0	90.93	269.81	8,656.9	-10.5	-3,203.5	3,203.5	0.00	0.00	0.00
11,800.0	90.93	269.81	8,655.3	-10.9	-3,303.5	3,303.5	0.00	0.00	0.00
11,900.0	90.93	269.81	8,653.7	-11.2	-3,403.5	3,403.5	0.00	0.00	0.00
12,000.0	90.93	269.81	8,652.0	-11.5	-3,503.5	3,503.5	0.00	0.00	0.00
12,100.0	90.93	269.81	8,650.4	-11.8	-3,603.5	3,603.5	0.00	0.00	0.00
12,200.0	90.93	269.81	8,648.8	-12.2	-3,703.4	3,703.5	0.00	0.00	0.00
12,300.0	90.93	269.81	8,647.2	-12.5	-3,803.4	3,803.5	0.00	0.00	0.00
12,400.0	90.93	269.81	8,645.5	-12.8	-3,903.4	3,903.4	0.00	0.00	0.00
12,500.0	90.93	269.81	8,643.9	-13.2	-4,003.4	4,003.4	0.00	0.00	0.00
12,600.0	90.93	269.81	8,642.3	-13.5	-4,103.4	4,103.4	0.00	0.00	0.00
12,700.0	90.93	269.81	8,640.7	-13.8	-4,203.4	4,203.4	0.00	0.00	0.00
12,800.0	90.93	269.81	8,639.1	-14.1	-4,303.4	4,303.4	0.00	0.00	0.00
12,900.0	90.93	269.81	8,637.4	-14.5	-4,403.4	4,403.4	0.00	0.00	0.00
13,000.0	90.93	269.81	8,635.8	-14.8	-4,503.3	4,503.4	0.00	0.00	0.00
13,100.0	90.93	269.81	8,634.2	-15.1	-4,603.3	4,603.3	0.00	0.00	0.00
13,200.0	90.93	269.81	8,632.6	-15.5	-4,703.3	4,703.3	0.00	0.00	0.00
13,300.0	90.93	269.81	8,630.9	-15.8	-4,803.3	4,803.3	0.00	0.00	0.00
13,400.0	90.93	269.81	8,629.3	-16.1	-4,903.3	4,903.3	0.00	0.00	0.00
13,500.0	90.93	269.81	8,627.7	-16.4	-5,003.3	5,003.3	0.00	0.00	0.00
13,600.0	90.93	269.81	8,626.1	-16.8	-5,103.3	5,103.3	0.00	0.00	0.00
13,700.0	90.93	269.81	8,624.5	-17.1	-5,203.2	5,203.3	0.00	0.00	0.00
13,800.0	90.93	269.81	8,622.8	-17.4	-5,303.2	5,303.3	0.00	0.00	0.00
13,900.0	90.93	269.81	8,621.2	-17.8	-5,403.2	5,403.2	0.00	0.00	0.00
14,000.0	90.93	269.81	8,619.6	-18.1	-5,503.2	5,503.2	0.00	0.00	0.00
14,100.0	90.93	269.81	8,618.0	-18.4	-5,603.2	5,603.2	0.00	0.00	0.00
14,200.0	90.93	269.81	8,616.3	-18.7	-5,703.2	5,703.2	0.00	0.00	0.00
14,300.0	90.93	269.81	8,614.7	-19.1	-5,803.2	5,803.2	0.00	0.00	0.00
14,400.0	90.93	269.81	8,613.1	-19.4	-5,903.1	5,903.2	0.00	0.00	0.00
14,500.0	90.93	269.81	8,611.5	-19.7	-6,003.1	6,003.2	0.00	0.00	0.00
14,600.0	90.93	269.81	8,609.9	-20.1	-6,103.1	6,103.2	0.00	0.00	0.00
14,700.0	90.93	269.81	8,608.2	-20.4	-6,203.1	6,203.1	0.00	0.00	0.00
14,800.0	90.93	269.81	8,606.6	-20.7	-6,303.1	6,303.1	0.00	0.00	0.00
14,900.0	90.93	269.81	8,605.0	-21.0	-6,403.1	6,403.1	0.00	0.00	0.00
15,000.0	90.93	269.81	8,603.4	-21.4	-6,503.1	6,503.1	0.00	0.00	0.00
15,100.0	90.93	269.81	8,601.7	-21.7	-6,603.1	6,603.1	0.00	0.00	0.00
15,200.0	90.93	269.81	8,600.1	-22.0	-6,703.0	6,703.1	0.00	0.00	0.00
15,300.0	90.93	269.81	8,598.5	-22.4	-6,803.0	6,803.1	0.00	0.00	0.00

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Virgo 24/23 B2AD Fed Com #1H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3659.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	**MD Reference:**	WELL @ 3659.0usft (Original Well Elev)
Site:	Virgo 24/23 B2AD Fed Com #1H	**North Reference:**	Grid
Well:	Sec 24, T18S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 450' FNL & 330' FWL, Sec 23		
Design:	Design #1		

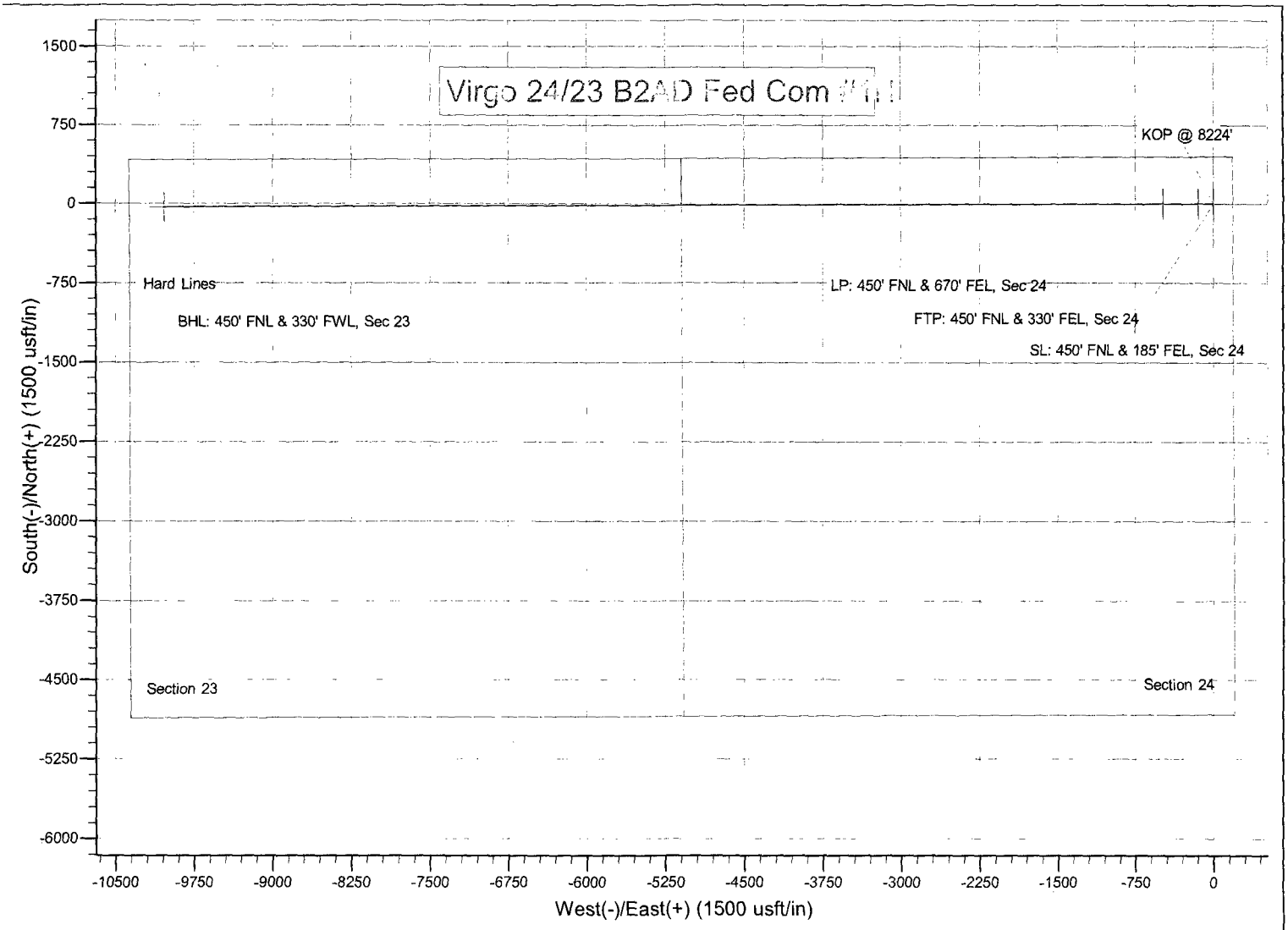
Planned Survey

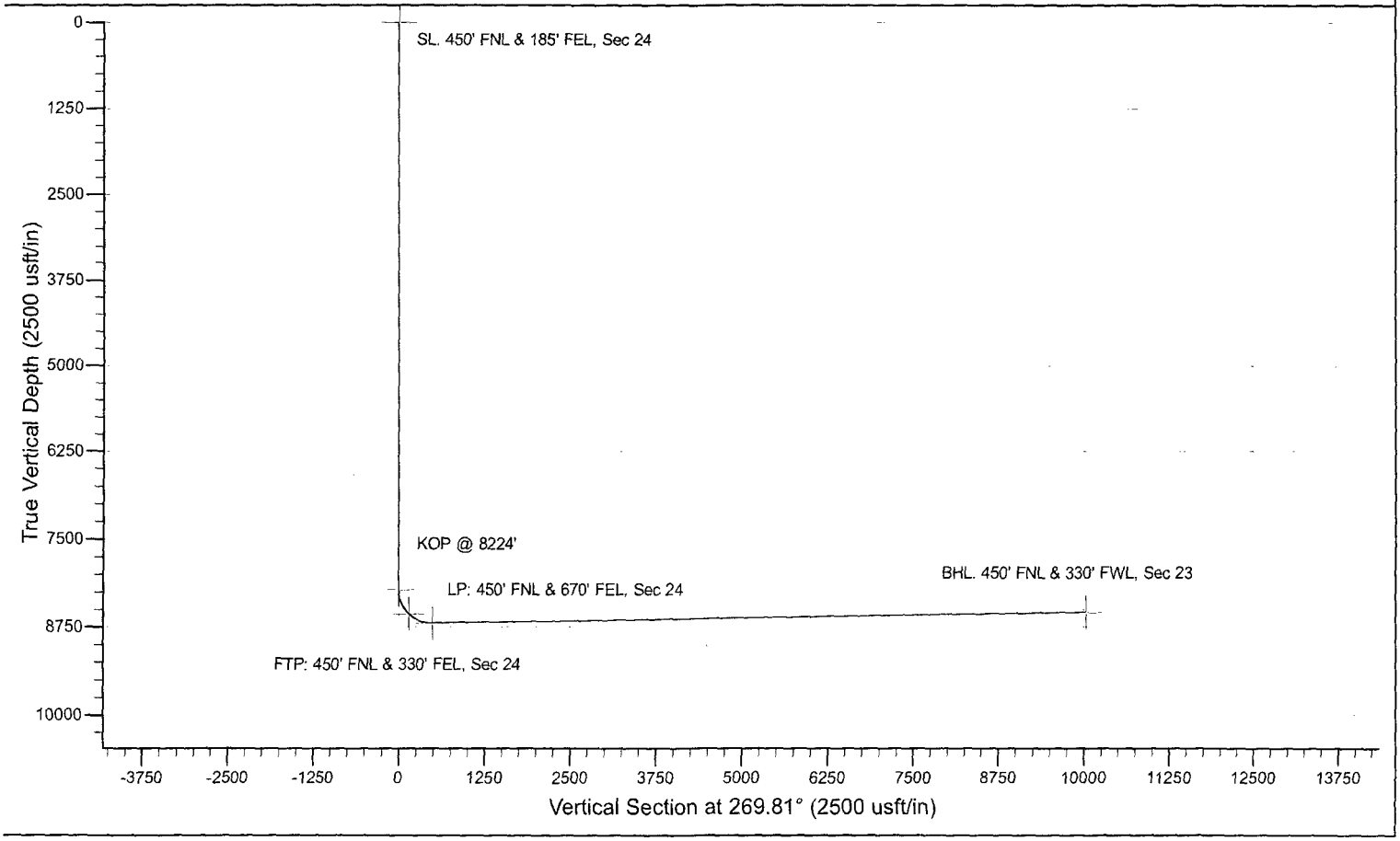
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,400.0	90.93	269.81	8,596.9	-22.7	-6,903.0	6,903.0	0.00	0.00	0.00
15,500.0	90.93	269.81	8,595.3	-23.0	-7,003.0	7,003.0	0.00	0.00	0.00
15,600.0	90.93	269.81	8,593.6	-23.3	-7,103.0	7,103.0	0.00	0.00	0.00
15,700.0	90.93	269.81	8,592.0	-23.7	-7,203.0	7,203.0	0.00	0.00	0.00
15,800.0	90.93	269.81	8,590.4	-24.0	-7,303.0	7,303.0	0.00	0.00	0.00
15,900.0	90.93	269.81	8,588.8	-24.3	-7,402.9	7,403.0	0.00	0.00	0.00
16,000.0	90.93	269.81	8,587.1	-24.7	-7,502.9	7,503.0	0.00	0.00	0.00
16,100.0	90.93	269.81	8,585.5	-25.0	-7,602.9	7,603.0	0.00	0.00	0.00
16,200.0	90.93	269.81	8,583.9	-25.3	-7,702.9	7,702.9	0.00	0.00	0.00
16,300.0	90.93	269.81	8,582.3	-25.6	-7,802.9	7,802.9	0.00	0.00	0.00
16,400.0	90.93	269.81	8,580.7	-26.0	-7,902.9	7,902.9	0.00	0.00	0.00
16,500.0	90.93	269.81	8,579.0	-26.3	-8,002.9	8,002.9	0.00	0.00	0.00
16,600.0	90.93	269.81	8,577.4	-26.6	-8,102.8	8,102.9	0.00	0.00	0.00
16,700.0	90.93	269.81	8,575.8	-27.0	-8,202.8	8,202.9	0.00	0.00	0.00
16,800.0	90.93	269.81	8,574.2	-27.3	-8,302.8	8,302.9	0.00	0.00	0.00
16,900.0	90.93	269.81	8,572.5	-27.6	-8,402.8	8,402.8	0.00	0.00	0.00
17,000.0	90.93	269.81	8,570.9	-28.0	-8,502.8	8,502.8	0.00	0.00	0.00
17,100.0	90.93	269.81	8,569.3	-28.3	-8,602.8	8,602.8	0.00	0.00	0.00
17,200.0	90.93	269.81	8,567.7	-28.6	-8,702.8	8,702.8	0.00	0.00	0.00
17,300.0	90.93	269.81	8,566.1	-28.9	-8,802.7	8,802.8	0.00	0.00	0.00
17,400.0	90.93	269.81	8,564.4	-29.3	-8,902.7	8,902.8	0.00	0.00	0.00
17,500.0	90.93	269.81	8,562.8	-29.6	-9,002.7	9,002.8	0.00	0.00	0.00
17,600.0	90.93	269.81	8,561.2	-29.9	-9,102.7	9,102.8	0.00	0.00	0.00
17,700.0	90.93	269.81	8,559.6	-30.3	-9,202.7	9,202.7	0.00	0.00	0.00
17,800.0	90.93	269.81	8,557.9	-30.6	-9,302.7	9,302.7	0.00	0.00	0.00
17,900.0	90.93	269.81	8,556.3	-30.9	-9,402.7	9,402.7	0.00	0.00	0.00
18,000.0	90.93	269.81	8,554.7	-31.2	-9,502.7	9,502.7	0.00	0.00	0.00
18,100.0	90.93	269.81	8,553.1	-31.6	-9,602.6	9,602.7	0.00	0.00	0.00
18,200.0	90.93	269.81	8,551.5	-31.9	-9,702.6	9,702.7	0.00	0.00	0.00
18,300.0	90.93	269.81	8,549.8	-32.2	-9,802.6	9,802.7	0.00	0.00	0.00
18,400.0	90.93	269.81	8,548.2	-32.6	-9,902.6	9,902.7	0.00	0.00	0.00
18,500.0	90.93	269.81	8,546.6	-32.9	-10,002.6	10,002.6	0.00	0.00	0.00
18,536.4	90.93	269.81	8,546.0	-33.0	-10,039.0	10,039.1	0.00	0.00	0.00
BHL: 450' FNL & 330' FWL, Sec 23									

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Virgo 24/23 B2AD Fed Com #1H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3659.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	**MD Reference:**	WELL @ 3659.0usft (Original Well Elev)
Site:	Virgo 24/23 B2AD Fed Com #1H	**North Reference:**	Grid
Well:	Sec 24, T18S, R30E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 450' FNL & 330' FWL, Sec 23		
Design:	Design #1		

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
SL: 450' FNL & 185' FEL - plan hits target center - Point	0.00	0.00	0.0	0.0	0.0	632,739.00	628,021.00	32° 44' 19.691 N	103° 55' 1.142 W
KOP @ 8224' - plan hits target center - Point	0.00	0.00	8,223.5	0.0	0.0	632,739.00	628,021.00	32° 44' 19.691 N	103° 55' 1.142 W
BHL: 450' FNL & 330' FV - plan hits target center - Point	0.00	0.00	8,546.0	-33.0	-10,039.0	632,706.00	617,982.00	32° 44' 19.739 N	103° 56' 58.677 W
FTP: 450' FNL & 330' FE - plan hits target center - Point	0.00	0.00	8,566.3	-0.5	-145.0	632,738.53	627,876.00	32° 44' 19.691 N	103° 55' 2.840 W
LP: 450' FNL & 670' FEL - plan hits target center - Point	0.00	0.00	8,701.0	-1.6	-485.3	632,737.40	627,535.70	32° 44' 19.694 N	103° 55' 6.824 W


Virgo 24/23 B2AD Fed Com #1H
KOP @ 8224'
Hard Lines
BHL: 450' FNL & 330' FWL, Sec 23
LP: 450' FNL & 670' FEL, Sec 24
FTP: 450' FNL & 330' FEL, Sec 24
SL: 450' FNL & 185' FEL, Sec 24
Section 23
Section 24
South(-)/North(+) (1500 usft/in)
West(-)/East(+) (1500 usft/in)


SL. 450' FNL & 185' FEL, Sec 24
KOP @ 8224'
LP: 450' FNL & 670' FEL, Sec 24
BHL. 450' FNL & 330' FWL, Sec 23
FTP: 450' FNL & 330' FEL, Sec 24
True Vertical Depth (2500 usft/in)
Vertical Section at 269.81° (2500 usft/in)

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

PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: *Tim.Cantu@gates.com*
WEB: www.gates.com

10K CEMENTING ASSEMBLY PRESSURE TEST CERTIFICATE

Customer :	AUSTIN DISTRIBUTING	Test Date:	4/30/2015
Customer Ref. :	4060578	Hose Serial No.:	D-043015-7
Invoice No. :	500506	Created By:	JUSTIN CROPPER

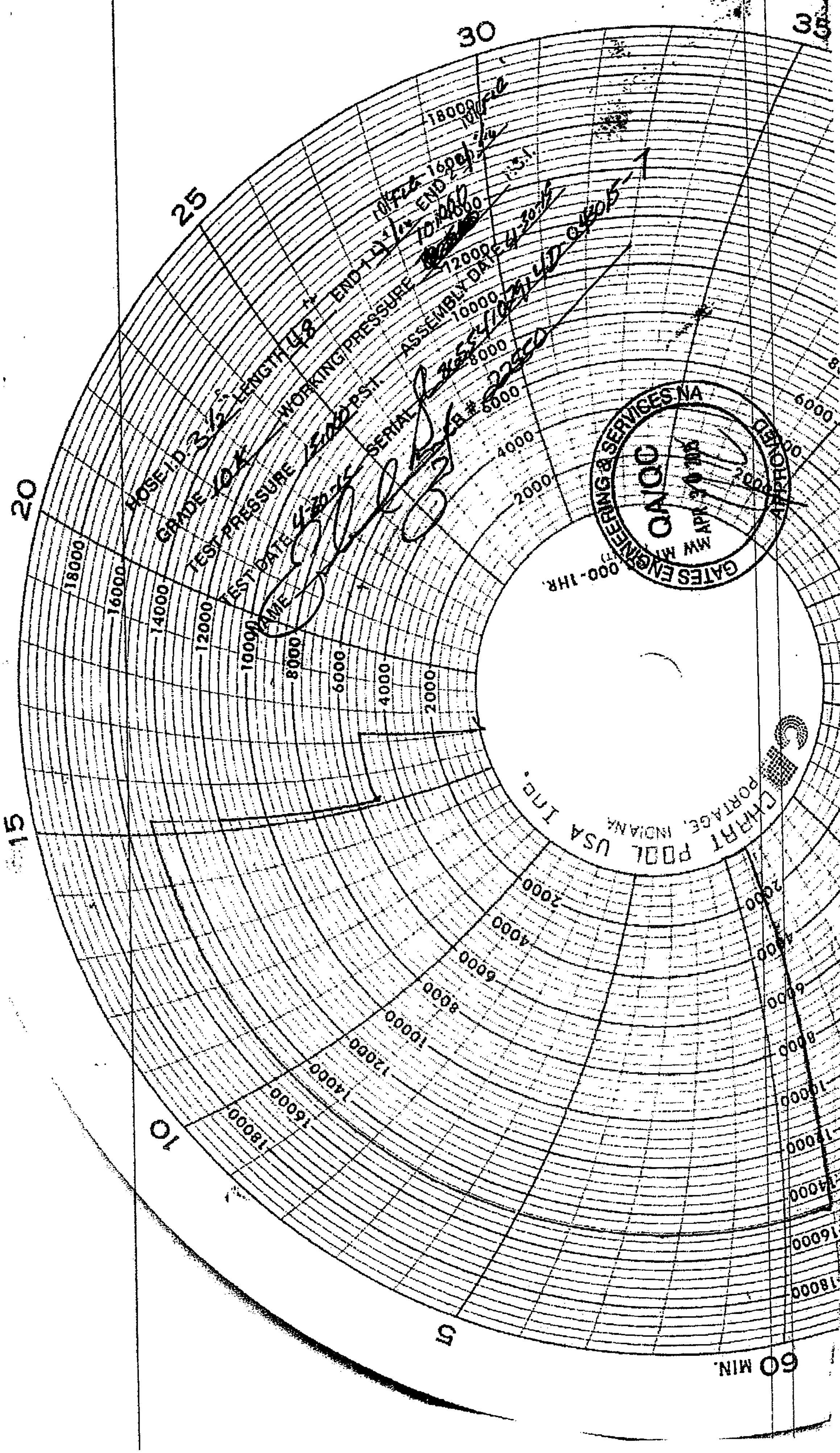
Product Description:	10K3.548.0CK4.1/1610KFLGE/E LE

End Fitting 1 :	4 1/16 10K FLG	End Fitting 2 :	4 1/16 10K FLG
Gates Part No. :	4773-6290	Assembly Code :	L36554102914D-043015-7
Working Pressure :	10,000 PSI	Test Pressure :	15,000 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 15,000 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 Manager :	QUALITY	Produciton:	PRODUCTION
Date :	4/30/2015	Date :	4/30/2015
Signature :		Signature :	

Form PTC - 01 Rev.0 2


HOSE I.D.
LENGTH
END
END
GRADE
WORKING PRESSURE
P.S.I.
TEST PRESSURE
P.S.I.
ASSEMBLY DATE
TEST DATE
SERIAL
NAME
CB #
GATES ENGINEERING & SERVICES NA
QA/QC
APPROVED
CHART POOL USA Inc.
PORTAGE, INDIANA
60 MIN.
000-1HR.

APD ID: 10400002823 Submission Date: 11/18/2016

Operator Name: MEWBOURNE OIL COMPANY

Well Name: VIRGO 24/23 B2AD FED COM Well Number: 1H

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? YES

Existing Road Map:

Virgo 24-23 B2AD Fed Com 1H_existing road map_11-16-2016.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

Virgo 24-23 B2AD Fed Com 1H_new road map_11-16-2016.pdf

New road type: RESOURCE

Length: 1536.12 Feet Width (ft.): 20

Max slope (%): 3 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: None

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: OFFSITE

Access surfacing type description: Caliche

Access onsite topsoil source depth:

Offsite topsoil source description: Topsoil will be on edge of lease road.

Onsite topsoil removal process:

Access other construction information: None

Access miscellaneous information: None

Number of access turnouts: 1 **Access turnout map:**

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: None

Road Drainage Control Structures (DCS) description: None

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:

Virgo 24-23 B2AD Fed Com 1H_existingwellmap_11-16-2016.pdf

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? SUBMIT

Estimated Production Facilities description:

Production Facilities description: a. All permanent, lasting more than 6 months, above ground structures including but not limited to pumpjacks, storage tanks, pipeline risers, meter housing, etc. that are not subject to safety requirements will be painted a non-reflective paint color that blends in with the surrounding landscape. The paint color will be one of the colors from the BLM Standard Environmental Colors chart selected by the BLM authorized officer. b. All proposed production facilities that are located on the well pad will be strategically placed to allow for maximum interim reclamation, recontouring, and revegetation of the well location. c. Production from the proposed well will be located on the West edge of location. d. If any plans change regarding the production facility or other infrastructure (pipeline, electric line, etc.), we will submit a sundry notice or right of way (if applicable) prior to installation of construction. e. An electric line will be applied for through a sundry notice or BLM right of way at a later date.

Production Facilities map:

Virgo 24-23 B2AD Fed Com 1H_productionfacilitylayout_12-27-2016.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: DUST CONTROL, INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING
Water source type: IRRIGATION
Describe type:
Source longitude: -103.902405
Source latitude: 32.712414
Source datum: NAD83
Water source permit type: WATER WELL
Source land ownership: PRIVATE
Water source transport method: TRUCKING
Source transportation land ownership: FEDERAL
Water source volume (barrels): 2152
Source volume (acre-feet): 0.27737793
Source volume (gal): 90384

Water source use type: DUST CONTROL, INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING
Water source type: IRRIGATION
Describe type:
Source longitude: -103.955734
Source latitude: 32.6996
Source datum: NAD83
Water source permit type: WATER WELL
Source land ownership: FEDERAL
Water source transport method: TRUCKING
Source transportation land ownership: COMMERCIAL
Water source volume (barrels): 2152
Source volume (acre-feet): 0.27737793
Source volume (gal): 90384

Water source and transportation map:

Virgo 24-23 B2AD Fed Com 1H_watersourceandtransportationmap_11-16-2016.pdf

Water source comments:

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.):

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: Caliche

Construction Materials source location attachment:

Virgo 24-23 B2AD Fed Com 1H_calichesourceandtransportationmap_11-16-2016.pdf

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drill cuttings

Amount of waste: 940 barrels

Waste disposal frequency : One Time Only

Safe containment description: Drill cuttings will be properly contained in steel tanks (20 yard roll off bins.)

Safe containmant attachment:

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

Disposal type description:

Disposal location description: NMOCD approved waste disposal locations are CRI or Lea Land, both facilities are located on HWY 62/180, Sec. 27 T20S R32E.

Waste type: SEWAGE

Waste content description: Human waste & grey water

Amount of waste: 1500 gallons

Waste disposal frequency : Weekly

Safe containment description: 2,000 gallon plastic container

Safe containmant attachment:

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

Disposal location description: City of Carlsbad Water Treatment facility

Waste type: GARBAGE

Waste content description: Garbage & trash

Amount of waste: 1500 pounds

Waste disposal frequency : One Time Only

Safe containment description: Enclosed trash trailer

Safe containmant attachment:

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

Disposal location description: Waste Management facility in Carlsbad.

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? NO

Description of cuttings location

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:

Virgo 24-23 B2AD Fed Com 1H_well site layout1_11-16-2016.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name:

Multiple Well Pad Number:

Recontouring attachment:

Drainage/Erosion control construction: None

Drainage/Erosion control reclamation: None

Wellpad long term disturbance (acres): 1.67

Wellpad short term disturbance (acres): 2.65

Access road long term disturbance (acres): 0.754

Access road short term disturbance (acres): 0

Pipeline long term disturbance (acres): 0

Pipeline short term disturbance (acres): 0

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0

Total long term disturbance: 2.424

Total short term disturbance: 2.65

Reconstruction method: The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.
Topsoil redistribution: Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including cuts & fills. To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used.
Soil treatment: NA

Existing Vegetation at the well pad: Various brush & grasses

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Various brush & grasses

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: NA

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: NA

Existing Vegetation Community at other disturbances attachment:

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

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Bradley Last Name: Bishop

Phone: (575)393-5905 Email: bbishop@mewbourne.com

Seedbed prep: Final seedbed preparation will consist of contour cultivating to a depth of 4 to 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 BMP: To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used.

Seed method: drilling or broadcasting seed over entire reclaimed area.

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: NA

Weed treatment plan attachment:

Monitoring plan description: vii. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, and that erosion and invasive/noxious weeds are controlled.
Monitoring plan attachment:

Success standards: regrowth within 1 full growing season of reclamation.

Pit closure description: NA

Pit closure attachment:

Section 11 - Surface Ownership

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:

Disturbance type: EXISTING 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:

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:

Section 12 - Other Information

Right of Way needed? NO Use APD as ROW?

ROW Type(s):

ROW Applications

SUPO Additional Information: NONE

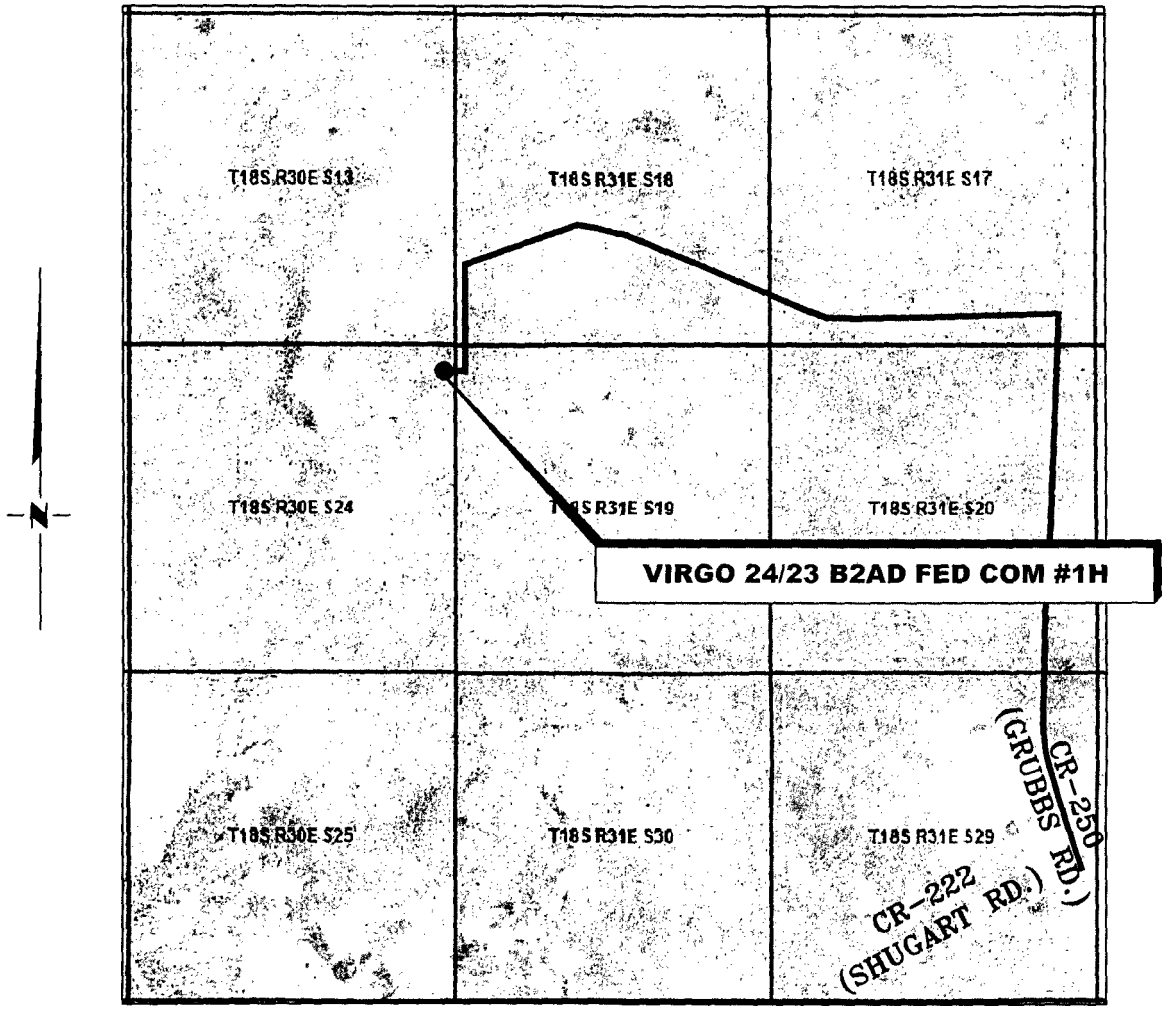
Use a previously conducted onsite? YES

Previous Onsite information: MAR 3 2016 Met with Nick Franke (BLM) & RRC surveying staked location @ 450' FNL & 185' FEL Sec 24, T18S, R30E, Eddy Co., NM (Elev 3632 GL). This appears to be a drillable location with pits to the north, will require 350' of new lease road off NE corner heading N to existing lease road. Location will be 340' x 340'. Topsoil stockpiled 30' on east edge of location. Reclaim 70' on East and South sides of pad. Battery will be to the west. Archaeology is cleared through BLM MOA.

Other SUPO Attachment

VICINITY MAP

NOT TO SCALE



SECTION 24, TWP. 18 SOUTH, RGE. 30 EAST, N. M. P. M., EDDY CO., NEW MEXICO

OPERATOR: Mewbourne Oil Company
LEASE: Virgo 24/23 B2AD Fed Com
WELL NO.: 1H

LOCATION: 450' FNL & 185' FEL
ELEVATION: 3632'

NO.	REVISION	DATE

JOB NO.: LS1602070
DWG. NO.: 1602070VM

RRC

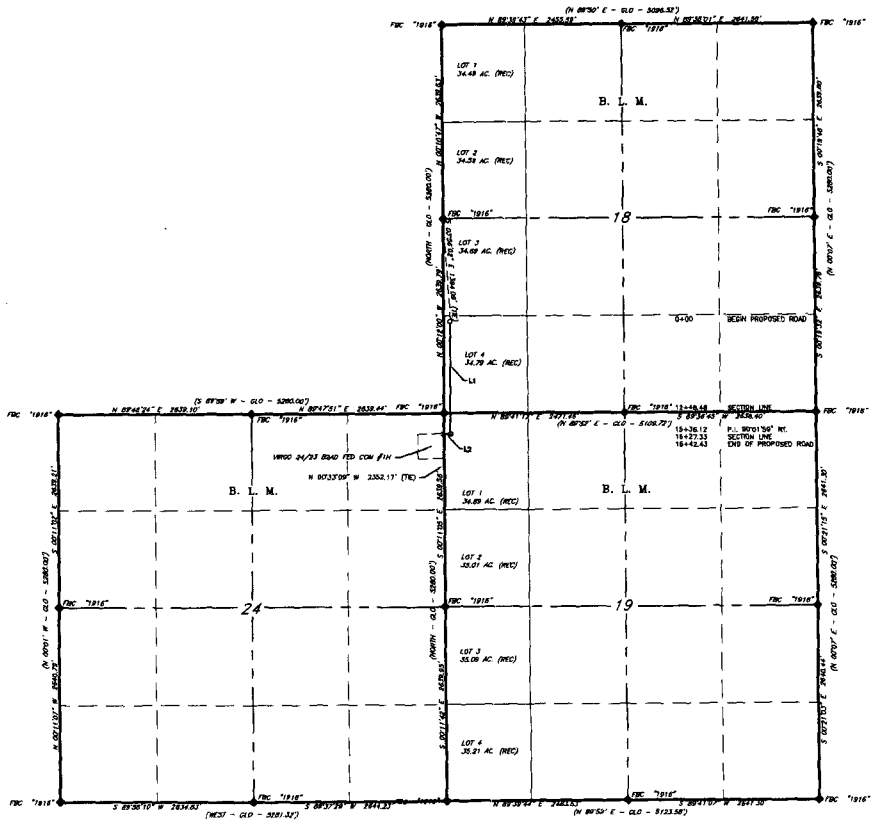
308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: NTS
DATE: 3-04-2016
SURVEYED BY: ML/CE
DRAWN BY: LPS
APPROVED BY: RMH
SHEET : 1 OF 1

MEWBOURNE OIL COMPANY

PROPOSED ROAD FOR THE VIRGO 24/23 B2AD FEDERAL COM #1H

SECTION 24, T18S, R30E, &
SECTIONS 18 & 19, T18S, R31E,
N. M. P. M., EDDY CO., NEW MEXICO



LINE TABLE		
LINE	BEARING	LENGTH
L1	S 00°12'47" E	1536.12'
L2	S 89°49'11" W	106.31'

SCALE: 1" = 2000'

0 1000' 2000'

BEARINGS ARE GRID NAD 27 NM EAST
DISTANCES ARE HORIZ. GROUND.

LEGEND

( ) *RECORD DATA - GLO*

◆ *FOUND MONUMENT AS NOTED*

PROPOSED ROAD

Firm No.. TX 10193838 NM 4655451

NO.	REVISION	DATE

JOB NO.: LS1602070

DWG. NO.: 1602070-1

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 2000'

DATE: 3-4-16

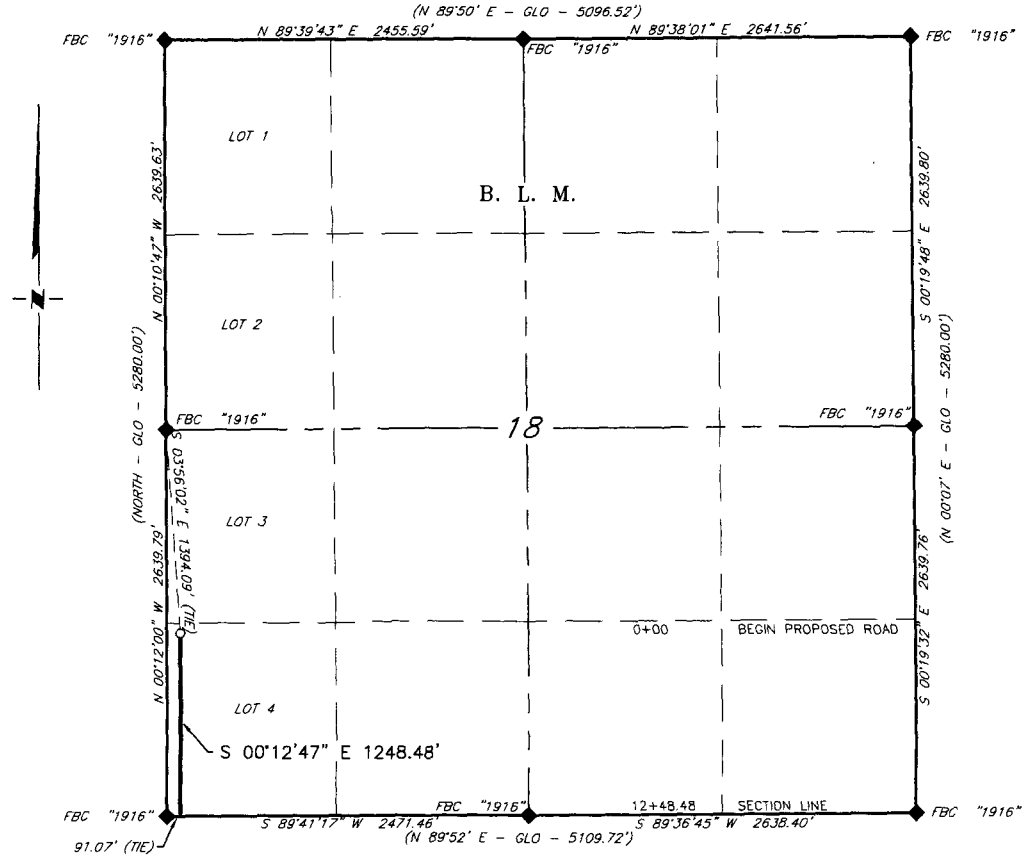
SURVEYED BY: ML/CE

DRAWN BY: JR

APPROVED BY: RMH

SHEET : 1 OF 4

MEWBOURNE OIL COMPANY
PROPOSED ROAD FOR THE VIRGO 24/23 B2AD FEDERAL COM #1H
SECTION 18, T18S, R31E,
N. M. P. M., EDDY CO., NEW MEXICO



DESCRIPTION

A strip of land 30 feet wide, being 1248.48 feet or 75.665 rods in length lying in Lot 4, Section 18, Township 18 South, Range 31 East, N. M. P. M., Eddy County, New Mexico, being 15 feet left and 15 feet right of the following described survey of a centerline across B. L. M. land:

BEGINNING at Engr. Sta. 0+00, a point in Lot 4, the Southwest quarter of Section 18, which bears S 03°56'02" E,
1,394.09 feet, from a brass cap, stamped "1916", found for the West quarter corner of Section 18;

Thence S 00°12'47" E, 1,248.48 feet, to Engr. Sta. 12+48.48, a point on the South line of Section 18, which bears, N 89°41'17" E 91.07 feet, from a brass cap, found for the Southwest corner of Section 18.

Said strip of land contains 0.860 acres, more or less, and is allocated by forties as follows:

Lot 4	75.665 Rods	0.860 Acres

SCALE: 1" = 1000'
0 500' 1000'

BEARINGS ARE GRID NAD 27 NM EAST
DISTANCES ARE HORIZ. GROUND.

LEGEND

( ) RECORD DATA - GLO

◆ FOUND MONUMENT AS NOTED

PROPOSED ROAD

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Robert M. Howett NM PS 19680

ROBERT M. HOWETT NEW MEXICO 19680 PROFESSIONAL SURVEYOR 3-7-16

Firm No.: TX 10193838 NM 4655451

NO.	REVISION	DATE

JOB NO.: LS1602070
DWG. NO.: 1602070-2

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

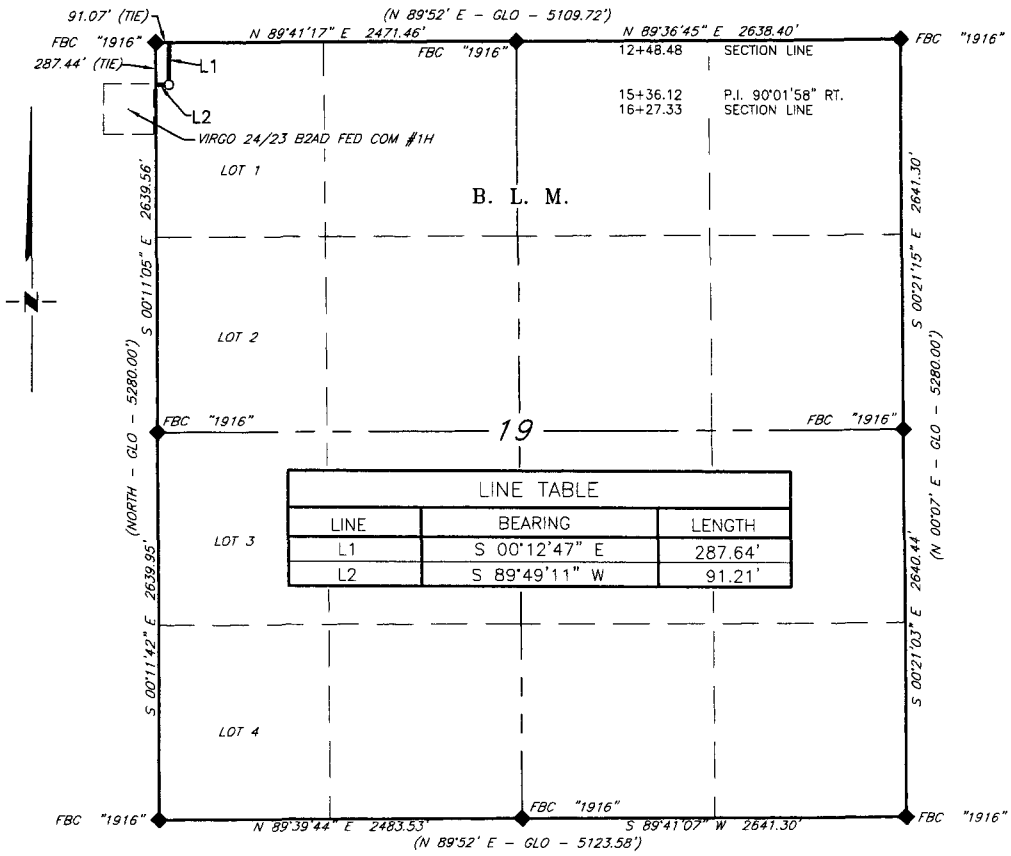
SCALE: 1" = 1000'
DATE: 3-4-2016
SURVEYED BY: ML/CE
DRAWN BY: JR
APPROVED BY: RMH
SHEET : 2 OF 4

MEWBOURNE OIL COMPANY

PROPOSED ROAD FOR THE VIRGO 24/23 B2AD FEDERAL COM #1H

SECTION 19, T18S, R31E,

N. M. P. M., EDDY CO., NEW MEXICO



LINE TABLE		
LINE	BEARING	LENGTH
L1	S 00°12'47" E	287.64'
L2	S 89°49'11" W	91.21'

DESCRIPTION

A strip of land 30 feet wide, being 378.85 feet or 22.961 rods in length lying in Lot 1, Section 19, Township 18 South, Range 31 East, N. M. P. M., Eddy County, New Mexico, being 15 feet left and 15 feet right of the following described survey of a centerline across B. L. M. land;

BEGINNING at Engr. Sta. 12+48.48, a point on the North line of Section 18, which bears N 89°41'17" E, 91.07 feet, from a brass cap, stamped "1916", found for the Northwest corner of Section 19;

Thence S 00°12'47" E, 287.64 feet, to Engr. Sta. 15+36.12, a P. I. 90°01'58" right;

Thence S 89°49'11" W, 91.21 feet, to Engr. Sta. 16+27.33, a point on the West line of Section 19, which bears, S 00°11'05" E, 287.44 feet, from a brass cap, found for the Northwest corner of Section 19.

Said strip of land contains 0.261 acres, more or less, and is allocated by forties as follows:

Lot 1	22.961 Rods	0.261 Acres

SCALE: 1" = 1000'
0 500' 1000'

BEARINGS ARE GRID NAD 27 NM EAST
DISTANCES ARE HORIZ. GROUND.

LEGEND

( ) RECORD DATA - GLO

◆ FOUND MONUMENT AS NOTED

PROPOSED ROAD

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Robert M. Howett NM PS 19680

ROBERT M. HOWETT NEW MEXICO 19680 3/7/16 PROFESSIONAL SURVEYOR

Firm No.: TX 10193838 NM 4655451

NO.	REVISION	DATE

JOB NO.: LS1602070
DWG. NO.: 1602070-3

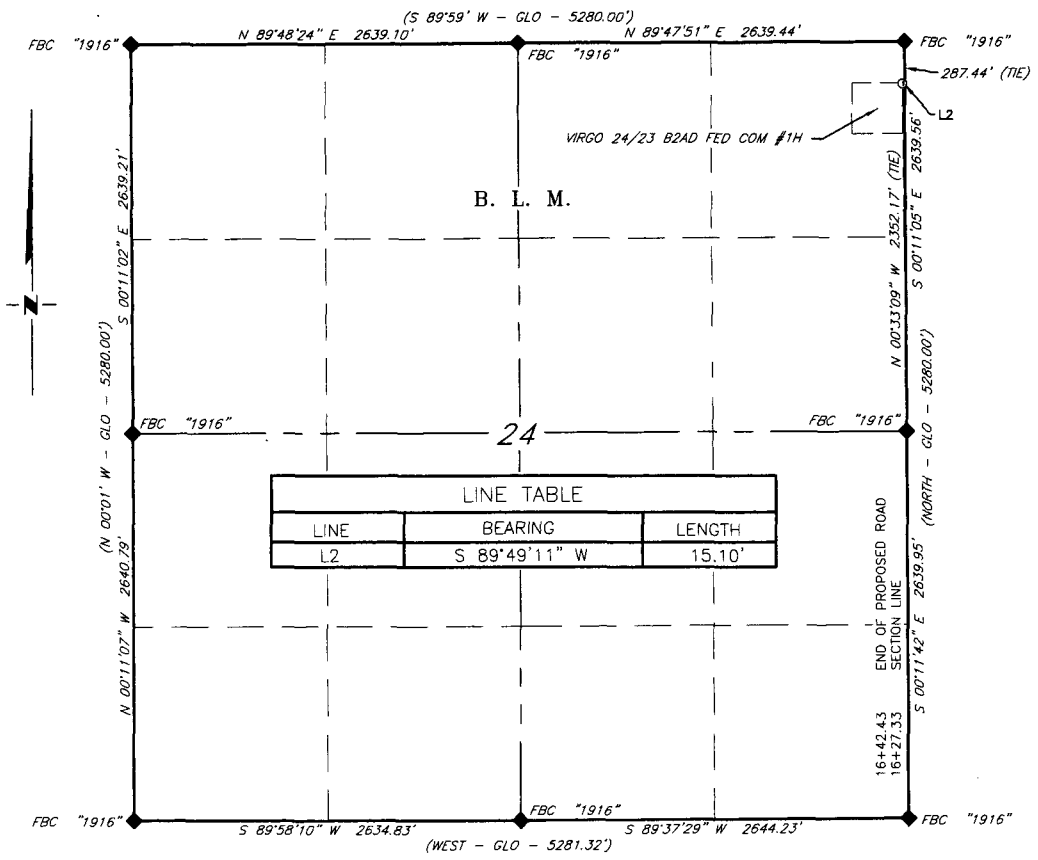
RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 1000'
DATE: 3-4-2016
SURVEYED BY: ML/CE
DRAWN BY: JR
APPROVED BY: RMH
SHEET : 3 OF 4

MEWBOURNE OIL COMPANY

PROPOSED ROAD FOR THE VIRGO 24/23 B2AD FEDERAL COM #1H
SECTION 24, T18S, R30E,
N. M. P. M., EDDY CO., NEW MEXICO



DESCRIPTION

A strip of land 30 feet wide, being 15.10 feet or 0.915 rods in length lying in Section 24, Township 18 South, Range 30 East, N. M. P. M., Eddy County, New Mexico, being 15 feet left and 15 feet right of the following described survey of a centerline across B. L. M. land;

BEGINNING at Engr. Sta. 16+27.33, a point on the East line of Section 24, which bears S 00°11'05" E, 287.44 feet, from a brass cap, stamped "1916", found for the Northeast corner of Section 24;

Thence S 89°49'11" W, 15.10 feet, to Engr. Sta. 16+42.43, the End of Survey, a point in the Northeast quarter of Section 24, which bears, N 00°33'09" W, 2,352.17 feet, from a brass cap, found for the East quarter corner of Section 24.

Said strip of land contains 0.010 acres, more or less, and is allocated by forties as follows:

NE 1/4 NE 1/4 0.915 Rods 0.010 Acres

SCALE: 1" = 1000'
0 500' 1000'

BEARINGS ARE GRID NAD 27 NM EAST
DISTANCES ARE HORIZ. GROUND.

LEGEND

( ) RECORD DATA - GLO

◆ FOUND MONUMENT AS NOTED

PROPOSED ROAD

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Robert M. Howett NM PS 19680

ROBERT M. HOWETT NEW MEXICO 19680 3/7/16 PROFESSIONAL SURVEYOR

Firm No.. TX 10193838 NM 4655451

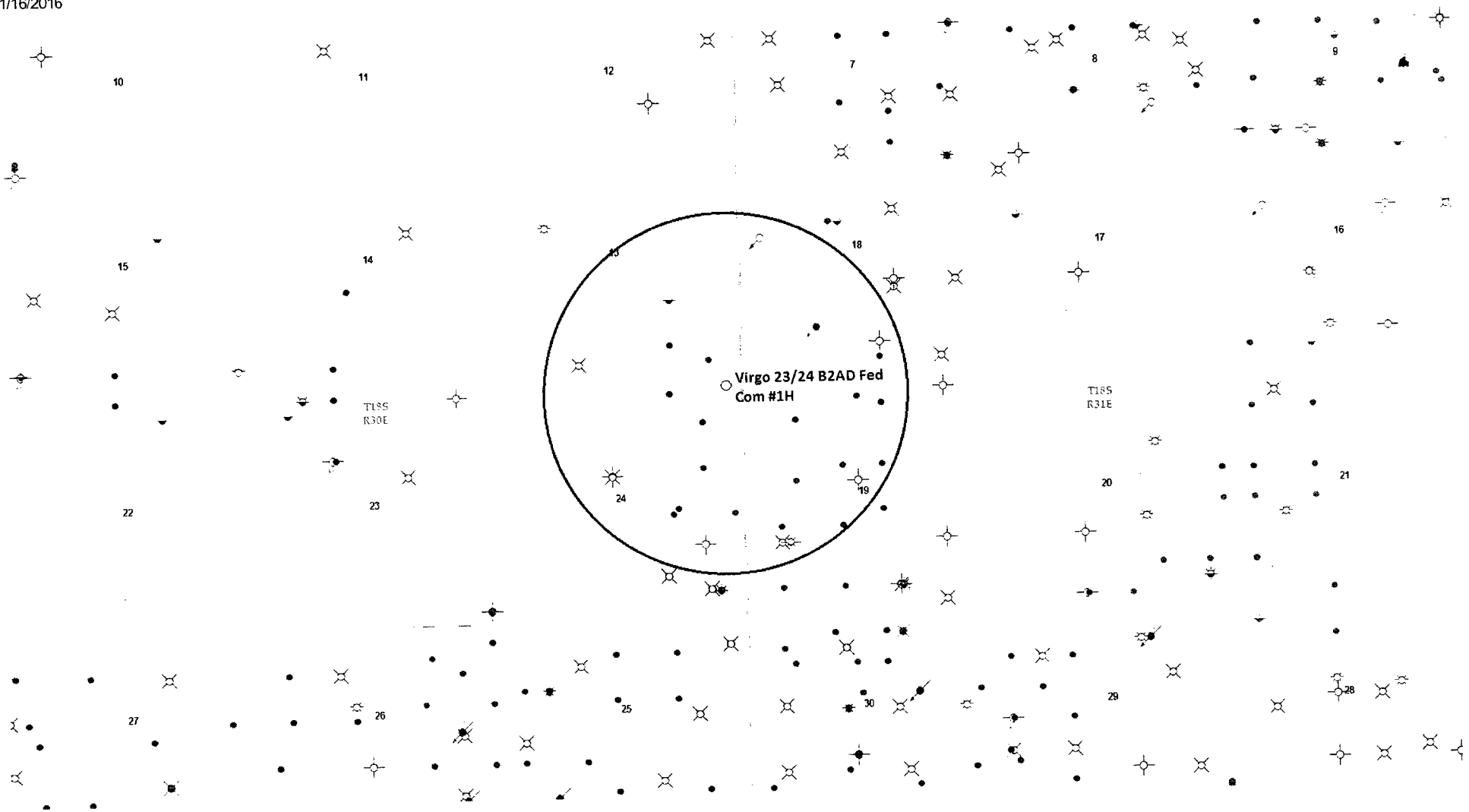
NO.	REVISION	DATE

JOB NO.: LS1602070
DWG. NO.: 1602070-4

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 1000'
DATE: 3-4-2016
SURVEYED BY: ML/CE
DRAWN BY: JR
APPROVED BY: RMH
SHEET : 4 OF 4


Virgo 23/24 B2AD Fed Com #1H
T18S R30E
T18S R31E
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30

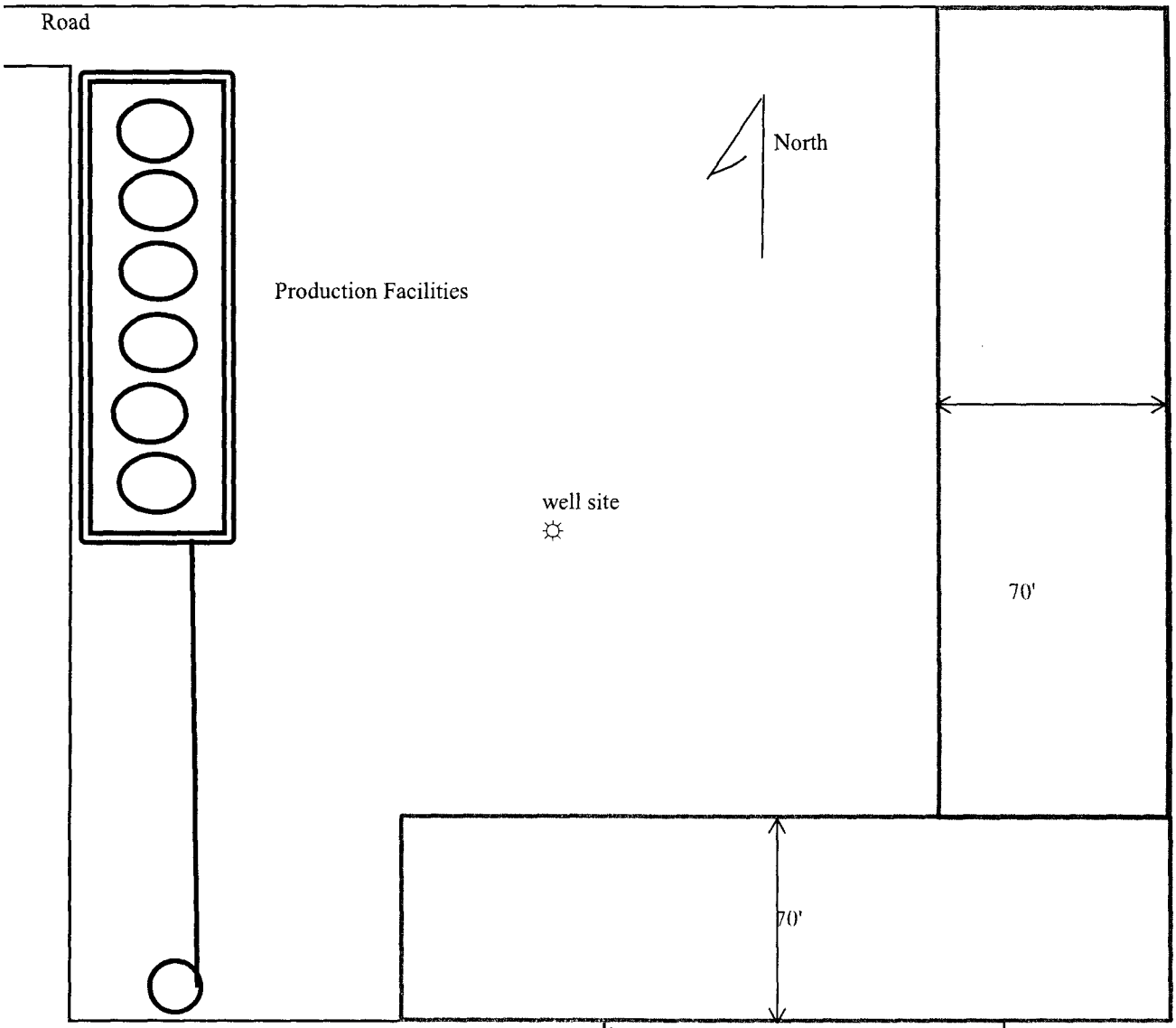
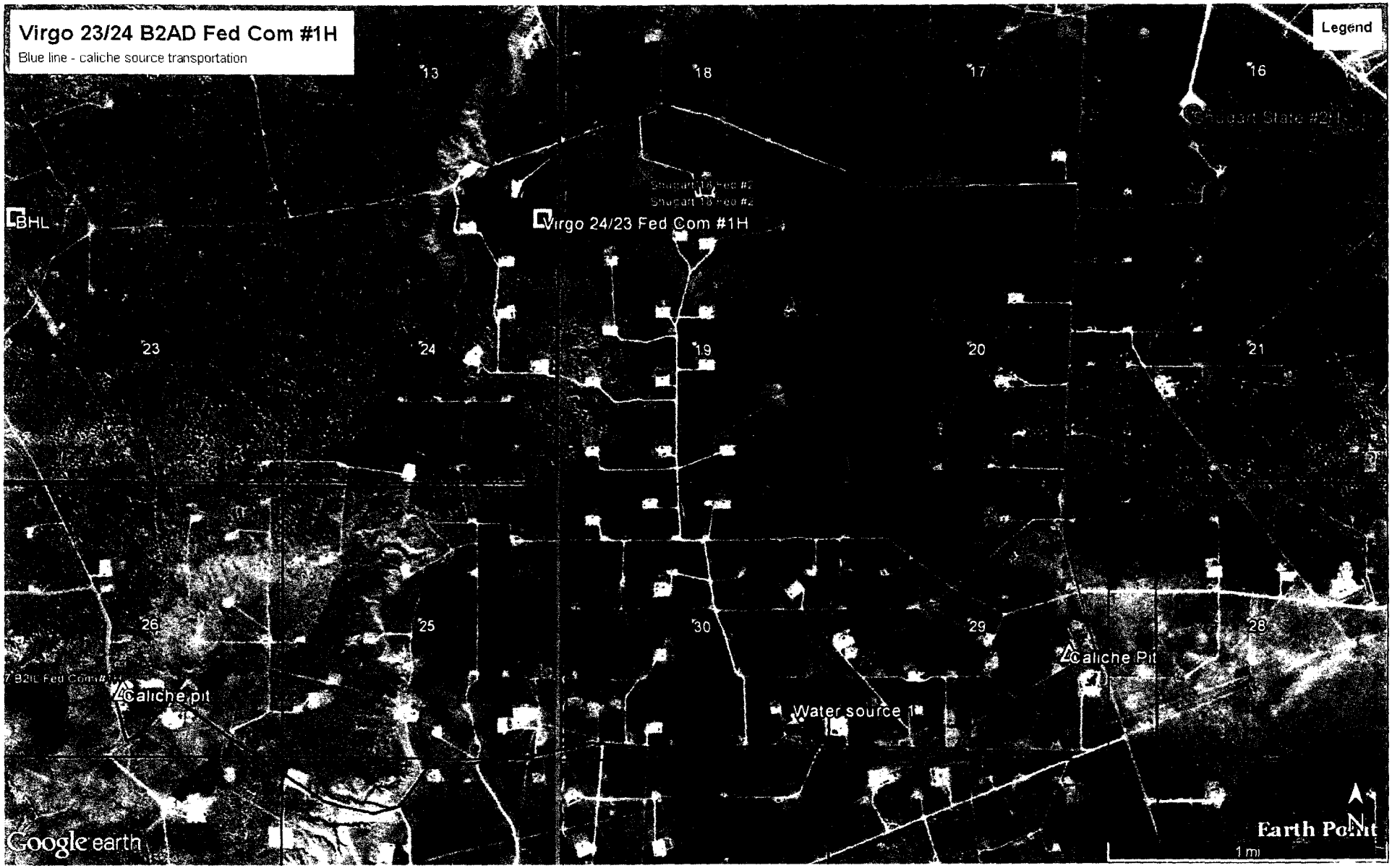
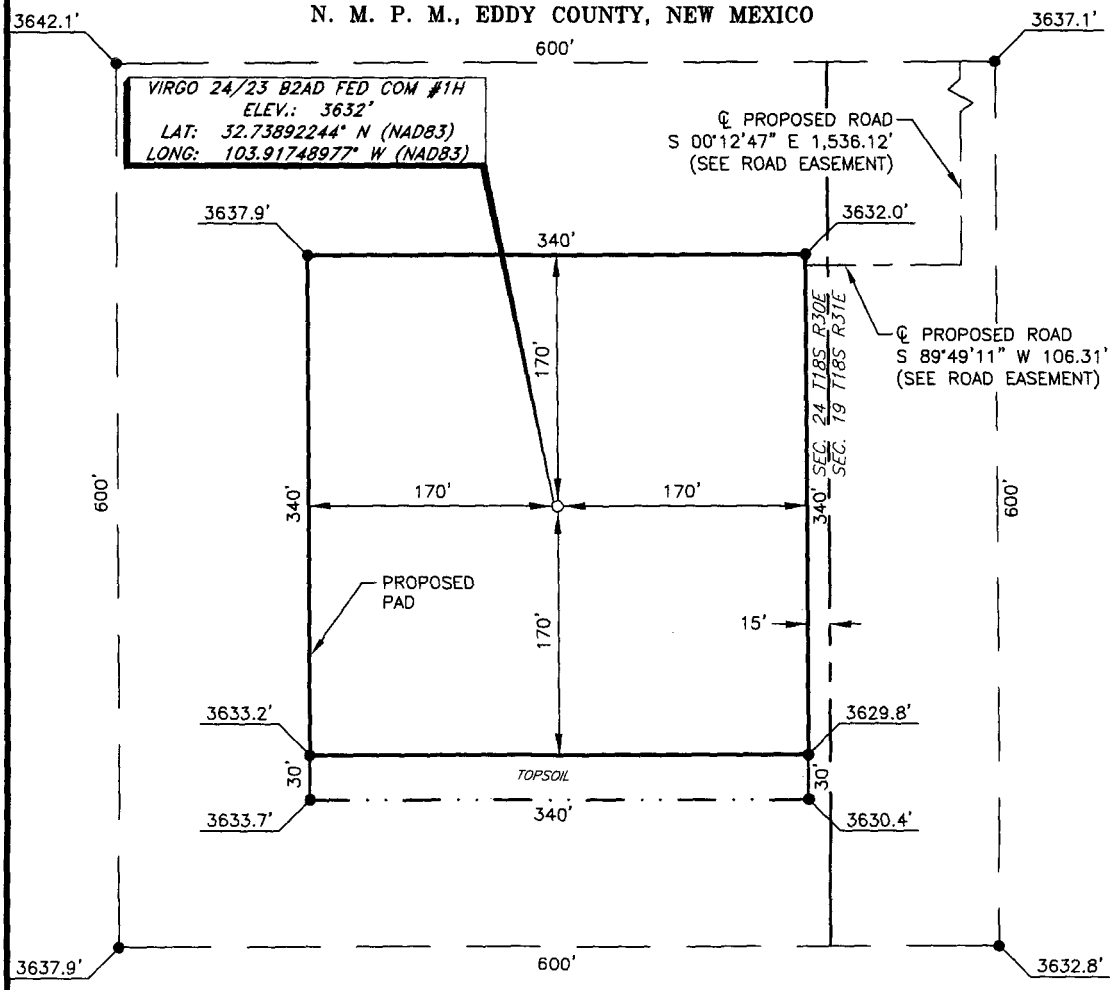


Exhibit 6

Mewbourne Oil Company
Virgo 24-23 B2AD Fed Com #1H
450' FNL & 185' FEL
Sec 24 T18S R30E
Eddy Co NM


Virgo 23/24 B2AD Fed Com #1H
Blue line - caliche source transportation
Legend
BHL
Virgo 24/23 Fed Com #1H
13
18
17
16
23
24
19
20
21
26
25
30
29
28
Caliche pit
Caliche Pit
Water source 1
Google earth
Earth Point
1 mi

MEWBOURNE OIL COMPANY
VIRGO 24/23 B2AD FED COM #1H
(450' FNL & 185' FEL)
SECTION 24, T18S, R30E
N. M. P. M., EDDY COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

From the intersection of CR-222 (Shurgart Rd.) and CR-250 (Grubbs Rd.);

Go North on CR-250 approx. 1.7 miles to a lease road on the left;

Turn left and go West approx. 1.9 miles to proposed road on the left;

Turn left on proposed road and go South approx. 0.3 miles to location on the right.

SCALE: 1" = 100'
0 50 100
BEARINGS ARE NAD 83 GRID - NM EAST DISTANCES ARE GROUND

THIS IS NOT A BOUNDARY SURVEY, APPARENT PROPERTY CORNERS AND PROPERTY LINES ARE SHOWN FOR INFORMATION ONLY. BOUNDARY DATA IS SHOWN FROM A PREVIOUS SURVEY REFERENCED HEREON.

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this unclassified survey of a well location from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for N.M. Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Robert M. Howett NM PS 19680

ROBERT M. HOWETT
NEW MEXICO
19680
PROFESSIONAL SURVEYOR
3/07/16

Firm No.. TX 10193838 NM 4655451

NO.	REVISION	DATE

JOB NO.: LS1602070
DWG. NO.: 1602070PAD

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 100'
DATE: 3-04-2016
SURVEYED BY: ML/CE
DRAWN BY: LPS
APPROVED BY: RMH
SHEET : 1 OF 1

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

11/16/2017

Bond Information

Federal/Indian APD: FED

BLM Bond number: NM1693

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: