State of New Mexico
Energy, Minerals and Natural Resources Department

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

Operator Signature Date: 1/29/2018
Well information;
Operator Dugan, Well Name and Number PGA Unit SWD 33 4

API# 30-045-35870, Section 33, Township 24 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
- ○ Submit Gas Capture Plan form prior to spudding or initiating recompletion operations
- ✓ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ✓ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- ✓ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.

✓ Must acquire an approved SWD permit prior to drilling.

NMOCD Approved by Signature

6-13-2018
Date

1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3460 • Fax (505) 476-3462 • www.emnrd.state.nm.us/ocd

NMOCD

MAY 31 2018

DISTRICT III

Form 3160-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☑ DRILL ☐ REENTER	5. Lease Serial No. NMNM112959
1b. Type of Well: ☐ Oil Well ☐ Gas Well ☑ Other INJ-DIS ☑ Single Zone ☐ Multiple Zone	6. If Indian, Allotee or Tribe Name
2. Name of Operator DUGAN PRODUCTION CORPORATION	7. If Unit or CA Agreement, Name and No. NMNM128992X
3a. Address 709 E Murray Dr. Farmington NM 87401 / 3b. Phone No. (include area code) (505)325-1821	8. Lease Name and Well No. PGA UNIT SWD 33 4
4. Location of Well (Report location clearly and in accordance with any State requirements.*)	9. API Well No. 30-045-35870
At surface SESE / 271 FSL / 184 FEL / LAT 36.263756 / LONG -107.999818	10. Field and Pool, or Exploratory ENTRADA SANDSTONE / ENTRADA SA
At proposed prod. zone SESE / 271 FSL / 184 FEL / LAT 36.263756 / LONG -107.999818	11. Sec., T. R. M. or Blk. and Survey or Area SEC 33 / T24N / R11W / NMP
14. Distance in miles and direction from nearest town or post office* 40 miles	12. County or Parish SAN JUAN / 13. State NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 184 feet	16. No. of acres in lease 1559.01	17. Spacing Unit dedicated to this well 640
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 0 feet	19. Proposed Depth 6670 feet / 6670 feet	20. BLM/BIA Bond No. on file FED: NM0140
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6283 feet	22. Approximate date work will start* 04/23/2018	23. Estimated duration 5 days

24. Attachments

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

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

25. Signature (Electronic Submission)	Name (Printed/Typed) Tyra Feil / Ph: (505)325-1821	Date 01/29/2018
Title Authorized Representative		
Approved by (Signature) /s/ Monica Kuehling	Name (Printed/Typed)	Date 5/29/2018
Title AFM	Office FARMINGTON	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

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

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

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

NMOCD

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

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

Form C-102
Revised August 1, 2011

Submit one copy to Appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number	*Pool Code	*Pool Name
30-045-35870	96436	SWD; ENTRADA

*Property Code	*Property Name	*Well Number
321514	PGA UNIT SWD 33	4

*OGRID No.	*Operator Name	*Elevation
006515	DUGAN PRODUCTION CORPORATION	6283'

10 Surface Location

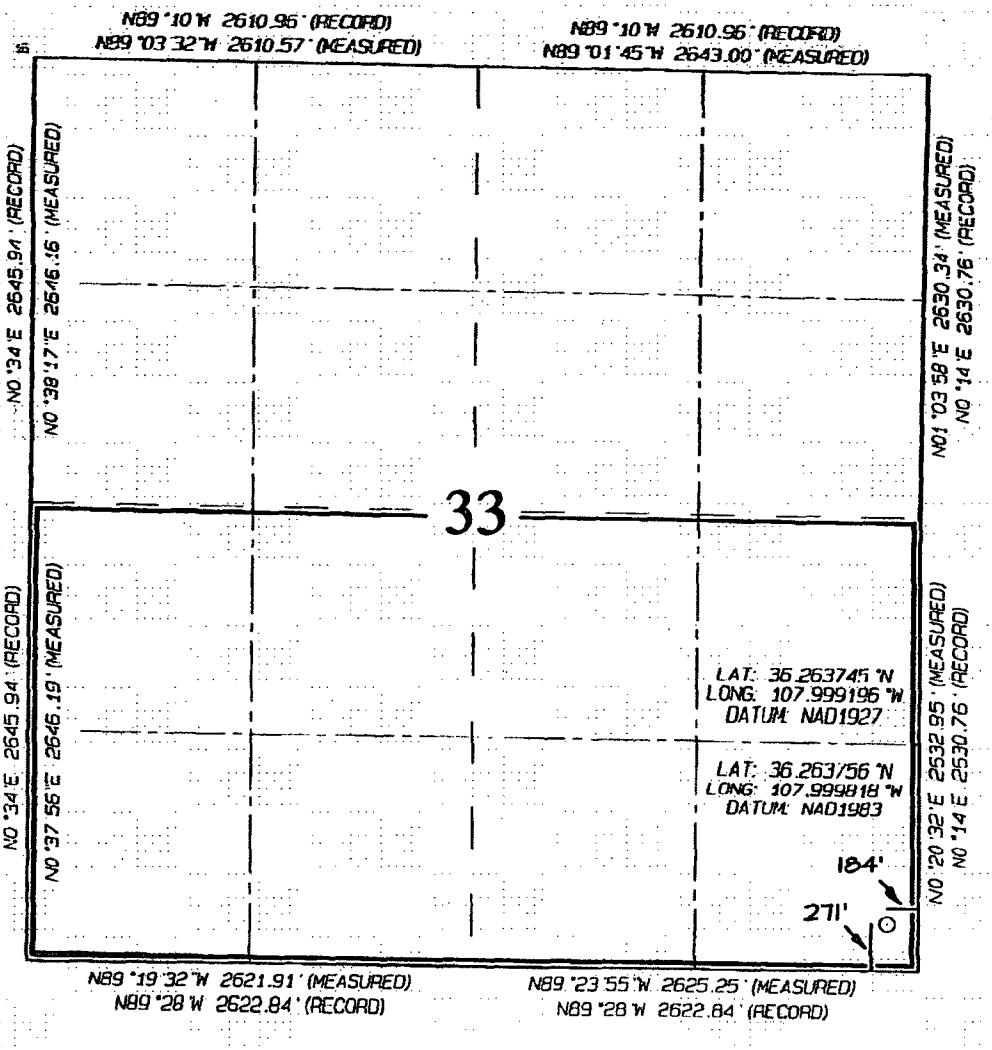
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	33	24N	11W		271	SOUTH	184	EAST	SAN JUAN

11 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

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
640.0 Acres (Entire Section)			

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



17 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 Fagrelius 12/13/2017
Signature Date

Kurt Fagrelius
Printed Name

kfagrelius@duganproduction.com
E-mail Address

18 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: NOVEMBER 27, 2017
Survey Date: OCTOBER 27, 2017

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

EXHIBIT B.

Operations Plan
PGA Unit SWD 33 #4
Lease # NMNM-112959
SESE of Section 33, T24N, R11W
271' FSL and 184' FEL
San Juan County, New Mexico

San Juan County, New Mexico

1. **APPROXIMATE FORMATION TOPS:**

Kirtland	**Surface**
Fruitland	425'
Pictured Cliffs	685'
Lewis	835'
Cliff House	1370'
Menefee	1540'
Point Lookout	3075'
Mancos	3235'
Gallup	3935'
Greenhorn	4990'
Graneros	5050'
Dakota	5075'
Morrison	5365'
Bluff	5890'
Todilto	6265'
Entrada	6320'
Total Depth	**6670'**

Catch samples every 10 feet from 3500' to 4100' and from 5800' to total depth.

2. **LOGGING PROGRAM:**

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

3. **CASING PROGRAM:**

Hole Size	Casing Size	Wt./ft.	Setting Depth	Grade and Condition
12-1/4"	9-3/4"	36#	352'	J-55
8-3/4"	7"	23#	5215'	K-55
8-3/4"	7"	26#	6670	K-55

Plan to drill a 12-1/4" hole and set 352' of 9-3/4" OD, 36#, J-55 Surface casing. Then plan to drill a 8-3/4" hole to total depth with gel-water mud program. 7", 23 # K-55 casing to 5215' and 7", 26# K-55 casing to 6670' will be run and cemented in two stages. Open hole IES and CDL logs will be run. Injection zone will be perforated and acidized. After

completion, the well will be cleaned out and injection equipment will be installed.

4. **CEMENTING PROGRAM:**

Surface: Cement w/ 200 sacks, 234 cu ft (42 bbls, 1.17 cu ft/sk, 15.8#, 5.24 gal/sack) Halliburton cement blend, Class G cement w/ 0.125 lb/sk Pol-e-flake and 2% CaCl2.
Circulate cement to surface.

Production: :Cement in two stages w/ DV tool set @ 3175'. Cement stage I w/ 425 sks, 829 Cu.ft, Halliburton cement blend, Class G w/ 35% Poz (12.4 #/gal, 1.95 cu.ft/sk,6% bentonite, 2-1/2 # Kol-Seal/sk, 1/8# Pol-e-flake, 3% bwoc HALAD) as lead cement followed by 50 sks (69 Cu.ft) Class G w/ 50% poz, 1% bwoc bentonite, 5 lb/sk Kol-seal, 0.125 lb/sk Pol-E-Flake, 0.1% bwoc CFR3 and 2% CaCl2 as tail (13.5 #/gal, 1.38 cu.ft/sk, 5.85 gals/sk mix water). Cement volume for first stage: 898 Cu.ft, 160 bbls. Open stage tool. Circulate hole for 4 hours. Cement Stage II w/ 330 sks, 643.5 Cu.ft, Halliburton cement blend, Class G w/ 35% Poz (12.3 #/gal, 1.95 cu.ft/sk,6% bentonite, 2-1/2 # Kol-Seal/sk, 1/8# Pol-e-flake, 3% bwoc HALAD) as lead cement followed by 120 sks (165.6 Cu.ft) Class G w/ 50% Poz, 1% bwoc bentonite, 5 lb/sk Kol-seal, 0.125 lb/sk Pol-E-Flake and 2% CaCl2) as tail (13.5 #/gal, 1.38 cu.ft/sk, 5.85 gals/sk mix water). Cement volume for second stage: 809 Cu.ft, 144 bbls. Total Cement for job, 1707 Cu.ft, 304 bbls 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 3000#. Huber 5-1/2"x2-7/8" tubing head, 2000# WP, tested to 2000#.

8. **Blow-Out Preventer Equipment (BOPE) for a 3,000 psi**

system: Exhibits 7a and 7b.

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 3,000-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

Marty Foutz	Kurt Fagrelius	John Alexander
(505)402-4117 (H)	(505)325-4327 (H)	(505)325-6927 (H)
(505)486-5488 (M)	(505)320-8248 (M)	(505)320-1935 (M)

Aliph Rena
505-516-0206 (H)
505-360-9192 (M)

Operator Name: DUGAN PRODUCTION CORPORATION

Well Name: PGA UNIT SWD 33 **Well Number:** 4

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead	1	0	352	200	1.17	15.8	234		Halliburton cement blend	0.125 lb/sk Pol-e-flake and 2% CaCl2
PRODUCTION	Lead	3175	0	5215	425	1.95	12.4	829		Halliburton cement blend	35% poz, 6% bentonite, 2-1/2# Kol-Seal/sk, 1/8# Pol-e-flake, 3% bwoc HALAD
PRODUCTION	Tail		0	6670	50	1.38	13.5	69		Halliburton cement blend	50% poz, 1% bwoc bentonite, 5 lb/sk Kol-seal, 0.125 lb/sk Pol-e-flake, 0.1% bwoc CFR3 and 2% CaCl2
PRODUCTION	Lead		0	6670	330	1.95	12.3	165.6		Halliburton cement blend	35% poz, 6% bentonite, 2-1/2# Kol-Seal/sk, 1/8# Pol-e-flake, 3% bwoc HALAD
PRODUCTION	Tail		0	6670	120	1.38	5.85	809		Halliburton cement blend	50% poz, 1% bwoc bentonite, 5 lb/sk Kol-seal, 0.125 lb/sk Pol-E-Flake and 2% CaCl2

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: BOP and a sufficient amount of gel, starch and Barite to control all conditions

Describe the mud monitoring system utilized: A closed-loop drilling system will be used to contain all liquids and solids waste associated with the drilling operations. 1) System will be designed and maintained to prevent contamination of fresh water and protect wildlife, public health and the environment. 2) Stockpile topsoil prior to leveling well pad and digging pit. The topsoil will be kept separate from subsoil and used as a final cover for interim reclamation of the pit and well pad. 3) A pit approximately 45 feet long by 12 feet wide and 3 feet deep with vertical sidewalls will be constructed. The pit 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 pit 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 to prevent surface run-off from flowing into pit. 8) Sub-surface soil will be used to construct a 1 foot tall berm around the perimeter of the pit to prevent surface run-off from entering the pit. 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 Ecosystems Inc. (IEI) landfarm 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 flowback 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 Division District office within 48 hours. The spill will be cleaned up immediately and transferred to either Basin Disposal or 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 disposed of at an approved sewage disposal facility. F. Trash - portable dumpsters will be used to collect garbage and other waste material and will be onsite during drilling and completion activity. G. After the drilling and completion rigs and portable toilet and dumpsters are removed from the location, Dugan will be responsible for any clean-up of location necessary. Also, the area will be maintained free of trash and debris for the life of the well. H. During the drilling, completion and production of the well, there will not be any chemicals subject to reporting under SARA Title III greater than 10,000 pounds in weight, used, produced, stored, transported or disposed of annually at the well site. I. During the drilling, completion, and production of the well, there will not be any extremely hazardous substances as defined in 40 CFR 355 used, produced, stored, transported or disposed of at the well site.

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
352	6670	WATER-BASED MUD	8.9	8.9	66.6		7		1500		

Section 6 - Test, Logging, Coring

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

A 3-step test will be conducted and the well will be placed into production

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

CNL,GR

Coring operation description for the well:

Samples will be caught every 10 feet from 3500' to 4100' and from 5800' to total depth.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 300 **Anticipated Surface Pressure:** -1167.41

Anticipated Bottom Hole Temperature(F): 150

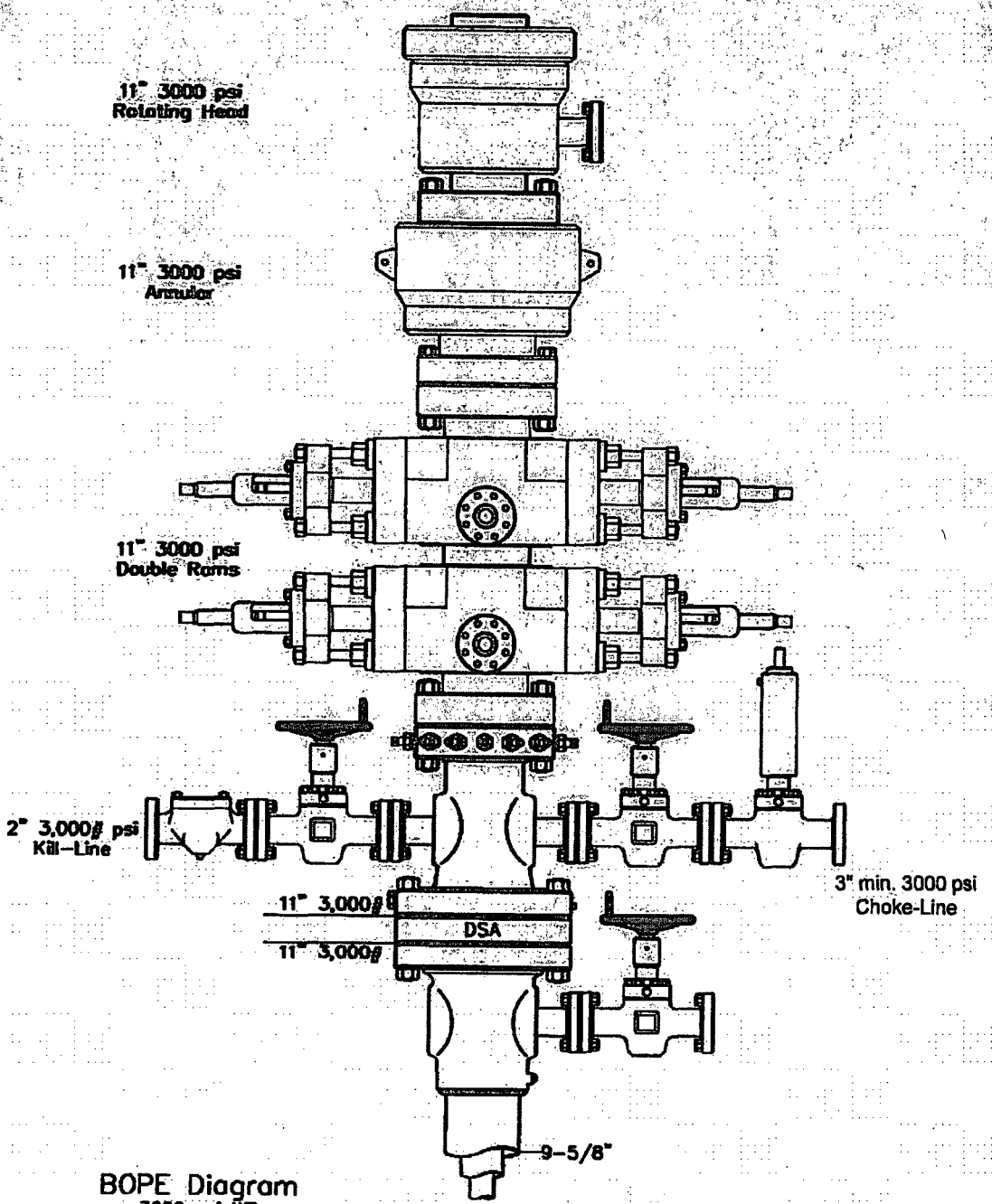
Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

EXHIBIT 7a

Well Control Equipment Schematic for 3,000 psi BOP



BOPE Diagram
3000 psi WP

Dugan Production Corp.
PGA SWD 33 #4

EXHIBIT 2

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

in Bloomfield, NM to Dugan Production Corporation PGA Unit SWD 33 #4

271' FSL & 184' FEL, Section 33, T24N, R11W, N.M.P.M., San Juan County, NM

Latitude: 36.263756°N Longitude: 107.999818°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 3.2 miles to fork in roadway;

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

Go Right (Westerly) exiting State Hwy #57 onto County Road #7635 for 0.9 miles to fork in roadway;

Go Left (Southerly) remaining on County Road #7635 for 1.4 miles to fork in roadway;

Go Right (Westerly) exiting County Road #7635 onto County Road #7515 for 0.7 miles to fork in roadway;

Go Left (South-westerly) exiting County Road #7515 onto existing roadway for 1.4 miles to fork in roadway;

Go Right (Westerly) for 2.0 miles to fork in roadway;

Go Left (Westerly) which is straight for 0.2 miles to fork in roadway;

Go Right (Westerly) which is straight for 2.5 miles to begin Dugan PGA Unit SWD 33 #4 proposed access on right-hand side of roadway past cattle guard at corral, which continues for 88.2' to staked Dugan PGA Unit SWD 33 #4 proposed location.