

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: 4-25-15

Well information;

Operator Dugan, Well Name and Number Helsinki Com #91

API# 30-045-35686, Section 9, Township 23 N/S, Range 10 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

2-8-2016  
Date



## OIL CONS. DIV DIST. 3

JAN 29 2016

RECEIVED

APR 27 2015

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

## APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. <b>NM-51005</b>
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name <b>Helsinki Com #91</b>
2. Name of Operator <b>Dugan Production Corp.</b>		7. If Unit or CA Agreement, Name and No. <b>NMNM-134509</b>
3a. Address <b>709 East Murray Drive Farmington, New Mexico 87401</b>		8. Lease Name and Well No. <b>30-045-35686</b>
3b. Phone No. (include area code) <b>505-325-1821</b>		9. API Well No. <b>Basin Fruitland Coal</b>
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface <b>1100' FSL &amp; 1650' FEL</b> Lat. <b>36.23702 N</b> , Long. <b>107.89781 W</b> At proposed prod. zone <b>Same as above.</b> NAD 1983		10. Field and Pool, or Exploratory <b>Basin Fruitland Coal</b>
11. Sec., T. R. M. or Blk. and Survey or Area <b>Sec. 9, T23N, R10W NMMPM</b>		12. County or Parish <b>San Juan</b>
13. State <b>NM</b>		14. Distance in miles and direction from nearest town or post office* <b>Approx. 40-miles southeast of Bloomfield, New Mexico</b>
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) <b>1100-Feet</b>	16. No. of acres in lease <b>1239.82-Acres</b>	17. Spacing Unit dedicated to this well <b>S/2 - 320.0 Acres</b>
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. <b>1250-ft.</b>	19. Proposed Depth <b>1070-ft.</b>	20. BLM/BIA Bond No. on file <b>On File NMB-000769</b>
21. Elevations (Show whether DF, KDB, RT, GL, etc.) <b>6585-GL</b>	22. Approximate date work will start* <b>ASAP</b>	23. Estimated duration <b>5-days</b>

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

25. Signature <i>Kurt Fagrelus</i>	Name (Printed Typed) <b>Kurt Fagrelus</b>	Date <b>4-25-2015</b>
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Title **Vice President**

Approved by (Signature) <i>[Signature]</i>	Name (Printed Typed) <b>AFN</b>	Date <b>1/27/16</b>
Title	Office <b>FFO</b>	

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 845' - 870'. The interval will be fracture stimulated.

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

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

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



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

District II  
811 S. First Street, Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720

District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV  
1220 S. St. Francis Drive, Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised August 1, 2011

Submit one copy to  
Appropriate District Office

OIL CONSERVATION DIVISION  
1220 South St. Francis Drive  
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number <b>30-045-35686</b>		<sup>2</sup> Pool Code 71629	<sup>3</sup> Pool Name BASIN FRUITLAND COAL
<sup>4</sup> Property Code <b>31591A</b>	<sup>5</sup> Property Name HELSINKI COM		<sup>6</sup> Well Number 91
<sup>7</sup> GRID No. 006515	<sup>8</sup> Operator Name DUGAN PRODUCTION CORPORATION		<sup>9</sup> Elevation 6585'

<sup>10</sup>Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	9	23N	10W		1100	SOUTH	1650	EAST	SAN JUAN

<sup>11</sup>Bottom Hole Location If Different From Surface

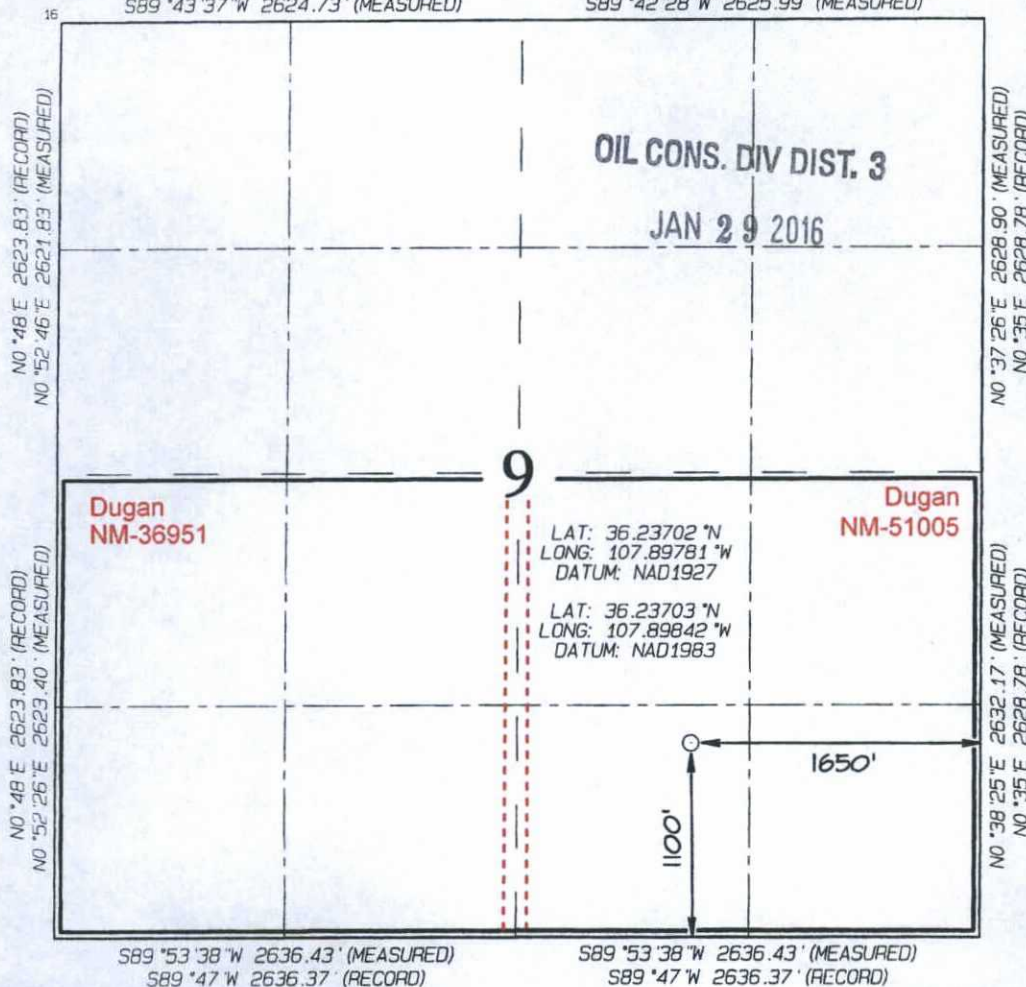
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

<sup>12</sup> Dedicated Acres 320.0 Acres - (S/2)	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

S89°41'W 2627.46' (RECORD)  
S89°43'37"W 2624.73' (MEASURED)

S89°41'W 2627.46' (RECORD)  
S89°42'28"W 2625.99' (MEASURED)



<sup>17</sup> OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

*Kurt Fagrelus* 2/16/2015  
Signature Date

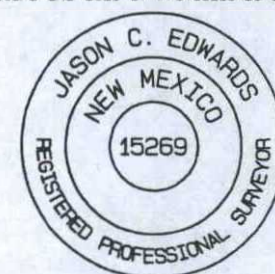
Kurt Fagrelus  
Printed Name  
kfagrelus@duganproduction.com  
E-mail Address

<sup>18</sup> SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised: SEPTEMBER 24, 2014  
Date of Survey: AUGUST 12, 2014

Signature and Seal of Professional Surveyor



JASON C. EDWARDS

Certificate Number 15269



2. Following removal of all vegetation, the topsoil (uppermost 6" of soil) will be removed and stockpiled for future interim or final reclamation use. Topsoil may contain chipped mulch but will not include stumps or limbs.
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 and will be transported to the construction site with trucks over existing roads in the area.

**The maximum cut will be 2-feet on the northwest corner (#5) and there will be 4-feet of fill on the southeast corner (2).**

4. As determined during the onsite inspection on March 12, 2015, the following best management practices will be done: **Surface equipment will be painted "Covert Green", a drain to collect surface runoff will be constructed on the north side of pad draining to the east then down and away from the southeast corner of pad.**
  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 4a and 4b.**
1. Any trees greater than 3-inches in diameter will be cut at ground level, de-limbed and the trunks will be stacked at a location accessible to wood gatherers. Remaining stumps will be buried in cut slopes and limbs will be chipped and used as surface mulch during interim reclamation activity. There are no trees that need to be cut.

After removal of any trees and prior to ground disturbance, remaining brush will be brush-hogged to ground level.

2. Following removal of all vegetation, topsoil (uppermost 6" of soil) will be removed and stockpiled for future interim or final reclamation use. Topsoil may contain chipped mulch but will not include stumps or limbs.
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 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 7.**
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 or final 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.



## EXHIBIT B.

**Operations Plan**  
Helsinki Com #91  
Lease #NM-51005  
SWSE of Section 9, T23N, R10W  
1100' FSL and 1650' FEL  
San Juan County, New Mexico

**1. APPROXIMATE FORMATION TOPS:**

Ojo Alamo	125'
Kirtland	205'
Fruitland	590'
Pictured Cliffs	920'
<b>Total Depth</b>	<b>1070'</b>

Catch samples every 10 feet from 800-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#	1070'	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  $\text{CaCl}_2$  + 0.25-lbs/sk cello flake + 53.6% fresh water (15.00-lbs/gal, 1.31-cu.ft/sk). Circulate cement to surface.

Production Stage- Cement w/92-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 - 196 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% fresh water (14.6-lbs/gal,



1.38-cu.ft/ft - 121-cu.ft).  
Total slurry for the job - 317-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)



**Directions from the Intersection of US Hwy 550 & US Hwy 64**

**in Bloomfield, NM to Dugan Production Corporation Helsinki Com #91**

**1100' FSL & 1650' FEL, Section 9, T23N, R10W, N.M.P.M., San Juan County, NM**

**Latitude: 36.23703°N Longitude: 107.89842°W Datum: NAD1983**

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 27.9 miles to State Hwy #57 @ Mile Marker 123.4;

Go Right (South-westerly) on State Hwy #57 for 3.1 miles to fork in road;

Go Left (South-westerly) remaining on State Hwy #57 for 2.6 miles to fork in road;

Go Right (Westerly) on County Road #7635 for 0.9 miles to fork in road;

Go Left (Southerly) remaining on County Road #7635 for 3.1 miles to fork in road;

Go Right (Southerly) exiting County Road #7635 for 0.9 miles to a 4-Way intersection;

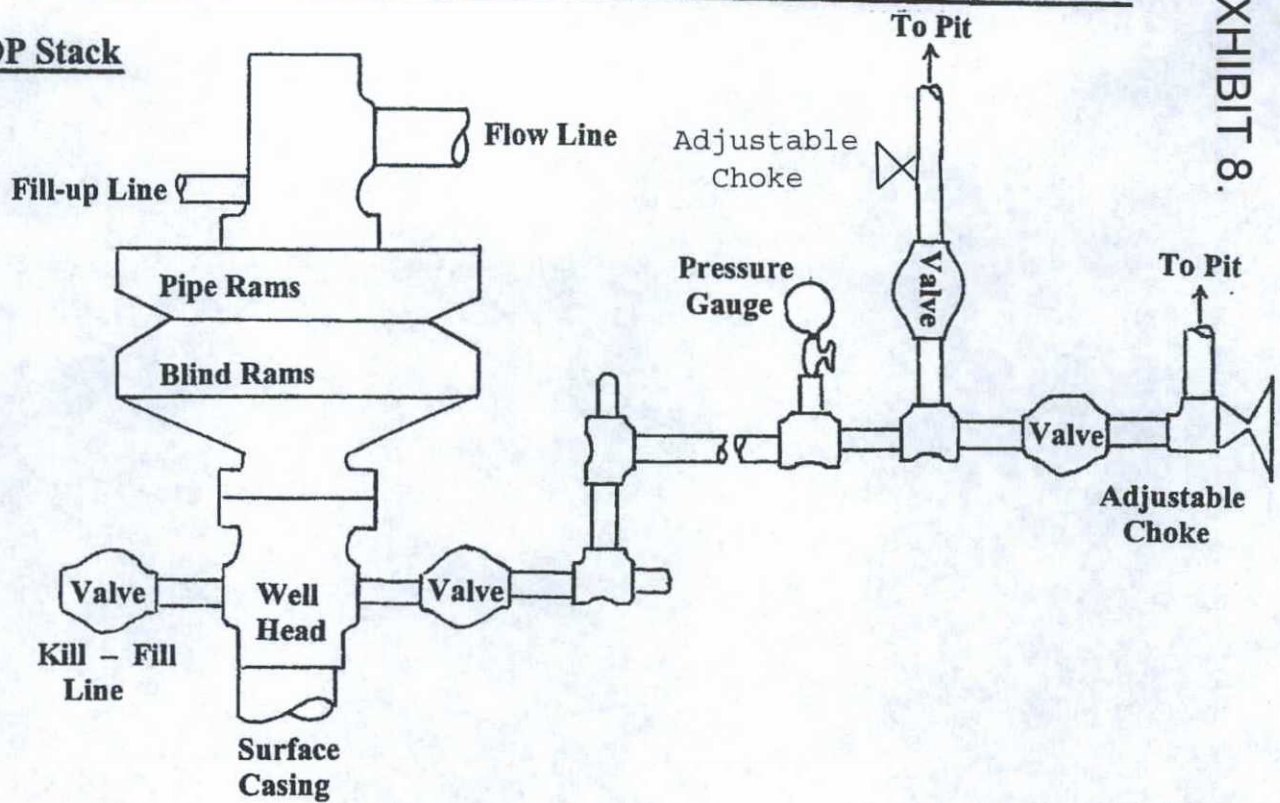
Go Straight (Southerly) for 0.8 miles to new access on right-hand side of existing roadway which continues for 932.2' to staked Dugan Helsinki Com #91 location.



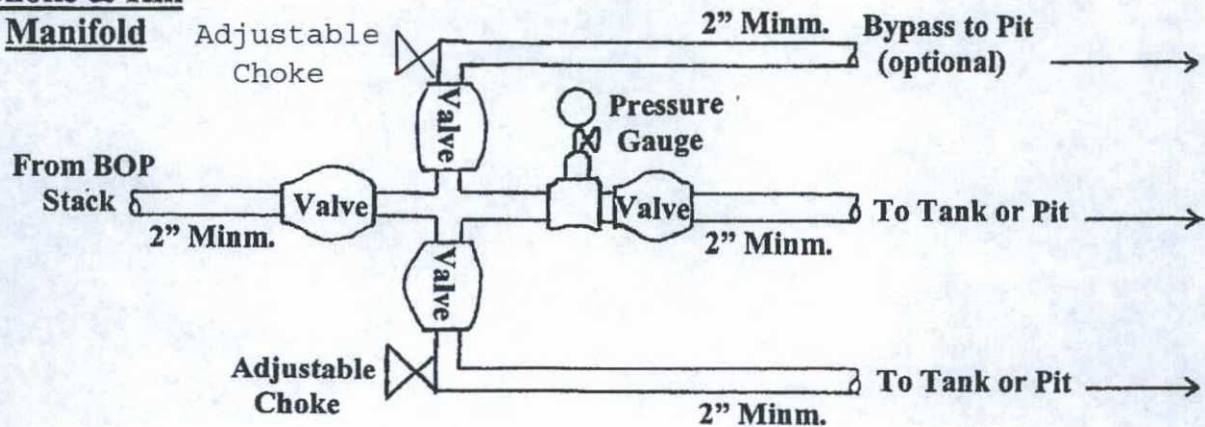
## Well Control Equipment Schematic for 2,000 psi BOP

EXHIBIT 8.

### BOP Stack



### Choke & Kill Manifold



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

**DUGAN PRODUCTION CORP.**  
Helsinki Com #91