

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

David R. Catanach Division Director
Oil Conservation Division



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

Operator Signature Date: 7-19-15

Well information;

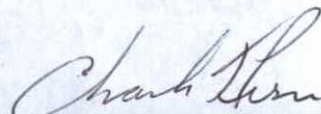
Operator Digen, Well Name and Number Will #2

API# 30-045-35691, Section 15, Township 23 N/S, Range 11 E/W

Conditions of Approval:

(See the below checked and handwritten conditions)

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



NMOCD Approved by Signature

12-8-2015
Date

RV

NOV 30 2015

JUL 21 2015

Form 3160-3
(March 2012)FORM APPROVED
OMB No 1004-0137
Expires October 31, 2014UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFarmington Field Office
Bureau of Land Management NM-119289

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		6. If Indian, Allottee or Tribe Name	
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.	
2. Name of Operator Dugan Production Corp.		8. Lease Name and Well No. Will #2	
3a. Address 709 East Murray Drive Farmington, New Mexico 87401		9. API Well No. 30-045-35691	
3b. Phone No. (include area code) 505-325-1821		10. Field and Pool, or Exploratory Basin Fruitland Coal	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 1553' FSL & 1101' FEL Lat. 36.22363 N, Long. 107.98674 W At proposed prod. zone Same as above. NAD 1983		11. Sec., T. R. M. or Blk. and Survey or Area Sec. 15, T23N, R11W NMPM	
14. Distance in miles and direction from nearest town or post office* Approx. 40-miles southeast of Bloomfield, New Mexico		12. County or Parish San Juan	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1101-Feet		13. State NM	
16. No. of acres in lease 640-Acres		17. Spacing Unit dedicated to this well E/2 - 320.59 Acres	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. N.A.		19. Proposed Depth 600-Feet	
20. BLM/BIA Bond No. on file On File NM-0140		21. Estimated duration 5-days	
22. Elevations (Show whether DF, KDB, RT, GL, etc.) 6254-GL		23. Approximate date work will start* ASAP	
24. Attachments			

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

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

25. Signature <i>Kurt Fagrelus</i>	Name (Printed Typed) Kurt Fagrelus	Date 7/19/2015
Title Vice President		
Approved by (Signature) <i>D. Manrique</i>	Name (Printed Typed)	Date 11/24/15
Title AFM	Office FEO	

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)

A water based gel-mud will be used to drill surface and production casing hole. Standard 2,000 psi BOP will be used to drill production hole. The Fruitland Coal will be completed from approximately 410' - 475'.
The interval will be fracture stimulated.

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

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

NMOCD
TV

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

Certificate Number

B. Well Pad – is shown on **Exhibit 5a**.

There will be no construction activity when soils are water saturated or frozen.

1. Prior to ground disturbance, brush, grasses and sage will be brush-hogged to ground level.
2. Following removal of all vegetation, all topsoil (uppermost 6" of soil) will be removed and stockpiled in the construction zone (See Exhibit 6). Top soil will not be used for any construction related activity. The top soil will be segregated to prevent mixing with sub-surface soils. Stock piles will be shallow enough to prevent sterilization of the soil. Topsoil may contain small pieces of brush-hogged material (grasses, brush and sage). Compaction of the top soil will be minimized by keeping vehicle and equipment traffic from crossing over the stock piles. Sediment, erosion control devices (wattles or fences) or "best management practices" will be used to prevent wind and water erosion of the topsoil until it has been redistributed during reclamation.
3. Construction materials for well pad will be obtained on-site. If additional material is needed, it will be obtained from existing private or approved permitted sources (providing it does not contain any noxious weeds) and will be transported to the construction site with trucks over existing roads in the area.

The maximum cut will be 1.1-feet on the northeast corner (#6) and southeast corner (#3) and there will be a 0.7-foot fill on the northwest corner (#6). See Exhibit 5a.

5. Construction equipment could include a chain saw, brush hog, maintainer, excavator and a dozer.

C. Pipeline – is described in **4.B. above and shown on Exhibit 4**.

There will be no construction activity when soils are water saturated or frozen.

1. Prior to ground disturbance, brush, grasses and sage will be brush-hogged to ground level.
2. Following removal of all vegetation, all topsoil (uppermost 6" of soil) will be removed and stockpiled. The top soil may contain small pieces of brush-hogged material (grasses, brush and sage). The top soil will be segregated to prevent mixing with the sub-surface soil. The top soil will be stacked on the working side and at the greatest distance from the pipe ditch. The sub-surface soil will be stacked on the inside of the topsoil on the working side and closest to the ditch. Once construction of the pipeline is complete, the subsurface soil will be mopped back into the ditch over the pipe. After all of the subsurface soil has been placed over the pipe, the top soil will then be brought in over the top and spread as layer uniform in thickness over the top of the subsurface soil. All necessary precautions to prevent mixing of the top soil and subsurface soil will be taken. (**See Appendix A, page 11**)
3. Construction materials for pipeline will be obtained on-site. If additional material is needed, it will be obtained from existing private or approved permitted sources (providing it does not contain any noxious weeds) and will be transported to the construction site with trucks over existing roads in the area.

7. Methods for Handling Wastes –

- ✓ A. Closed loop drilling system will be used to contain all liquids and solids waste associated

with drilling operations is shown in **Exhibit 6**.

1. System will be designed and maintained to prevent contamination of fresh water and protect wildlife, public health and the environment.
 2. Stockpile top-soil prior to leveling well pad and digging depression. The top-soil will be kept separate from sub-soil and used as a final cover for interim reclamation of the depression and well pad.
 3. A depression approximately 45-feet long by 12-feet wide and 3-feet deep with vertical sidewalls will be constructed. The depression will be constructed with a firm foundation and interior slopes, smooth and free of rocks or sharp edges.
 4. An open-top steel tank approximately 40-feet long by 10-feet wide and 4-feet deep with internal baffles will be set in the depression and used to separate solids from the drilling fluids.
 5. An upright, 400-bbl tank will be set adjacent to the open top steel tank and used for circulation and storage of drilling fluids.
 6. An upright, 400-bbl tank will be set adjacent to the circulation/storage tank and used for storage of fresh water.
 7. Diversionary berms, ditches or sloping will be constructed as necessary to prevent surface run-off from flowing into depression.
 8. Sub-surface soil will be used to construct a 1-foot tall berm around the perimeter of the depression to prevent surface run-off water from entering the depression.
- B. Solids – all accumulated solids (cuttings) in the open-top steel tank and circulating tank will be removed by a vacuum truck and hauled daily to the Industrial Ecosystem Inc. (IEI) land farm for disposal.
- C. Liquids – all liquids (drilling fluids) from the closed loop system will be transferred to the next well in the drilling program for re-use or hauled to Basin Disposal for disposal. All flow back water recovered during completion operations will be collected in a steel storage tank and disposed of at either Basin Disposal or IEI waste disposal facilities.
- D. Spills – any spills of non-freshwater liquid will be reported to the Farmington Field Office of the BLM and the New Mexico Oil Conservation District office within 48-hours. The spill will be cleaned up immediately and transferred to either Basin Disposal or the IEI waste disposal facilities.
- E. Sewage – portable, toilets will be used to collect and contain human sewage. Toilets will be onsite during drilling and completion activity. The toilet holding tanks will be pumped as needed and the contents will be disposed at an approved sewage disposal facility.
- F. Trash – portable dumpsters will be used to collect and contain garbage and other waste material and will be onsite during drilling and completion activity. The contents of the dumpsters will be removed as needed and disposed of at an approved waste disposal facility.

EXHIBIT B.

Operations Plan

Will #2

Lease #NM-119289

NESE of Section 15, T23N, R11W

1553' FSL and 1101' FEL

San Juan County, New Mexico

1. APPROXIMATE FORMATION TOPS:

Kirtland	Surface
Fruitland	175'
Pictured Cliffs	475'
Total Depth	600'

Catch samples every 10 feet from 350-feet to total depth.

2. LOGGING PROGRAM:

Run cased hole GR-CCL-CNL from total depth to surface.

3. CASING PROGRAM:

<u>Hole</u> <u>Size</u>	<u>Casing</u> <u>Size</u>	<u>Wt./ft.</u>	<u>Setting</u> <u>Depth</u>	<u>Grade and</u> <u>Condition</u>
12-1/4"	8-5/8"	24#	120'	J-55
7-7/8"	5-1/2"	15.5#	600'	J-55

Plan to drill a 12-1/4" hole and set 120' of 8-5/8" OD, 24#, J-55 surface casing. Then plan to drill a 7-7/8" hole to total depth with gel-water mud program to test the Fruitland Coal. 5-1/2", 15.5#, J-55 production casing will be run and cemented. Cased hole GR-CCL-CNL log will be run. Productive zone will be perforated and fractured. After frac, the well will be cleaned out and production equipment will be installed.

4. CEMENTING PROGRAM:

Surface: Cement to surface with 75 sks (98.25 Cu.ft) Type III cement w/ 2 % bwoc CaCl_2 + 0.25 lbs/sk Celloflake + 53.6% Fresh Water (15.00 lbs/gal, 1.31 Cu.ft/sk). Circulate cement to surface.

Production: Cement w/ 29 sks Premium Lite FM + 8% bwoc Bentonite + 3% bwoc Calcium Chloride + 0.25 lbs/sk Cello Flake + 5 lbs/sack LCM-1 + 0.4% bwoc Sodium Metasilicate + 0.4 % bwoc FL-52A + 112.3% Fresh Water (12.1 lbs/gal, 2.13 cu.ft/ft - 61 cu.ft slurry). Tail w/ 88 sks Type III Cement + 1% bwoc Calcium Chloride + 0.25 lbs/sk Cello flake + 0.2% bwoc FL-52A + 59% Freshwater (14.6 lbs/gal, 1.38 cu.ft/ft - 121 cu.ft). Total slurry for the job - 182 Cu.ft. Circulate cement to surface.

An adequate spacer will be pumped ahead of the cement slurry to help prevent mud contamination of the cement. An adequate number of casing centralizers will be run through useable water zones to ensure that casing is centralized through these zones. The adequate number of centralizers will be determined based on API standards. Centralizers to impart a swirling action around the casing will be used just below and into the base of the lowest usable water zone. These devices will assist mud displacement, increase cement bonding potential and create an effective hydraulic seal. A chronological log will be kept which records the pump rate, pressure, slurry density, and slurry volume for the cement job. The log will be sent to the BLM after completion of the job.

5. **Maximum Anticipated Bottom Hole Pressure** - 300 psi.
6. **Drilling Fluid** - will be fresh water with bentonite 8.9#/gal.
7. **WELLHEAD EQUIPMENT:**
 - Huber 8-5/8"x5-1/2" casing head, 1000# WP, tested to 2000#. Huber 5-1/2"x2-7/8" tubing head, 1000# WP, tested to 2000#.
8. **Blow-Out Preventer Equipment (BOPE): Exhibit 8.**
 - Annular preventer, double ram, or 2 rams with one being blind and one being a pipe ram.
 - Kill line (2" minimum)
 - 1 kill line valve (2" minimum)
 - 1 choke line valve
 - 2 adjustable chokes
 - Upper kelly cock valve with handle available.
 - Safety valve and subs to fit all drill string connections in use.
 - Pressure gauge on choke manifold.
 - 2" minimum choke line.
 - Fill-up line.

Working pressure for all BOPE will be 2,000 psi or greater. Will test BOPE (blind rams, pipe rams, choke manifold and surface casing) separately. Each test will include a low pressure test to 250-psig held for five minutes and a high pressure test to 800-psig held for thirty minutes (with no more than a 10-percent pressure drop during the duration of the tests). If a 10-percent

or greater pressure drop occurs; a packer will be run to isolate the surface casing and BOPE to locate the source of the leak.

9. **Contacts:** Dugan Prod. Corp. Office & Radio Dispatch:

(505) 325-1821

Gerald Wright

Kurt Fagrelus

John Alexander

(505) 632-5150 (H)

(505) 325-4327 (H)

(505) 325-6927 (H)

(505) 330-9585 (M)

(505) 320-8248 (M)

(505) 320-1935 (M)

**Vicinity Map & Driving Directions
Dugan Production Corporation
WILL #2
1553' FSL, 1101' FEL
Section 15, T-23-N R-11-W, N.M.P.M.
San Juan County, New Mexico**

EXHIBIT 2.

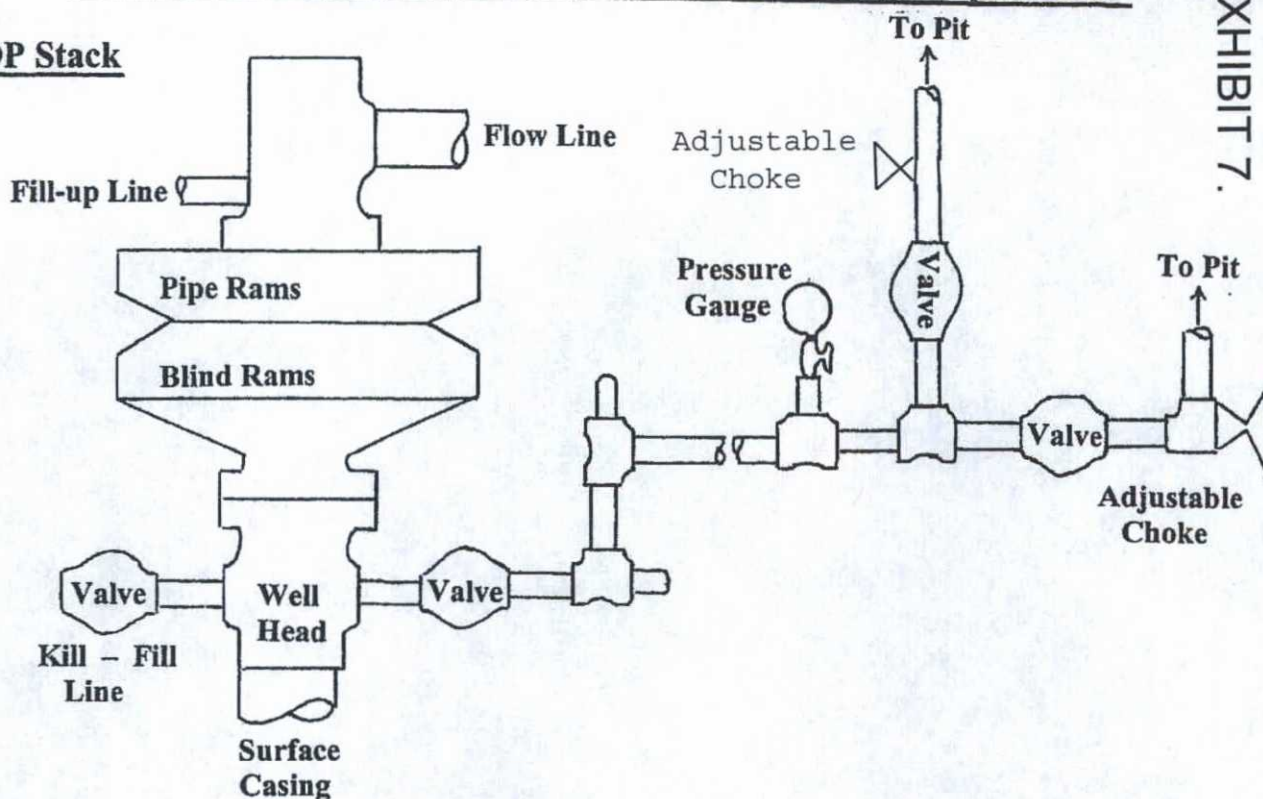
Driving Directions

1. From the intersection of Hwy 64 & Hwy 550 in Bloomfield, NM go South on Hwy 550, 28.3 miles to NM 57 at the Blanco Trading Post turnoff.
2. Turn right/West on NM-57, go 10 miles to the intersection of CR7650 (Indian Services Route 7023).
3. Turn right/West onto CR7650 (Indian Services Route 7023), go 4.8 Miles.
4. Turn right/North onto field road follow to staked access.
5. Continue on field road passing through gate at approx. 1160' (0.22 Mile) from CR7650.
6. Continue on field road and then turn left at approx. 5600' (1.06 Miles) from CR7650.
7. Continue on field road turn left at 6115' (1.16 Miles) from CR7650.
8. Continue 1.5 miles on field road passing through Dugan Little Joe #90S and on to Dugan Little Joe #91 locations turn right/North to beginning of staked new access.

Well Control Equipment Schematic for 2,000 psi BOP

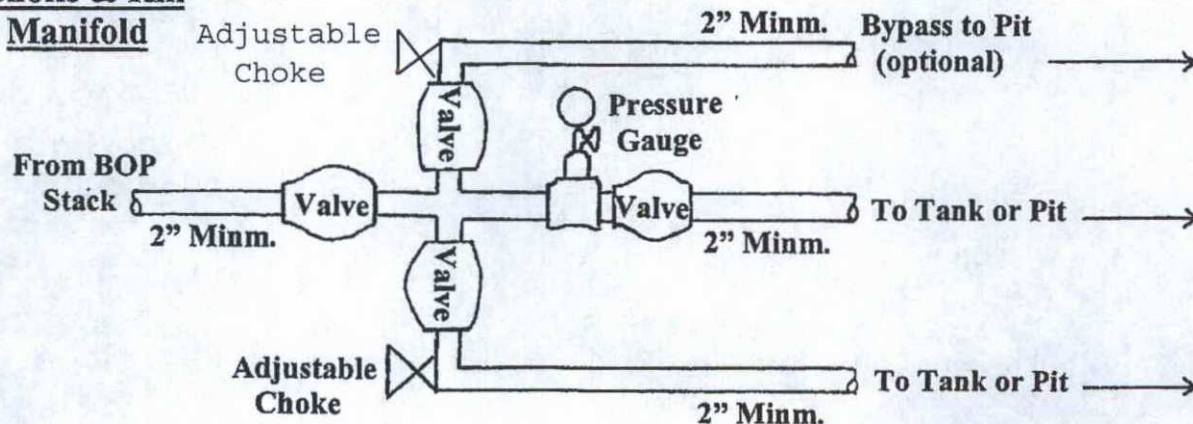
EXHIBIT 7.

BOP Stack



Choke & Kill

Manifold



Working Pressure for all equipment is 2,000 psi or greater

DUGAN PRODUCTION CORP.

Will #2