

District I
4625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., 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 Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-101
Revised December 16, 2011

OIL CONS. DIV DIST. 3

JAN 06 2016

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address Dugan Production Corp. 709 East Murray Drive Farmington, New Mexico 87401		⁴ OGRID Number 006515
		³ API Number 30-045-35745
⁶ Property Code 315782	⁵ Property Name Sunflower Unit	⁸ Well No. #1

⁷ Surface Location

UL - Lot P	Section 2	Township 24N	Range 13W	Lot Idn	Feet from 1166	N/S Line South	Feet From 692	E/W Line East	County San Juan
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⁸ Pool Information

Basin Fruitland Coal - 71629

Additional Well Information

⁹ Work Type N	¹⁰ Well Type G	¹¹ Cable/Rotary R	¹² Lease Type S	¹³ Ground Level Elevation 6296'
¹⁴ Multiple N	¹⁵ Proposed Depth 1100'	¹⁶ Formation Fruitland Coal	¹⁷ Contractor TBD	¹⁸ Spud Date ASAP
Depth to Ground water 800-ft.		Distance from nearest fresh water well > 1-Mile		Distance to nearest surface water 1400-ft.

¹⁹ Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
SC	12-1/4"	8-5/8"	24# J-55 STC	120-ft.	70-cf	Surface
PC	7-7/8"	5-1/2"	14# J-55 STC	1100-ft.	201-cf	Surface

Casing/Cement Program: Additional Comments

A water based gel-mud will be used to drill surface and production casing hole. Standard 2,200 psi BOP will be used to drill production casing hole. Standard 2,000 psi BOP will be used to drill production hole. Interval (approx. 950-1000) will be stimulated.

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	2,000 psi	Low Press. 250 psig Hi Press. 2,000 psig	Schafer 9" 2000 Series

I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that the drilling pit will be constructed according to NMOCD guidelines <input type="checkbox"/> , a general permit <input type="checkbox"/> , or an (attached) alternative OCD-approved plan <input checked="" type="checkbox"/> . Well will be drilled using closed loop system.		OIL CONSERVATION DIVISION	
Signature: <i>Kurt Fagrelus</i>		Approved By: <i>Charles Ben</i> 1-19-2016	
Printed name: Kurt Fagrelus		Title: SUPERVISOR DISTRICT #3	
Title: Vice President Land and Exploration		Approved Date: JAN 19 2016	Expiration Date: JAN 19 2018
E-mail Address: kfagrelus@duganproduction.com			
Date: 1/5/2016	Phone: 505-325-1821	Conditions of Approval Attached	

KC

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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

*API Number 30.045-35745		*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL
*Property Code 315782	*Property Name SUNFLOWER UNIT		*Well Number 1
*GRID No. 006515	*Operator Name DUGAN PRODUCTION CORPORATION		*Elevation 6296'

¹⁰ Surface Location

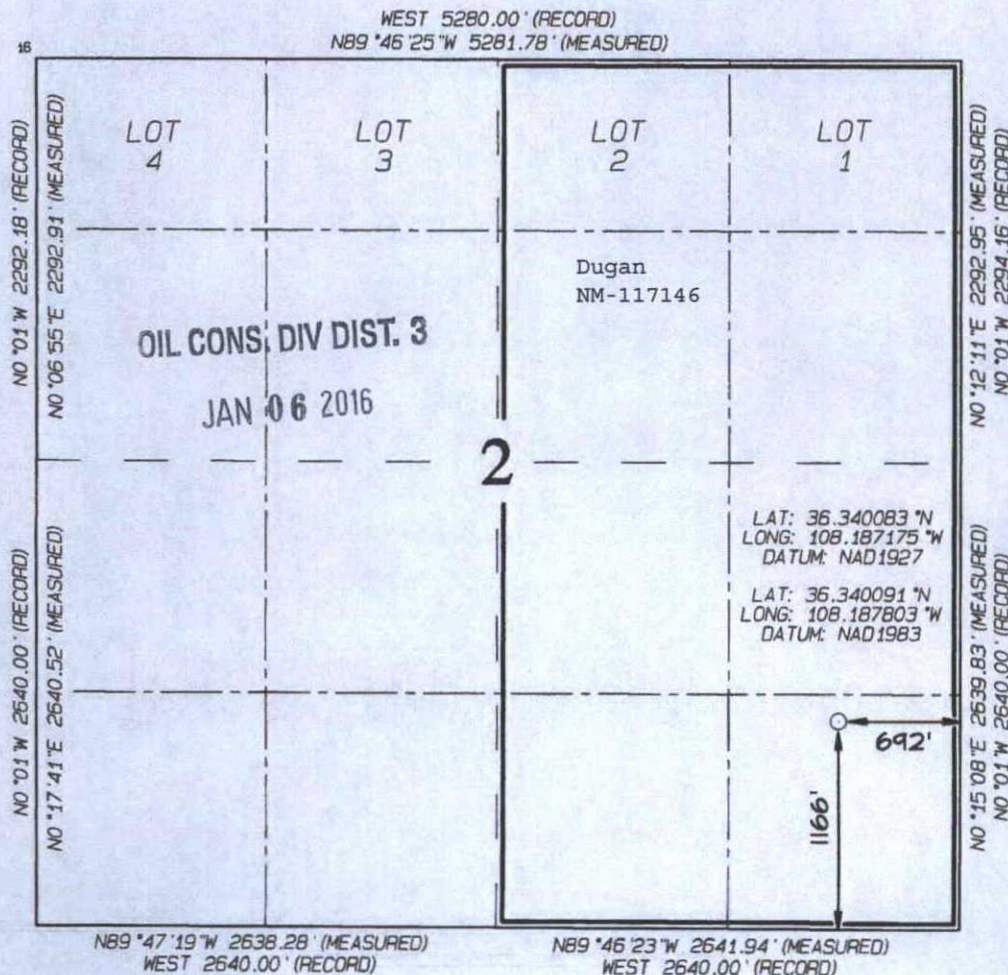
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	2	24N	13W		1166	SOUTH	692	EAST	SAN JUAN

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 299.01 Acres - (E/2)	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ 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



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 Fagrelus 1/5/2016
Signature Date
Kurt Fagrelus
Printed Name
kfagrelus@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 17, 2015
Date of Survey: AUGUST 23, 2015

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

Operations Plan
Sunflower Unit #1
NM State Lease #V-8294-1
SESE of Section 2, T24N, R13W
1166' FSL and 692' FEL
San Juan County, NM

1) Estimated Formation Tops:	<u>Measured Depth</u>	<u>Sub-Sea</u>
Kirtland Shale	Surface	N.A.
Fruitland Fmt.	700'	5596'
Fruitland Coal	890'	5406'
Pictured Cliffs Ss.	960'	5335'
Total Depth	1100'	5196'

2) Estimated Depth of Water and Gas Zones:

Water	0 - 700'
Gas	700' - 1100'

3) Blow-Out Preventer Equipment (BOPE): Exhibit 1.

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.

4) Proposed Casing Program:	<u>Hole Size</u>	<u>Csg. Size</u>	<u>Csg. Wght.</u>	<u>Setting Dpth.</u>
Surface Casing	12-1/4"	8-5/8"	24# J-55 STC	120'
Production Casing	7-7/8"	5-1/2"	15.5# J-55 STC	1100'

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.

5) Proposed 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 Stage- Cement w/100-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 – 213-cu.ft slurry). Tail w/92-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 – 127-cu.ft). Total slurry for the job – 340-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.

6) Mud Program:

0 – 120' Spud with fresh water and gel.
120 – TD Water based gel-mud with polymer.

7) Testing, Logging and Coring:

No drill stem tests or cores will be taken. CBL log will be run if cement does not circulate to surface on production string. Cased hole gamma ray neutron log will be run.

8) Expected Pressures:

Fruitland Formation 300 psi
Bottom Hole 300 psi
No abnormal pressure, temperature or poisonous gas is anticipated.

9) Contacts: Dugan Prod.Corp. Office & Radio Dispatch; (505) 325-1821

<u>Gerald Wright</u>	<u>Kurt Fagrelus</u>	<u>John Alexander</u>
(505)632-5150 (H)	(505)325-4327 (H)	(505)325-6927 (H)
(505)330-9585 (M)	(505)320-8248 (M)	(505)320-1935 (M)

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Phone: (505) 476-3460 Fax: (505) 476-3462**State of New Mexico****Energy Minerals and Natural Resources****Oil Conservation Division****OIL CONS. DIV DIST. 3**
1220 South St. Francis Dr.**DEC 21 2015****Santa Fe, NM 87505**Form C-101
Revised July 18, 2013☐ AMENDED REPORT**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

¹ Operator Name and Address Dugan Production Corp. 709 East Murray Drive Farmington, NM 87401		⁴ OGRID Number 006515
³ Property Name Sunflower Unit		⁵ API Number 30-045-35745
² Property Code	⁶ Well No. 1	

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
P	2	24N	13W		1166	South	692	East	San Juan

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
P	2	24N	13W		1166	South	692	East	San Juan

9. Pool Information

Pool Name Basin Fruitland Coal	Pool Code 71629
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Additional Well Information

¹¹ Work Type N	¹² Well Type G	¹³ Cable/Rotary Rotary	¹⁴ Lease Type State	¹⁵ Ground Level Elevation 6296' GL
¹⁶ Multiple No	¹⁷ Proposed Depth 1100	¹⁸ Formation Pictured Cliffs	¹⁹ Contractor D & D Drilling	²⁰ Spud Date ASAP
Depth to Ground water 800-ft		Distance from nearest fresh water well 6600-ft		Distance to nearest surface water 1400-ft

☒ We will be using a closed-loop system in lieu of lined pits**21. Proposed Casing and Cement Program**

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	12-1/4"	8-5/8"	24#	120-ft.	70-cf	Surface
Production	7-7/8"	5-1/2"	14#	1100-ft.	210-cf	Surface

Casing/Cement Program: Additional Comments

A water based gel-mud will be used to drill surface and production casing hole. Standard 2,200 psi BOP will be used to drill production casing hole. Standard 2,000 psi BOP will be used to drill production hole. Interval (approx.. 950-1000) will be stimulated.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	2,000 psi	Low Press. 250 psig for 5 mins. & Hi Press. 800 psig for 30-mins	Schafer 9" 2000 Series

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief.I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☐ if applicable.Signature: *Kurt Fagrelus*

Printed name: Kurt Fagrelus

Title: Vice President Land and Exploration

E-mail Address: kfagrelus@duganproduction.com

Date: 12/18/2015

Phone: 505-325-1821

OIL CONSERVATION DIVISION

Approved By:

Title:

Approved Date:

Expiration Date:

Conditions of Approval Attached

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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

*API Number 30-045-35745		*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL
*Property Code	*Property Name SUNFLOWER UNIT		*Well Number 1
*GRID No. 006515	*Operator Name DUGAN PRODUCTION CORPORATION		*Elevation 6296'

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	2	24N	13W		1166	SOUTH	692	EAST	SAN JUAN

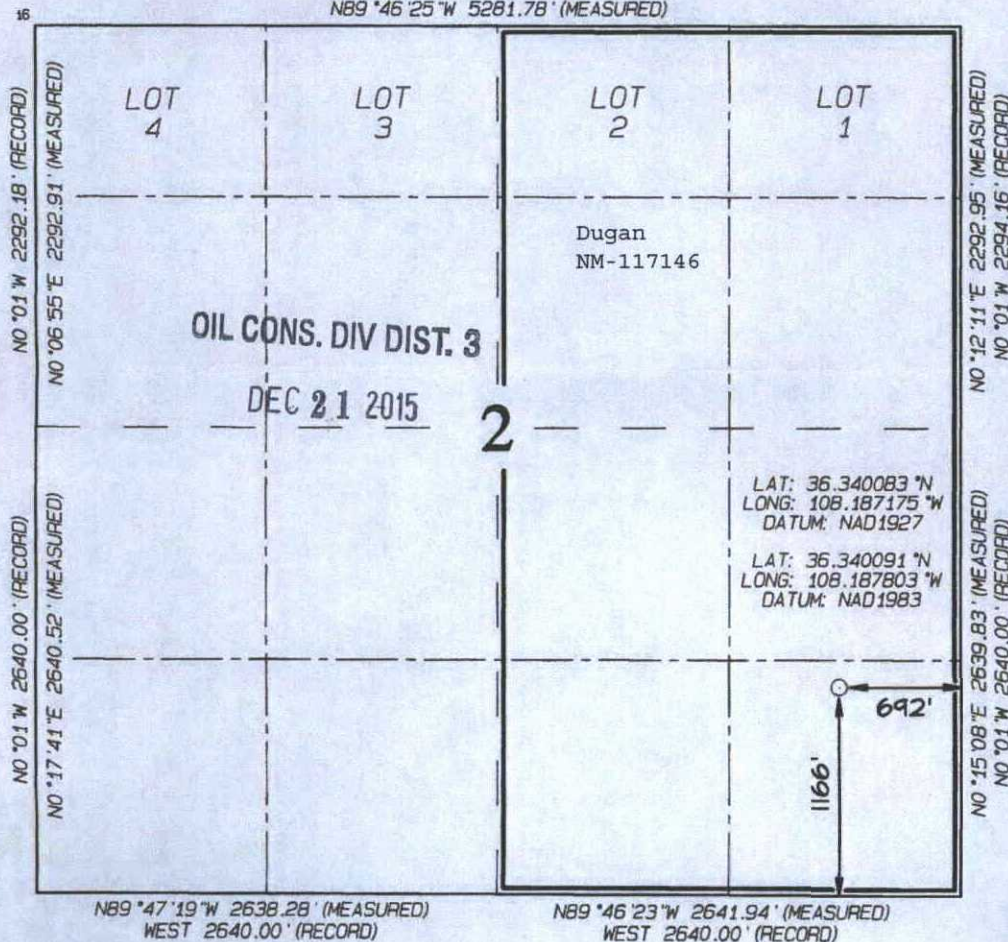
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UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

¹² Dedicated Acres 299.01 Acres - (E/2)	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

WEST 5280.00' (RECORD)
N89°46'25"W 5281.78' (MEASURED)



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 Fagrelus 12/17/2015
Signature Date
Kurt Fagrelus
Printed Name
kfagrelus@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 17, 2015
Date of Survey: AUGUST 23, 2015

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

Directions from the Intersection of US Hwy 64 & State Hwy 371

in Farmington, NM to Dugan Production Corporation Sunflower Unit #1

1166' FSL & 692' FEL, Section 2, T24N, R13W, N.M.P.M., San Juan County, NM

Latitude: 36.340091°N Longitude: 108.187803°W Datum: NAD1983

From the intersection of US Hwy 64 & State Hwy 371 in Farmington, NM, travel Southerly on State Hwy 371 for 28.5 miles to County Road #7250 @ Mile Marker 77.4:

Go Left (Easterly) on County Road #7250 for 3.7 miles to new access on right-hand side of roadway which continues for 2230.7' to staked Dugan Sunflower Unit #1 location.

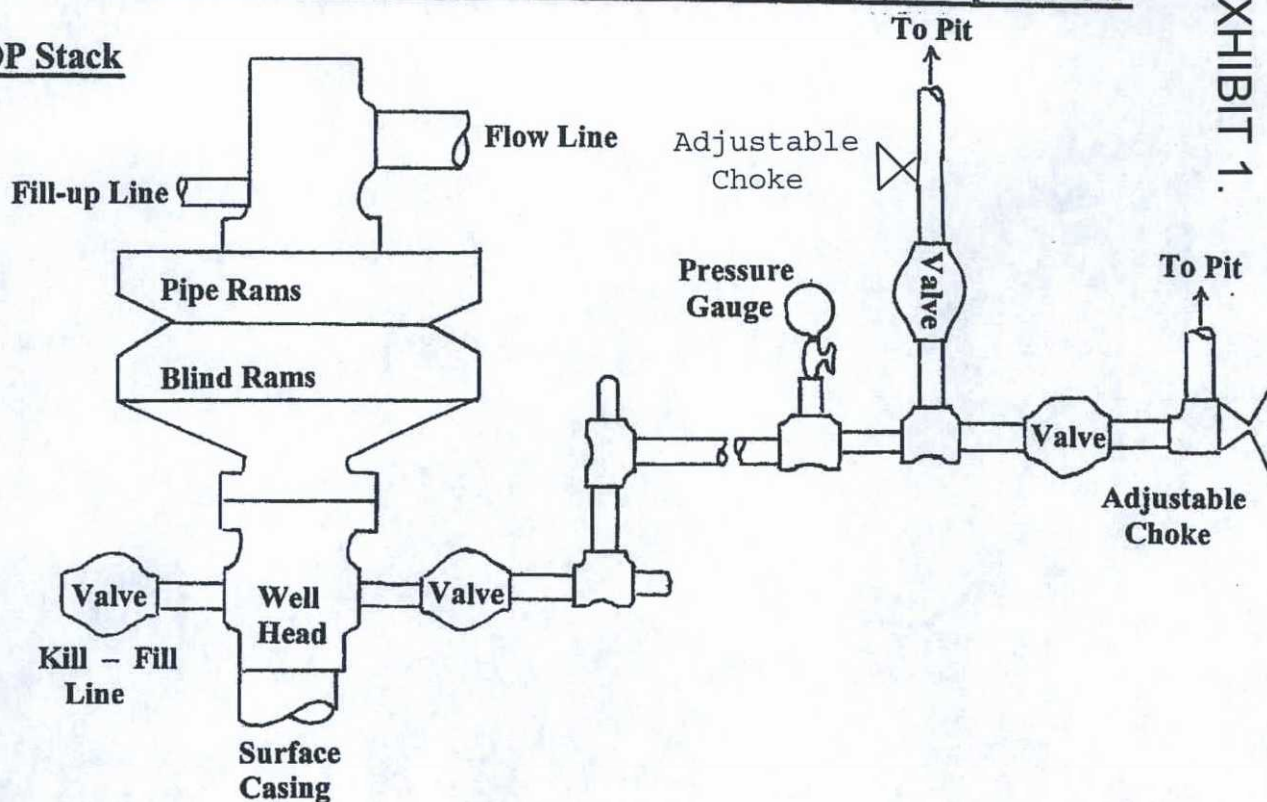
OIL CONS. DIV DIST. 3

JAN 07 2016

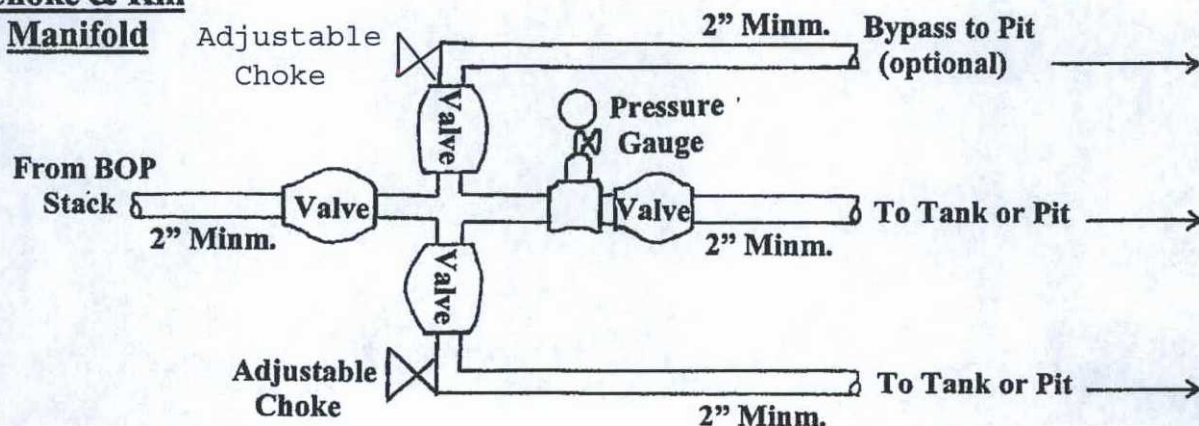
Well Control Equipment Schematic for 2,000 psi BOP

EXHIBIT 1.

BOP Stack



Choke & Kill Manifold



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

DUGAN PRODUCTION CORP.
Sunflower Unit #1

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 Conditions of Approval
(C-101 Application for permit to drill)**

- ☒ 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.