NM OIL CONSERVATION
ARTESIA DISTRICT
MAY 08 2017
RECEIVED

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.: NMNM56426

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

8. Lease Name and Well No.: NEPTUNE 30 FEDERAL COM 3H

2. Name of Operator: NEARBURG PRODUCING COMPANY

9. API Well No.: 30-015-44157

3a. Address: 3300 North A Street, Suite 120 Midland TX 79

3b. Phone No. *(include area code)*: (432)686-8235

10. Field and Pool, or Exploratory: PALMILLO EAST BONE SPRING OIL

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

At surface: LOT 3 / 1770 FSL / 185 FWL / LAT 32.716006 / LONG -104.121228

At proposed prod. zone: NESE / 1770 FSL / 330 FEL / LAT 32.716028 / LONG -104.106572

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 30 / T18S / R29E / NMP

14. Distance in miles and direction from nearest town or post office*: 18 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: 1046.15

17. Spacing Unit dedicated to this well: 152.21

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 1320 feet

19. Proposed Depth: 7636 feet / 11825 feet

20. BLM/BIA Bond No. on file: FED: NMB000153

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3461 feet

22. Approximate date work will start*: 02/28/2017

23. Estimated duration: 45 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)	Vicki Johnston / Ph: (830)537-4599	11/15/2016

Title: Regulatory Consultant

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Ty Allen / Ph: (575)234-5978	04/25/2017

Title	Office
Wildlife Biologist	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

RWP 5.11.17

AFMSS

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

Operator Certification Data Report

04/25/2017

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: Vicki Johnston **Signed on:** 11/15/2016

Title: Regulatory Consultant

Street Address: 116 White Oak Trail

City: Boerne **State:** TX **Zip:** 78006

Phone: (830)537-4599

Email address: Vjohnston1@gmail.com

Field Representative

Representative Name: Tim Green

Street Address: 3300 N A Street, Suite 120

City: Midland **State:** TX **Zip:** 79705

Phone: (432)818-2940

Email address: tgreen@nearburg.com

APD ID: 10400007716 **Submission Date:** 11/15/2016

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

Well Type: OIL WELL **Well Work Type:** Drill

Section 1 - General

APD ID: 10400007716 **Tie to previous NOS?** **Submission Date:** 11/15/2016

BLM Office: CARLSBAD **User:** Vicki Johnston **Title:** Regulatory Consultant

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM56426 **Lease Acres:** 1046.15

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? YES **APD Operator:** NEARBURG PRODUCING COMPANY

Operator letter of designation: Neptune 30 Fed Com 3H_Designation of Agent_11-08-2016.pdf

Keep application confidential? NO

Operator Info

Operator Organization Name: NEARBURG PRODUCING COMPANY

Operator Address: 3300 North A Street, Suite 120 **Zip:** 79705

Operator PO Box:

Operator City: Midland **State:** TX

Operator Phone: (432)686-8235

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: NEPTUNE 30 FEDERAL COM **Well Number:** 3H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** PALMILLO EAST BONE SPRING OIL **Pool Name:**

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

Is the proposed well in an area containing other mineral resources? OIL

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: INFILL

Describe sub-type:

Distance to town: 18 Miles **Distance to nearest well:** 1320 FT **Distance to lease line:** 185 FT

Reservoir well spacing assigned acres Measurement: 152.21 Acres

Well plat: Neptune 30 Fed Com 3H_C102_02-15-2017.pdf

Well work start Date: 02/28/2017 **Duration:** 45 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number:

	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** EDDY
	Latitude: 32.716006	**Longitude:** -104.121228	
SHL	**Elevation:** 3461	**MD:** 0	**TVD:** 0
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMNM56426	
	NS-Foot: 1770	**NS Indicator:** FSL	
	EW-Foot: 185	**EW Indicator:** FWL	
	Twsp: 18S	**Range:** 29E	**Section:** 30
	Aliquot:	**Lot:** 3	**Tract:**

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** EDDY
	Latitude: 32.716006	**Longitude:** -104.121228	
KOP	**Elevation:** -3527	**MD:** 6988	**TVD:** 6988
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMNM56426	
	NS-Foot: 1770	**NS Indicator:** FSL	
	EW-Foot: 185	**EW Indicator:** FWL	
	Twsp: 18S	**Range:** 29E	**Section:** 30
	Aliquot:	**Lot:** 3	**Tract:**

	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** EDDY
	Latitude: 32.716006	**Longitude:** -104.119402	
PPP	**Elevation:** -4101	**MD:** 7878	**TVD:** 7562
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMNM56426	
	NS-Foot: 1770	**NS Indicator:** FSL	
	EW-Foot: 747	**EW Indicator:** FWL	
	Twsp: 18S	**Range:** 29E	**Section:** 30
	Aliquot:	**Lot:** 3	**Tract:**

	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** EDDY
	Latitude: 32.716028	**Longitude:** -104.106572	
EXIT	**Elevation:** -4175	**MD:** 11825	**TVD:** 7636
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMNM56426	
	NS-Foot: 1770	**NS Indicator:** FSL	
	EW-Foot: 330	**EW Indicator:** FEL	
	Twsp: 18S	**Range:** 29E	**Section:** 30
	Aliquot: NESE	**Lot:**	**Tract:**

	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** EDDY
	Latitude: 32.716028	**Longitude:** -104.106572	
BHL	**Elevation:** -4175	**MD:** 11825	**TVD:** 7636
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMNM56426	
	NS-Foot: 1770	**NS Indicator:** FSL	
	EW-Foot: 330	**EW Indicator:** FEL	

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

Twsp: 18S **Range:** 29E **Section:** 30

Aliquot: NESE **Lot:** **Tract:**

Nearburg Producing Company

Exploration and Production
3300 North "A" Street
Building 2, Suite 120
Midland, TX 79705-5421
432-686-8235
FAX 432-686-7606

March 1, 2012

DESIGNATION OF AGENT

Bureau of Land Management
ATTN: BETTY HILL
Carlsbad Field Office
620 E. Greene Street
Carlsbad, NM 88220

Re: Agent Authorization

Dear Ms. Hill:

Please be informed that Vicki Johnston is an Agent employed by Gray Surface Specialties. She is authorized to prepare and submit APDs, Sundry Notices, Right-of-Way applications, and other BLM-required forms on behalf of Nearburg Producing Company.

Vicki can be contacted as follows:

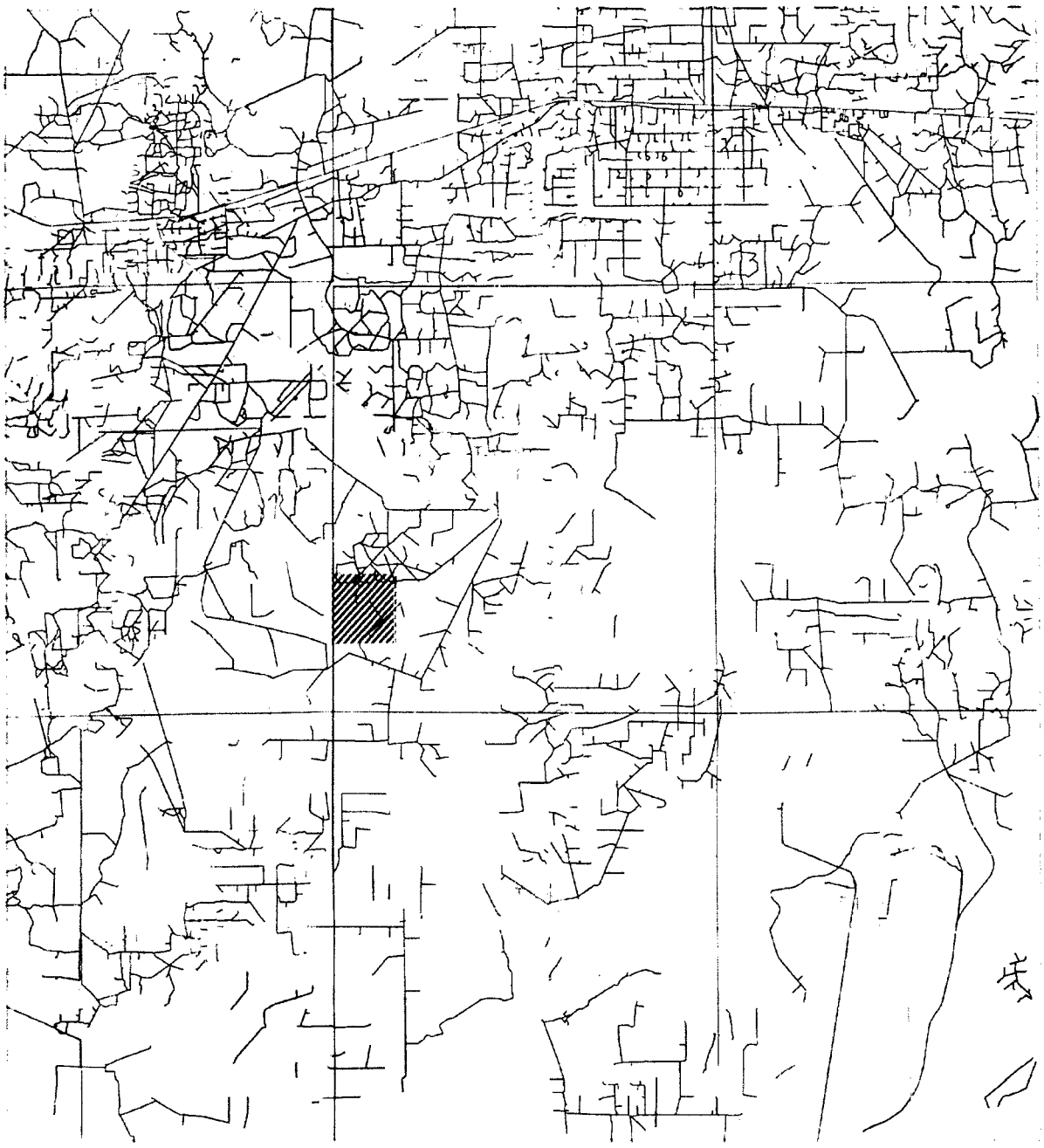
- Telephone: (281) 265-6874 or (281) 468-2448
- Email: vjohnston1@gmail.com
- Mailing Address: 1631 Berkoff Drive, Sugar Land, TX 77479

Sincerely,

Nearburg Producing Company

Terrence Gant
Midland Manager RW

VICINITY MAP



NEPTUNE 30 FEDERAL COM #3H

Basin Surveys

NEARBURG PRODUCING CO.

APD ID: 10400007716 **Submission Date:** 11/15/2016

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

Well Type: OIL WELL **Well Work Type:** Drill

Section 1 - Geologic Formations

ID: Surface formation **Name:** UNKNOWN

Lithology(ies):

Elevation: 3461 **True Vertical Depth:** 0 **Measured Depth:** 0

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 1 **Name:** TOP SALT

Lithology(ies):

SALT

ANHYDRITE

Elevation: 3130 **True Vertical Depth:** 331 **Measured Depth:** 331

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 2 **Name:** BASE OF SALT

Lithology(ies):

SALT

ANHYDRITE

Elevation: 2830 **True Vertical Depth:** 631 **Measured Depth:** 631

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 6 **Name:** SAN ANDRES

Lithology(ies):

DOLOMITE

Elevation: 800 **True Vertical Depth:** 2661 **Measured Depth:** 2661

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 7 **Name:** BONE SPRING LIME

Lithology(ies):

LIMESTONE

Elevation: -100 **True Vertical Depth:** 3561 **Measured Depth:** 3561

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 8 **Name:** BONE SPRING 1ST

Lithology(ies):

SANDSTONE

Elevation: -3050 **True Vertical Depth:** 6511 **Measured Depth:** 6511

Mineral Resource(s):

USEABLE WATER

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 9 **Name:** BONE SPRING 2ND

Lithology(ies):

SANDSTONE

Elevation: -3877 **True Vertical Depth:** 7338 **Measured Depth:** 7364

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

Mineral Resource(s):

USEABLE WATER

NATURAL GAS

OIL

Is this a producing formation? Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 11900

Equipment: Rotating head, remote kill line, mud-gas separator

Requesting Variance? NO

Variance request:

Testing Procedure: BOP will be tested by an independent service company to 250 psi low and 5000 high, per Onshore Order 2 requirements. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole.

Choke Diagram Attachment:

Neptune 30 Fed Com 3H_Choke Manifold_11-14-2016.pdf

BOP Diagram Attachment:

Neptune 30 Fed Com 3H_BOP_11-14-2016.pdf

Neptune 30 Fed Com 3H_Flexline Specs_02-15-2017.pdf

Section 3 - Casing

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

String Type: SURFACE **Other String Type:**

Hole Size: 17.5

Top setting depth MD: 0 **Top setting depth TVD:** 0

Top setting depth MSL: -4101

Bottom setting depth MD: 320 **Bottom setting depth TVD:** 320

Bottom setting depth MSL: -4421

Calculated casing length MD: 320

Casing Size: 13.375 **Other Size** 17.5

Grade: J-55 **Other Grade:**

Weight: 54.5

Joint Type: STC **Other Joint Type:**

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 8.74 **Burst Design Safety Factor:** 1.71

Joint Tensile Design Safety Factor type: DRY **Joint Tensile Design Safety Factor:** 52.1

Body Tensile Design Safety Factor type: DRY **Body Tensile Design Safety Factor:** 48.9

Casing Design Assumptions and Worksheet(s):

Neptune 30 Fed Com 3H_Casing Assumptions_11-14-2016.pdf

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

String Type: INTERMEDIATE **Other String Type:**

Hole Size: 12.25

Top setting depth MD: 0 **Top setting depth TVD:** 0

Top setting depth MSL: -4101

Bottom setting depth MD: 1220 **Bottom setting depth TVD:** 1220

Bottom setting depth MSL: -5321

Calculated casing length MD: 1220

Casing Size: 9.625 **Other Size**

Grade: N-80 **Other Grade:**

Weight: 40

Joint Type: LTC **Other Joint Type:**

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 4.5 **Burst Design Safety Factor:** 2.57

Joint Tensile Design Safety Factor type: DRY **Joint Tensile Design Safety Factor:** 20.1

Body Tensile Design Safety Factor type: DRY **Body Tensile Design Safety Factor:** 18.8

Casing Design Assumptions and Worksheet(s):

Neptune 30 Fed Com 3H_Casing Assumptions_11-14-2016.pdf

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

String Type: PRODUCTION **Other String Type:**

Hole Size: 8.75

Top setting depth MD: 0 **Top setting depth TVD:** 0

Top setting depth MSL: -4101

Bottom setting depth MD: 11824 **Bottom setting depth TVD:** 7636

Bottom setting depth MSL: -11737

Calculated casing length MD: 11824

Casing Size: 5.5 **Other Size**

Grade: P-110 **Other Grade:**

Weight: 17

Joint Type: LTC **Other Joint Type:**

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 1.89 **Burst Design Safety Factor:** 1.25

Joint Tensile Design Safety Factor type: DRY **Joint Tensile Design Safety Factor:** 4.5

Body Tensile Design Safety Factor type: DRY **Body Tensile Design Safety Factor:** 4.25

Casing Design Assumptions and Worksheet(s):

Neptune 30 Fed Com 3H_Casing Assumptions_11-14-2016.pdf

Section 4 - Cement

Casing String Type: SURFACE

Stage Tool Depth:

Lead

Top MD of Segment: 0 **Bottom MD Segment:** 320 **Cement Type:** Class C

Additives: w/1% CACL2 **Quantity (sks):** 580 **Yield (cu.ff./sk):** 1.33

Density: 14.8 **Volume (cu.ft.):** 198 **Percent Excess:** 287

Casing String Type: INTERMEDIATE

Stage Tool Depth:

Lead

Top MD of Segment: 0 **Bottom MD Segment:** 1220 **Cement Type:** Class C

Additives: w/1% CACL2 **Quantity (sks):** 500 **Yield (cu.ff./sk):** 1.32

Density: 14.8 **Volume (cu.ft.):** 660 **Percent Excess:** 73

Casing String Type: PRODUCTION

Stage Tool Depth:

Lead

Top MD of Segment: 0 **Bottom MD Segment:** 11824 **Cement Type:** 40:60:10 Class C:POZ:GEL

Additives: w/Bentonite, Salt, STE, Defoamer C-41P, Citric Acid, FLA-CSA-1000 Kol-Seal, Gyp-Seal, FLA C-478 **Quantity (sks):** 1000 **Yield (cu.ff./sk):** 3.25

Density: 11 **Volume (cu.ft.):** 2975 **Percent Excess:** 65

Tail

Bottom MD Segment: 11794

Top MD of Segment: 0 **Cement Type:** 50:50:0 Class H:POZ:GEL

Quantity (sks): 1400 **Yield (cu.ff./sk):** 1.23

Additives: + FLA CSA-1000 + C-47B + Retarder C-20 **Volume (cu.ft.):** 0 **Percent Excess:** 0

Density: 14.2

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

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: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: Use a series of alternating low vis (FW) and high vis (65+ FV) sweeps as needed while rotating at least 70-120 RPM as rig equipment allows, and reciprocating the pipe w/max pump rate to clean hole.

Circulating Medium Table

Top Depth: 0 **Bottom Depth:** 320

Mud Type: SPUD MUD

Min Weight (lbs./gal.): 8.4 **Max Weight (lbs./gal.):** 8.4

Density (lbs/cu.ft.): **Gel Strength (lbs/100 sq.ft.):**

PH: **Viscosity (CP):**

Filtration (cc): **Salinity (ppm):**

Additional Characteristics:

Top Depth: 0 **Bottom Depth:** 1220

Mud Type: SALT SATURATED

Min Weight (lbs./gal.): 10 **Max Weight (lbs./gal.):** 10

Density (lbs/cu.ft.): **Gel Strength (lbs/100 sq.ft.):**

PH: **Viscosity (CP):**

Filtration (cc): **Salinity (ppm):**

Additional Characteristics:

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

Top Depth: 0 **Bottom Depth:** 8600

Mud Type: SALT SATURATED

Min Weight (lbs./gal.): 8.8 **Max Weight (lbs./gal.):** 9

Density (lbs/cu.ft.): **Gel Strength (lbs/100 sq.ft.):**

PH: **Viscosity (CP):**

Filtration (cc): **Salinity (ppm):**

Additional Characteristics: Cut Brine 8.8-9.0 ppg

Section 6 - Test, Logging, Coring

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

Mud loggers begin catching samples. Directional BHA w/GR and PDC. MWD GR from KOP to TD. GR CNL from surface to KOP.

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

CNL,GR,MWD

Coring operation description for the well:

No cores.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 3400 **Anticipated Surface Pressure:** 1720.08

Anticipated Bottom Hole Temperature(F): 158

Anticipated abnormal proessures, 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:

Neptune 30 Federal Com 3H_H2S Plan and Summary_02-08-2017.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Neptune 30 Fed Com 3H_Directional Report_11-14-2016.pdf

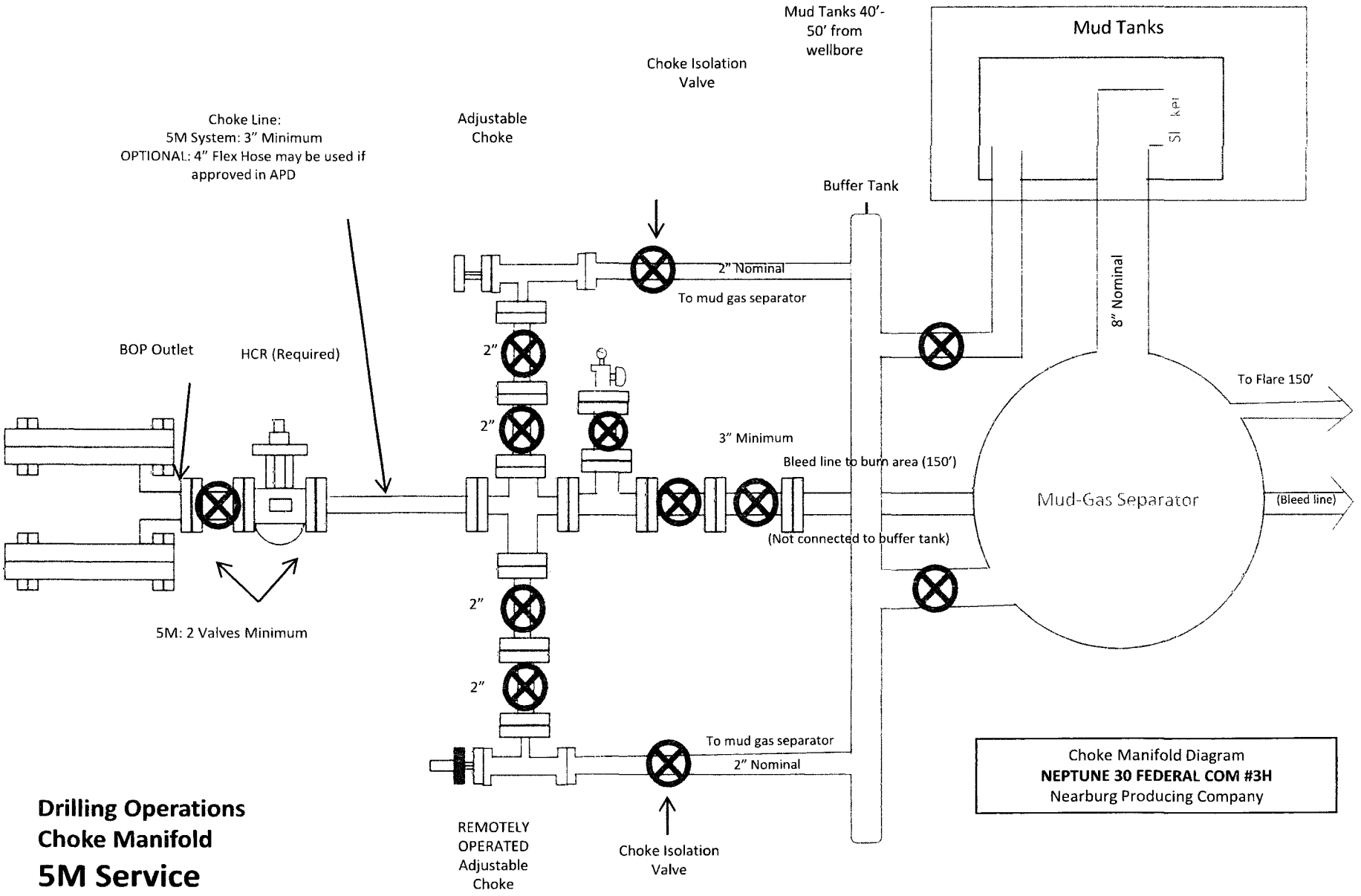
Other proposed operations facets description:

Drilling Plan Report attached. Wellbore Profile attached.

Other proposed operations facets attachment:

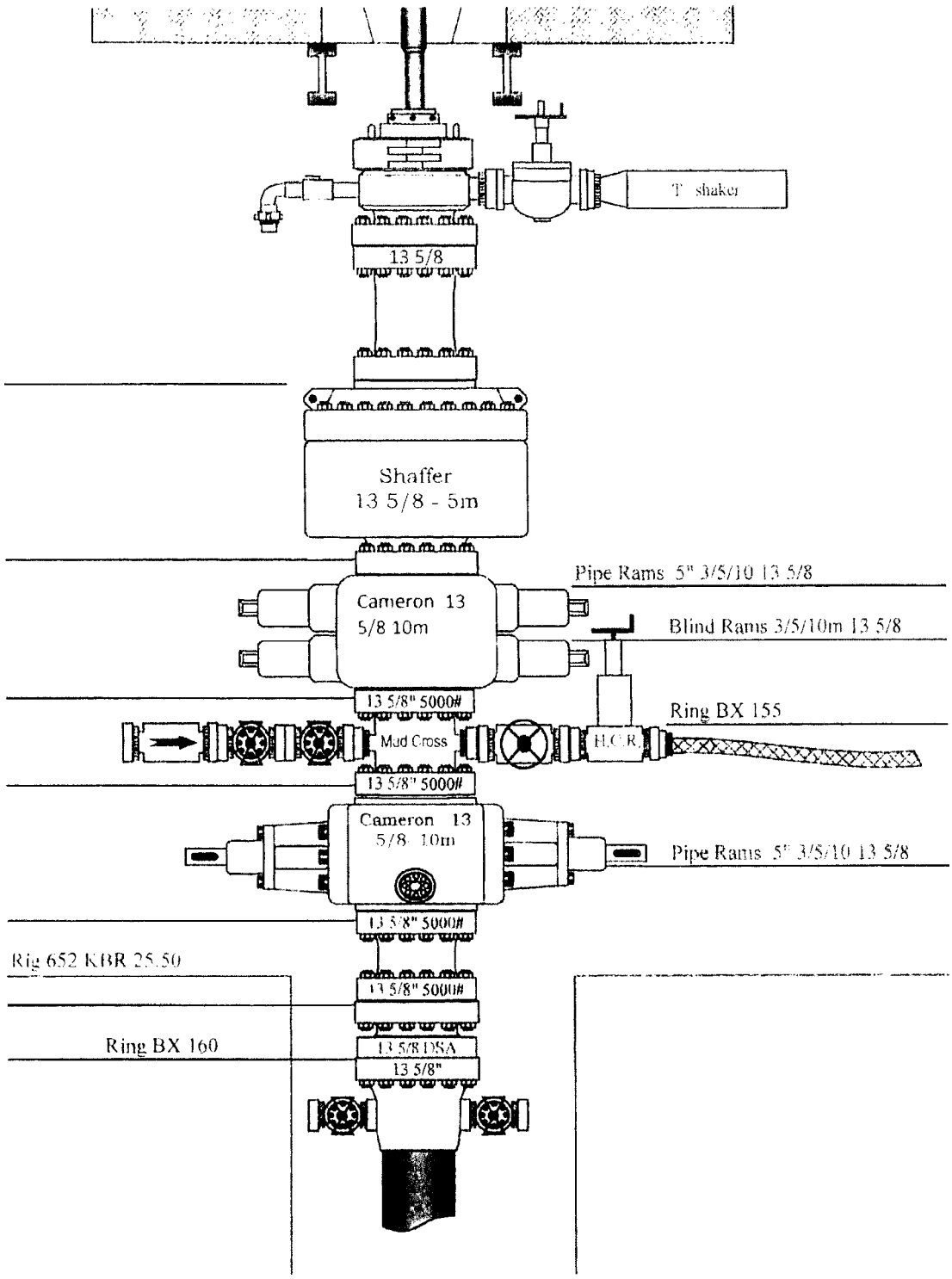
Neptune 30 Fed Com 3H_Wellbore Diagram_11-14-2016.pdf
Neptune 30 Fed Com 3H_Drilling Plan Report_11-15-2016.pdf
Neptune 30 Fed Com 3H_Drilling Plan Report_02-15-2017.pdf

Other Variance attachment:



Drilling Operations
Choke Manifold
5M Service

Choke Manifold Diagram
NEPTUNE 30 FEDERAL COM #3H
Nearburg Producing Company


T shaker
13 5/8
Shaffer
13 5/8 - 5m
Pipe Rams 5" 3/5/10 13 5/8
Cameron 13
5/8 10m
Blind Rams 3/5/10m 13 5/8
13 5/8" 5000#
Ring BX 155
Mud Cross
H.C.R.
13 5/8" 5000#
Cameron 13
5/8 10m
Pipe Rams 5" 3/5/10 13 5/8
13 5/8" 5000#
Rig 652 KBR 25.50
13 5/8" 5000#
Ring BX 160
13 5/8 DSA
13 5/8"

Midwest Hose & Specialty, Inc.

Co-Flex Hose Hydrostatic Test
Neptune 30 Federal Com #3H
Nearburg Producing Co.
30-18S-29E
SHL: 1770' FSL 185' FWL
BHL: 1770' FSL 330' FEL
Eddy County, NM

INTERNAL HYDROSTATIC TEST REPORT

Customer:	P.O. Number:
Oderco Inc	odyd-271

HOSE SPECIFICATIONS

Type: Stainless Steel Armor Choke & Kill Hose	Hose Length: 45'ft.
I.D. 4 *INCHES*	O.D. 9 *INCHES*

WORKING PRESSURE	TEST PRESSURE	BURST PRESSURE
10,000 *PSI*	15,000 *PSI*	0 *PSI*

COUPLINGS

Stem Part No.	Ferrule No.
OKC OKC	OKC OKC
Type of Coupling: Swage-It	

PROCEDURE

Hose assembly pressure tested with water at ambient temperature.

TIME HELD AT TEST PRESSURE	ACTUAL BURST PRESSURE:
15 *MIN.*	0 *PSI*

Hose Assembly Serial Number:	Hose Serial Number:
79793	OKC

Comments:

Date:	Tested:	Approved:
3/8/2011		

Midwest Hose & Specialty, Inc.

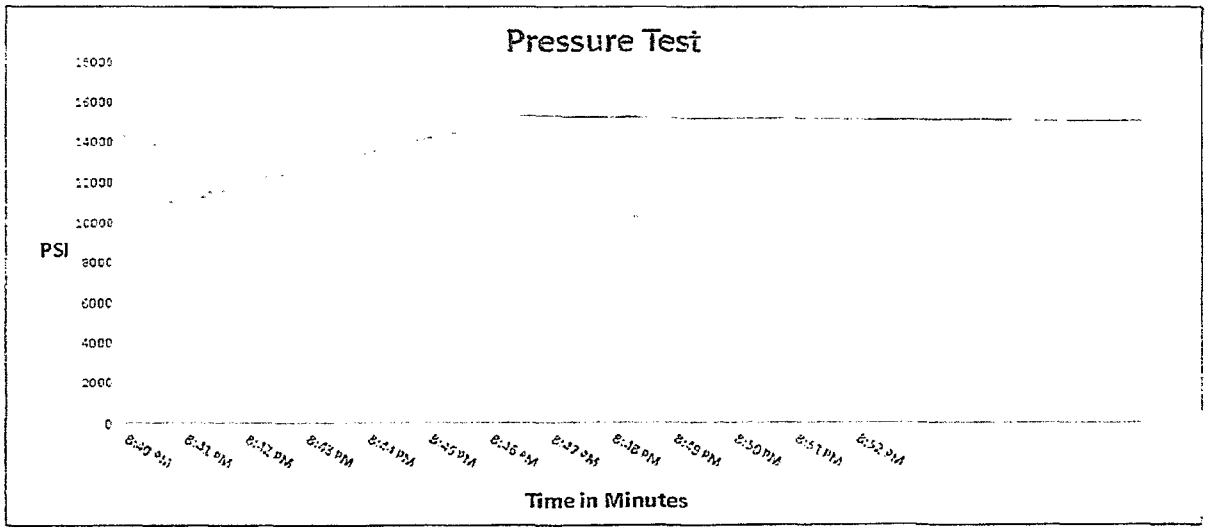
Internal Hydrostatic Test Graph

March 3, 2011

Customer: Houston

Pick Ticket #: 94260

Hose Specifications		Verification	
Hose Type	**Length**	**Type of Fitting**	**Coupling Method**
C S K	45'	4 1/16 10K	Swage
I.D.	**O.D.**	**Die Size**	**Final O.D.**
4"	6.09"	6.38"	6.25"
Working Pressure	**Burst Pressure**	**Hose Serial #**	**Hose Assembly Serial #**
10000 PSI	Standard Safety Multiplier Applies	5544	79793



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	11 Minutes		15483 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: *Zac Mcconnell*

Approved By: *Kim Thomas*

Co-Flex Hose Hydrostatic Test
Neptune 30 Federal Com #3H
Nearburg Producing Co.
30-18S-29E
SHL: 1770' FSL 185' FWL
BHL: 1770' FSL 330' FEL
Eddy County, NM

Co-Flex Hose
Neptune 30 Federal Com #3H
Nearburg Producing Co.
30-18S-29E
SHL: 1770' FSL 185' FWL
BHL: 1770' FSL 330' FEL
Eddy County, NM

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: DEM	PO ODYD-271
SPECIFICATIONS	
Sales Order 79793	Dated: 3/8/2011

We hereby cerify that the material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards

Supplier:
Midwest Hose & Specialty, Inc.
10640 Tanner Road
Houston, Texas 77041

Comments:

Approved:	Date:
[signature]	3/8/2011

Midwest Hose & Specialty, Inc.

Co-Flex Hose
Neptune 30 Federal Com #3H
Nearburg Producing Co.
30-18S-29E
SHL: 1770' FSL 185' FWL
BHL: 1770' FSL 330' FEL
Eddy County, NM

Specification Sheet
Choke & Kill Hose

The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium componets.The reinforcement cables, inner liner and cover are made of the highest quality material to handle the tough drilling applications of today's industry. The end connections are available with API flanges, API male threads, hubs, hammer unions or other special fittings upon request. Hose assembly is manufactured to API 7K. This assembly is wrapped with fire resistant vermculite coated fiberglass insulation, rated at 2000 degrees with stainless steel armor cover.

Working Pressure:	5,000 or 10,000 psi working pressure
Test Pressure:	10,000 or 15,000 psi test pressure
Reinforcement:	Multiple steel cables
Cover:	Stainless Steel Armor
Inner Tube:	Petroleum resistant, Abrasion resistant
End Fitting:	API flanges, API male threads, threaded or butt weld hammer unions, unibolt and other special connections
Maximum Length:	110 Feet
ID:	2-1/2", 3", 3-1/2", 4"
Operating Temperature:	-22 deg F to +180 deg F (-30 deg C to +82 deg C)

P.O. Box 96558 – 1421 S.E. 29th St. Oklahoma City, OK 73143 * (405) 670-6718 * Fax: (405) 670-6816

Co-Flex Hose

Neptune 30 Federal Com #3H

Nearburg Producing Co.

30-18S-29E

SHL: 1770' FSL 185' FWL

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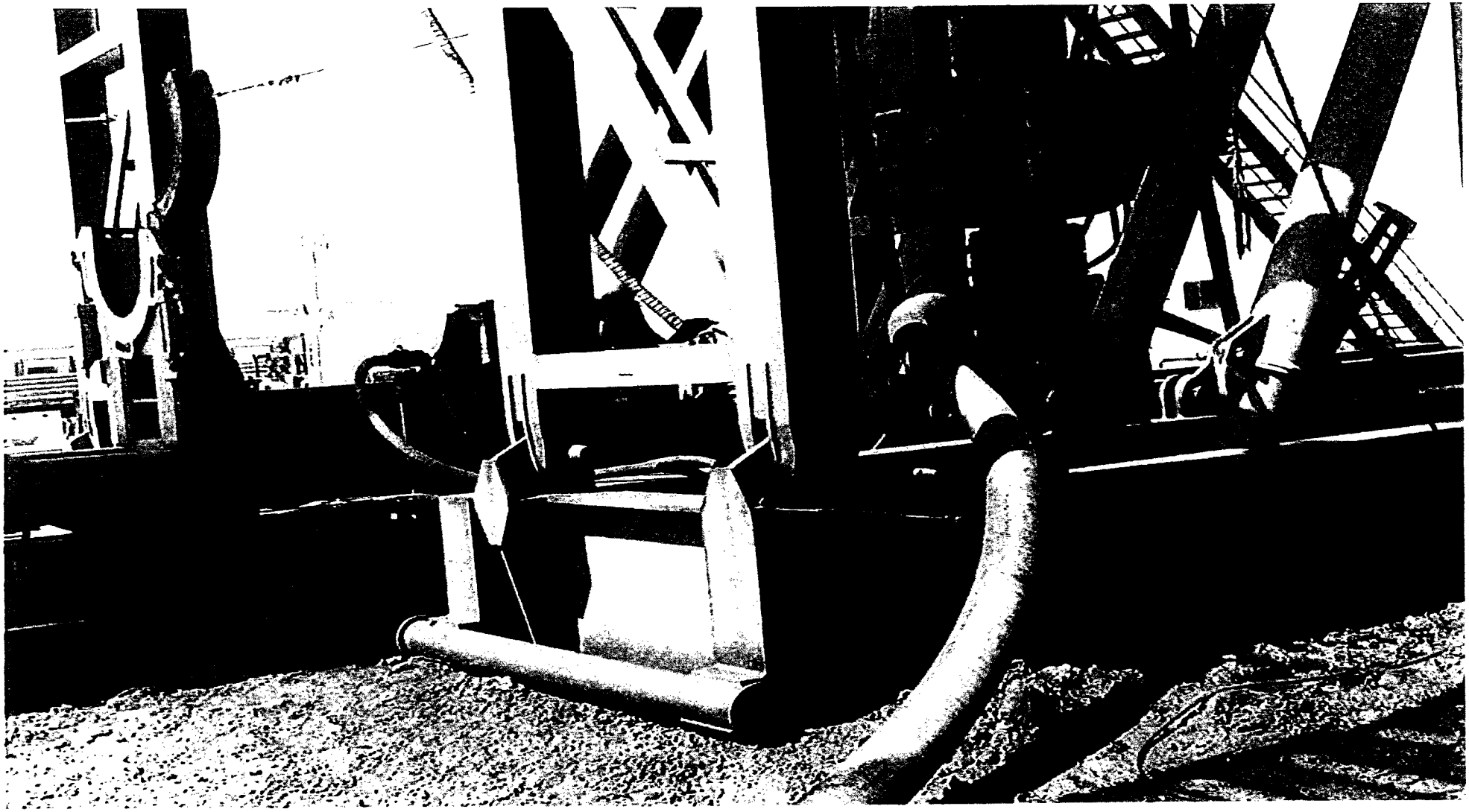
Eddy County, NM



NEARBURG PRODUCING COMPANY (OGRID #15742)
CASING ASSUMPTIONS WORKSHEET - NEPTUNE 30 FEDERAL COM #3H

STRING	FLUID TYPE	HOLE SIZE	CSG SIZE	WT #/FT	GRD	EST TOC	DPTH SET	SACKS	CLASS CMT	JT TYPE	DENS #/GAL	YLD FT3/SK	VOL (cu.ft.)	% EXCESS	H20 GAL/ SK	SF COLL	SF BURST	SF BODY TENS	BODY TYPE DRY/ BUOY	SF JOINT TENS	JOINT TYPE DRY/ BUOY
SURF	FW/MUD	17.5	13.375	54.5	J-55	0	320	580	C	STC	14.8	1.33	198	287	6.35	8.74	1.71	48.9	Dry	52.1	Dry
									Surface Casing Shoe 285'												
INT	BRINE	12.25	9.625	40	N-80	0	1220	500	C	LTC	14.8	1.33	363	80	6.35	4.5	2.57	18.8	Dry	20.1	Dry
									Intermediate Casing Shoe 1160'												
PROD	CUT BRINE	8.75	5.5	17	P-110	0	11824	1000 LEAD 1400 TAIL	40:60:10 C:POZ 50:50:0 H:GEL	LTC	11.0 14.2	3.25 1.23	2975	65	19.43 5.60	1.89	1.25	4.25	Dry	4.5	Dry

ADDITIVES:

SURFACE: w/1% CACL2

INTERMEDIATE: w/1% CACL2

PRODUCTION: **Lead:** 40:60:10 C:POZ:GEL w/Bentonite, Salt, STE, Defoamer C041P, Citric Acid, FLA-CSA-1000 Kol-seal, Gyp Seal, FLA C-478
Tail: 50:50:2 POZ:H:GEL + FLA CSA-1000 & C-47B + Retarder C-20

NEARBURG PRODUCING COMPANY
Neptune 30 Federal Com #3H

Hydrogen Sulfide Drilling Plan Summary

(attach to detailed H2S Plan)

A. All personnel shall receive proper H2S training according to Onshore Order III.C.3.a.
B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.
C. Required Emergency Equipment:

- Well control equipment
  a. Flare line 150' from wellhead to be ignited by flare gun
  b. Choke manifold with a remotely-operated choke
  c. Mud/gas separator
- Protective equipment for essential personnel
  Breathing Apparatus:
  a. Rescue Packs (SCBA): One unit placed at each breathing area; two units stored in the safety trailer.
  b. Work/Escape packs: Four packs stored on the rig floor with sufficient air hose not to restrict work activity.
  c. Emergency Escape Packs: Four packs stored in the doghouse for emergency evacuation.
  Auxiliary Rescue Equipment:
  a. Stretcher
  b. Two OSHA full body harnesses
  c. 100' of 5/8" OSHA-approved rope
  d. 1-20# Class ABC fire extinguisher
- H2S Detection and Monitoring Equipment:
  The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm at 10 ppm and audible at 15 ppm. Calibrate a minimum of every 30 days or as needed. Sensors will be placed in the following places: Rig floor; Bell nipple; End of flow line or where well bore fluid is being discharged. (Gas sample tubes will be stored in the safety trailer)
- Visual warning systems.
  a. One color-code condition sign placed at site entrance reflecting possible conditions at the site.
  b. A colored condition flag on display, reflecting the current condition at the site.
  c. Two wind socks placed in strategic locations, visible from all angles.
- Mud program:
  The mud program has been designed to minimize the volume of H2S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H2S bearing zones.
- Metallurgy:
  a. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.
  b. All elastomers used for packing and seals shall be H2S trim.
- Communication:
  Communication will be via cell phones and land lines.

NEARBURG PRODUCING COMPANY

HYDROGEN SULFIDE (H2S) CONTINGENCY PLAN
FOR DRILLING / COMPLETING / WORKOVER / FACILITY
WITH THE EXPECTATION OF H2S IN EXCESS OF 100 PPM

NEARBURG PRODUCING COMPANY
NEW DRILL WELL:

NEPTUNE 30 FEDERAL COM #3H
SL: 1770' FSL & 185' FWL, Lot 3
Sec 30, T18S, R29E
BHL: 1770' FSL & 330' FEL, Lot I
Sec 30, T18S, R29E
Eddy County, New Mexico

This well/facility is not expected to have H2S, but the following is submitted as requested.

TABLE OF CONTENTS

I.	General Emergency Plan	Page 3
II.	Emergency Procedures for Uncontrolled Release of H2S	Page 3
III.	Emergency Call List	Page 3
IV.	Emergency Response Numbers	Page 4
V.	Protection of the General (ROE) Radius of Exposure	Page 5
Vi.	Public Evacuation Plan	Page 5
VII.	Procedure for Igniting an Uncontrollable Condition	Page 6
VIII.	Required Emergency Equipment	Page 6
IX.	Using Self-Contained Breathing Air Equipment (SCBA)	Page 7
X.	Rescue & First Aid for Victims of H2S Poisoning	Page 7
XI.	H2S Toxic Effects	Page 8
XII.	H2S Physical Properties	Page 9
XIII.	Location Map	Page 10
XIV.	Vicinity Map	Page 11

GENERAL H2S EMERGENCY ACTIONS

In the event of any evidence of H2S emergency, the following plan will be initiated:

1. All personnel will immediately evacuate to an upwind and if possible uphill "safe area."
2. If for any reason a person must enter the hazardous area, they must wear a SCBA (self-contained breathing apparatus).
3. Always use the "buddy system."
4. Isolate the well/problem if possible.
5. Account for all personnel.
6. Display the proper colors warning all unsuspecting personnel of the danger at hand.
7. Contact the company representative as soon as possible if not at the location (use the enclosed call list as instructed).

At this point the company representative will evaluate the situation and coordinate the necessary duties to bring the situation under control, and if necessary, the notification of emergency response agencies and residents.

EMERGENCY PROCEDURES FOR AN UNCONTROLLABLE RELEASE OF H2S

1. All personnel will don the self-contained breathing apparatus.
2. Remove all personnel to the "safe area" (always use the "buddy system").
3. Contact company representative if not on location.
4. Set in motion the steps to protect and/or remove the general public to any upwind "safe area." Maintain strict security and safety procedures while dealing with the source.
5. No entry to any unauthorized personnel.
6. Notify the appropriate agencies:
   City Police - City streets
   State Police - State Roads
   County Sheriff - County Roads
7. Call the NMOCD.

If at this time the supervising person determines the release of H2S cannot be contained to the site location and the general public is in harm's way, he will immediately notify public safety personnel.

EMERGENCY CALL LIST

	Office	Cell
Wes Stinson	432-686-8235	575-365-6500
Matt Lee	432-686-8235	575-365-6662
Roger King	432-686-8235	575-361-3605
NPC Office		
Emergency Phone	432-686-8235 x500	

EMERGENCY RESPONSE NUMBERS

Eddy County, New Mexico

State Police – Carlsbad		575-885-3137
City Police – Carlsbad		575-885-2111
State & City Police - Artesia		575-746-2703
Eddy County Sheriff - Carlsbad		575-887-7551
Fire Department – Carlsbad		575-887-3798
Fire Department – Artesia		575-746-2701
Local Emergency Planning – Carlsbad		575-887-6544
Local Emergency Planning – Artesia		575-746-2122
New Mexico Oil Conservation Division - Carlsbad		575-748-1283
Randy Dade – OCD District Supervisor-Carlsbad		575-626-1372 (cell)
Bureau of Land Management - Carlsbad		575-234-5972
State Emergency Response Center (SERC) – Santa Fe		505-476-9600
24 hour		505-827-9126
NM State Emergency Operations Center		505-476-9635
National Emergency Response Center (Washington DC)		800-424-8802
Other:		
Boots & Coots IWC	800-256-9688 or	281-934-8884
Cudd Pressure Control	432-699-0139 or	432-563-3356
Halliburton		575-746-2757
BJ Services		575-746-3569
Flight for Life – 4000 24th St, Lubbock, Texas		806-743-9911
Aerocare – R3, Box 49F, Lubbock, Texas		806-747-8923
Med Flight Air Ambulance – 2301 Yale Blvd., Albuq, NM		505-842-4433
SB Aid Med Serv – 2505 Clark Carr Loop SE, Albuq, NM		505-842-4949

PROTECTION OF THE GENERAL (ROE) RADIUS OF EXPOSURE

In the event greater than 100 ppm H2S is present, the ROE calculations will be done to determine if the following conditions exist and whether the Plan must be activated:

* 100 ppm at any public area (any place not associated with this site)

* 500 ppm at any public road (any road which the general public may travel).

* 100 ppm radius of 3000' will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H2S could be present in concentrations greater than 100 ppm in the gas mixture.

Calculation for the 100 ppm ROE: (H2S concentrations in decimal form)

ROE = [(1.589)(H2S concentration)(Q)] (^0.6258) 10,000 ppm + = .01
1,000 ppm + = .001
Calculation for the 500 ppm ROE: 100 ppm + = .0001
10 ppm + = .00001

ROE = [(0.4546)(H2S concentration)(Q)] (^0.6258)

EXAMPLE: If a well/facility has been determined to have 650 ppm H2S in the gas mixture and the well/facility is producing at a gas rate of 200 MCFD then:

ROE for 100 ppm ROE=[(1.589)(.00065)(200,000)] ^0.6258
ROE=28.1'
ROE for 500 ppm ROE=[(.4546)(.00065)(200,000)] ^0.6258
ROE=12.8'

These calculations will be forwarded to the appropriate NMOCD district office when applicable.

PUBLIC EVACUATION PLAN

When the supervisor has determined that the general public will be involved, the following plan will be implemented.

1. Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.
2. A trained person in H2S safety shall monitor with detection equipment the H2S concentration, wind and area of exposure. This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. All monitoring equipment shall be UL approved for use in Class I Groups A, B, C & D, Division I hazardous locations. All monitors will have a minimum capability of measuring H2S, oxygen, and flammable values.
3. Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.
4. The company representative shall stay in communication with all agencies throughout the duration of the situation and inform such agencies when the situation has been contained and the affected area is safe to enter.

PROCEDURE FOR IGNITING AN UNCONTROLLABLE CONDITION

The decision to ignite a well should be a last resort with one, if not both, of the following conditions:

1. Human life and/or property are endangered.
2. There is no hope of bringing the situation under control with the prevailing conditions at the site.

Instructions for Igniting the Well:

1. Two people are required. They must be equipped with positive pressure, self-contained breathing apparatus and "D"-ring style, full body, OSHA approved safety harness. Non-flammable rope will be attached.
2. One of the people will be a qualified safety person who will test the atmosphere for H2S, oxygen and LFL. The other person will be the designated company representative.
3. Ignite upwind from a distance no closer than necessary. Make sure that the ignition site has the maximum escape avenue available. A 25mm flare gun with a range of approximately +/- 500 feet shall be used to ignite the gas.
4. Before igniting, check for the presence of combustible gases.
5. After igniting, continue emergency actions and procedures as before.

REQUIRED EMERGENCY EQUIPMENT

1. Breathing Apparatus

- Rescue Packs (SCBA) – 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
- Work / Escape Packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
- Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.

2. Signage and Flagging

- One Color Code Condition Sign will be placed at the entrance to the site reflecting the possible conditions at the site.
- A Colored Condition flag will be on display reflecting the condition at the site at that time.

3. Briefing Area

- Two perpendicular areas will be designated by signs and readily accessible.

4. Windsocks

- Two windsocks will be placed in strategic locations, visible from all angles.

5. H2S Detectors and Alarms

- The stationary detector with three (3) sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible alarm @ 15 ppm. Calibrate a

minimum of every 30 days or as needed. The three sensors will be placed in the following places: (Gas sample tubes will be stored in the safety trailer):

- Rig Floor
- Bell Nipple
- End of flow line or where well bore fluid is being discharged

6. **Auxiliary Rescue Equipment**
   - Stretcher
   - Two OSHA full body harnesses
   - 100' of 5/8" OSHA approved rope
   - One 20 lb. Class ABC fire extinguisher
   - Communication via cell phones on location and vehicles on location

USING SELF-CONTAINED BREATHING AIR EQUIPMENT (SCBA)

1. SCBA should be worn when any of the following are performed:
   - Working near the top or on top of a tank
   - Disconnecting any line where H2S can reasonably be expected.
   - Sampling air in the area to determine if toxic concentrations of H2S exist.
   - Working in areas where over 10 ppm of H2S has been detected.
   - At any time there is a doubt of the level of H2S in the area.
2. All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.
3. Facial hair and standard eyeglasses are not allowed with SCBA.
4. Contact lenses are never allowed with SCBA.
5. When breaking out any line where H2S can reasonably be expected.
6. After each use, the SCBA unit shall be cleaned, disinfected, serviced and inspected.
7. All SCBA shall be inspected monthly.

RESCUE & FIRST AID FOR VICTIMS OF H2S POISONING

- Do not panic.
- Remain calm and think.
- Put on the breathing apparatus.
- Remove the victim to the safe breathing area as quickly as possible, upwind and uphill from source or crosswind to achieve upwind.
- Notify emergency response personnel.
- Provide artificial respiration and/or CPR as necessary.
- Remove all contaminated clothing to avoid further exposure.
- A minimum of two (2) personnel on location shall be trained in CPR and First Aid.

TOXIC EFFECTS OF H2S POISONING

Hydrogen Sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 PPM, which is .001% by volume. Hydrogen Sulfide is heavier than air (specific gravity-1.192) and is colorless and transparent. Hydrogen Sulfide is almost as toxic as Hydrogen Cyanide and is 5-6 times more toxic that Carbon Monoxide. Occupational exposure limits for Hydrogen sulfide and other gasses are compared below in Table 1. Toxicity table for H2S and physical effects are shown in Table II.

Table 1

Permissible Exposure Limits of Various Gasses

Common Name	Symbol	Sp. Gravity	TLV	STEL	IDLH
Hydrogen Cyanide	HCN	.94	4.7 ppm	C	
Hydrogen Sulfide	H2S	1.192	10 ppm	15 ppm	100 ppm
Sulfide Dioxide	SO2	2.21	2 ppm	5 ppm	
Chlorine	CL	2.45	.5 ppm	1 ppm	
Carbon Monoxide	CO	.97	25 ppm	200 ppm	
Carbon Dioxide	CO2	1.52	5000 ppm	30,000 ppm	
Methane	CH4	.55	4.7% LEL	14% UEL	

Definitions

A. TLV – Threshold Limit Value is the concentration employees may be exposed to based on a TWA (time weighted average) for eight (8) hours in one day for 40 hours in one (1) week. This is set by ACGIH (American Conference of Governmental Hygienists and regulated by OSHA.

B. STEL – Short Term Exposure Limit is the 15 minute average concentration an employee may be exposed to providing that the highest exposure never exceeds the OEL (Occupational Exposure Limit). The OEL for H2S is 19 PPM.

C. IDLH – Immediately Dangerous to Life and Health is the concentration that has been determined by the ACGIH to cause serious health problems or death if exposed to this level. The IDLH for H2S is 100 PPM.

D. TWA – Time Weighted Average is the average concentration of any chemical or gas for an eight (8) hour period. This is the concentration that any employee may be exposed to based on an TWA.

TABLE II

Toxicity Table of H2S

Percent %	PPM	Physical Effects
.0001	1	Can smell less than 1 ppm.
.001	10	TLV for 8 hours of exposure
.0015	15	STEL for 15 minutes of exposure
.01	100	Immediately Dangerous to Life & Health. Kills sense of smell in 3 to 5 minutes.
.02	200	Kills sense of smell quickly, may burn eyes and throat.
.05	500	Dizziness, cessation of breathing begins in a few minutes.
.07	700	Unconscious quickly, death will result if not rescued promptly.
.10	1000	Death will result unless rescued promptly. Artificial resuscitation may be necessary.

PHYSICAL PROPERTIES OF H2S

The properties of all gases are usually described in the context of seven major categories:

COLOR
ODOR
VAPOR DENSITY
EXPLOSIVE LIMITS
FLAMMABILITY
SOLUBILITY (IN WATER)
BOILING POINT

Hydrogen Sulfide is no exception. Information from these categories should be considered in order to provide a fairly complete picture of the properties of the gas.

COLOR – TRANSPARENT
Hydrogen Sulfide is colorless so it is invisible. This fact simply means that you can't rely on your eyes to detect its presence, a fact that makes the gas extremely dangerous to be around.

ODOR – ROTTEN EGGS
Hydrogen Sulfide has a distinctive offensive smell, similar to "rotten eggs." For this reason it earned its common name "sour gas." However, H2S, even in low concentrations, is so toxic that it attacks and quickly impairs a victim's sense of smell, so it could be fatal to rely on your nose as a detection device.

VAPOR DENSITY – SPECIFIC GRAVITY OF 1.192
Hydrogen Sulfide is heavier than air so it tends to settle in low-lying areas like pits, cellars or tanks. If you find yourself in a location where H2S is known to exist, protect yourself. Whenever possible, work in an area upwind and keep to higher ground.

EXPLOSIVE LIMITS – 4.3% TO 46%
Mixed with the right proportion of air or oxygen, H2S will ignite and burn or explode, producing another alarming element of danger besides poisoning.

FLAMMABILITY
Hydrogen Sulfide will burn readily with a distinctive clear blue flame, producing Sulfur Dioxide (SO2), another hazardous gas that irritates the eyes and lungs.

SOLUBILITY – 4 TO 1 RATIO WITH WATER
Hydrogen Sulfide can be dissolved in liquids, which means that it can be present in any container or vessel used to carry or hold well fluids including oil, water, emulsion and sludge. The solubility of H2S is dependent on temperature and pressure, but if conditions are right, simply agitating a fluid containing H2S may release the gas into the air.

BOILING POINT – (-76 degrees Fahrenheit)
Liquefied Hydrogen Sulfide boils at a very low temperature, so it is usually found as a gas.

Nearburg

Eddy, NM
Neptune 30
3H

Original Hole

Plan: Plan 1

Standard Planning Report

28 September, 2016

Nearburg
Eddy, NM
Neptune 30
3H
Plan 1

WELL DETAILS: 3H

Ground Level: 3461.0 RKB @ 3476.0usft

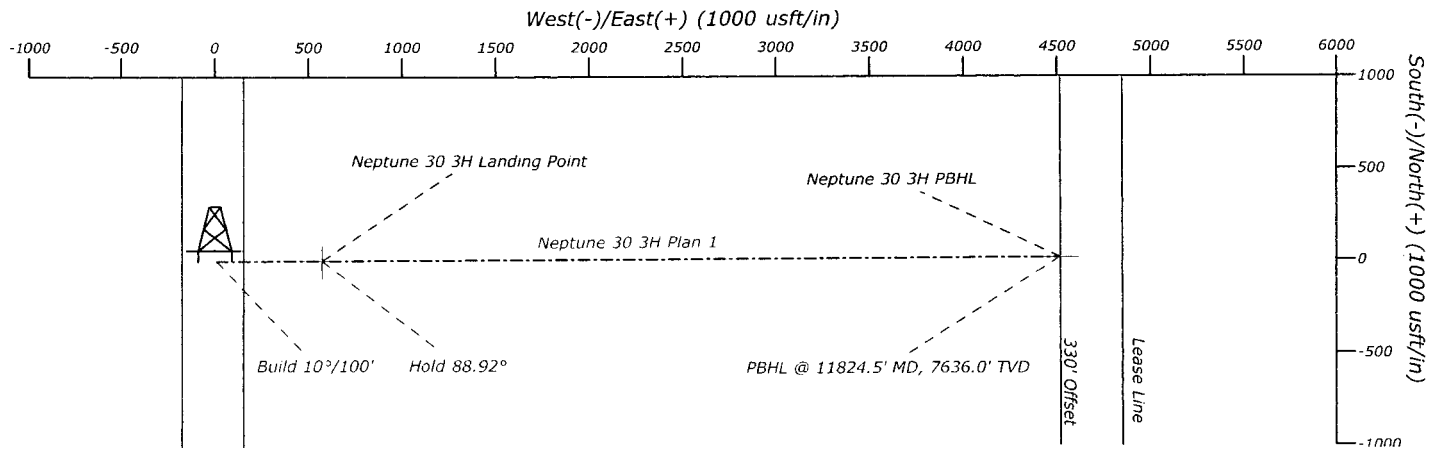
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	624279.90	606571.20	32.716007	-104.121229

PROJECT DETAILS: Eddy, NM

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

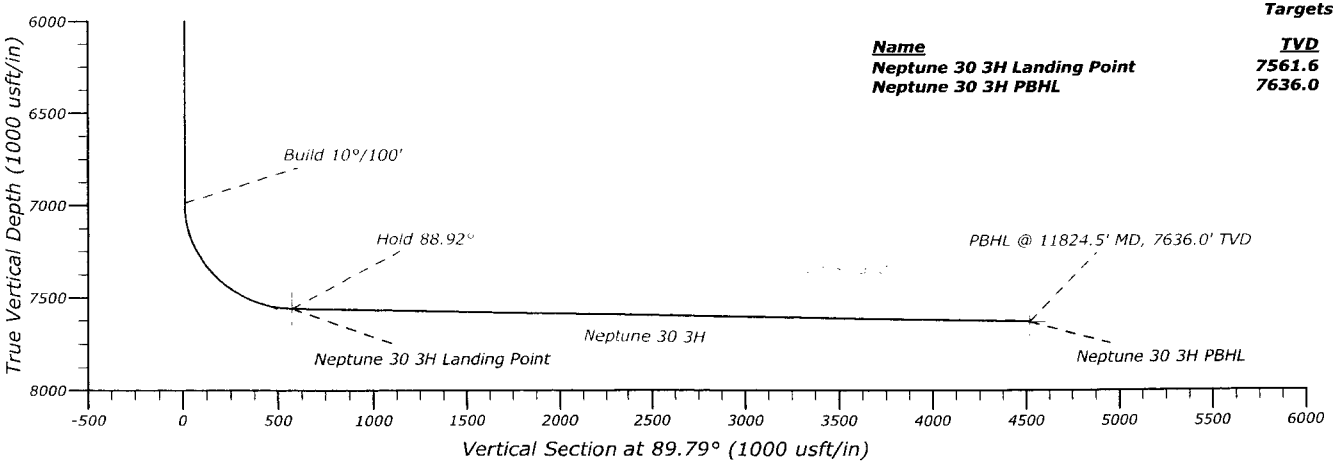
Formation Tops

TVDPath	MDPath	Formation
331.0	331.0	Salt
631.0	631.0	Base Salt
831.0	831.0	Yates
1191.0	1191.0	Seven Rives
1791.0	1791.0	Queen
2661.0	2661.0	San Andres
3561.0	3561.0	Bone Spring Lime
6511.0	6511.0	1 BS Sand
7338.3	7364.7	2 BS Sand



Section Plans

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
6988.8	0.00	0.00	6988.8	0.0	0.0	0.00	0.00	0.0	Build 10°/100'
7878.0	88.92	89.79	7561.6	2.1	562.2	10.00	89.79	562.2	Hold 88.92°
11824.5	88.92	89.79	7636.0	16.9	4508.0	0.00	0.00	4508.0	PBHL @ 11824.5' MD, 7636.0' TVD



Targets

Name	TVD	+N/-S	+E/-W	Northing	Easting
Neptune 30 3H Landing Point	7561.6	2.1	562.2	624282.01	607133.35
Neptune 30 3H PBHL	7636.0	16.9	4508.0	624296.80	611079.20

Azimuths to Grid North
True North: -0.12°
Magnetic North: 7.21°

Magnetic Field
Strength: 48244.7snT
Dip Angle: 60.43°
Date: 09/28/2016
Model: IGRF2015

To convert a Magnetic Direction to a True Direction, Add 7.32° East
Magnetic North is 7.32° East of True North (Magnetic Declination)

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well 3H
Company:	Nearburg	**TVD Reference:**	RKB @ 3476.0usft
Project:	Eddy, NM	**MD Reference:**	RKB @ 3476.0usft
Site:	Neptune 30	**North Reference:**	Grid
Well:	3H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan 1		

Project	Eddy, NM		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Neptune 30

Site Position:		**Northing:**	622,960.20 usft	**Latitude:**	32.712379
From:	Map	**Easting:**	606,569.90 usft	**Longitude:**	-104.121242
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.11 °

Well 3H

Well Position	**+N/-S**	1,319.7 usft	**Northing:**	624,279.90 usft	**Latitude:**	32.716007
	+E/-W	1.3 usft	**Easting:**	606,571.20 usft	**Longitude:**	-104.121230
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	0.0 usft	**Ground Level:**	3,461.0 usft

Wellbore Original Hole

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	09/28/16	7.32	60.43	48,245

Design Plan 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	89.79	

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	
6,988.8	0.00	0.00	6,988.8	0.0	0.0	0.00	0.00	0.00	0.00	
7,878.0	88.92	89.79	7,561.6	2.1	562.2	10.00	10.00	0.00	89.79	
11,824.5	88.92	89.79	7,636.0	16.9	4,508.0	0.00	0.00	0.00	0.00	Neptune 30 3H PBHL

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well 3H
Company:	Nearburg	**TVD Reference:**	RKB @ 3476.0usft
Project:	Eddy, NM	**MD Reference:**	RKB @ 3476.0usft
Site:	Neptune 30	**North Reference:**	Grid
Well:	3H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan 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
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
331.0	0.00	0.00	331.0	0.0	0.0	0.0	0.00	0.00	0.00
Salt									
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
631.0	0.00	0.00	631.0	0.0	0.0	0.0	0.00	0.00	0.00
Base Salt									
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
831.0	0.00	0.00	831.0	0.0	0.0	0.0	0.00	0.00	0.00
Yates									
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
1,191.0	0.00	0.00	1,191.0	0.0	0.0	0.0	0.00	0.00	0.00
Seven Rives									
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
1,791.0	0.00	0.00	1,791.0	0.0	0.0	0.0	0.00	0.00	0.00
Queen									
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
2,661.0	0.00	0.00	2,661.0	0.0	0.0	0.0	0.00	0.00	0.00
San Andres									
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
3,561.0	0.00	0.00	3,561.0	0.0	0.0	0.0	0.00	0.00	0.00
Bone Spring Lime									
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

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well 3H
Company:	Nearburg	**TVD Reference:**	RKB @ 3476.0usft
Project:	Eddy, NM	**MD Reference:**	RKB @ 3476.0usft
Site:	Neptune 30	**North Reference:**	Grid
Well:	3H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan 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)
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
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
6,511.0	0.00	0.00	6,511.0	0.0	0.0	0.0	0.00	0.00	0.00
1 BS Sand									
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
6,988.8	0.00	0.00	6,988.8	0.0	0.0	0.0	0.00	0.00	0.00
Build 10°/100'									
7,000.0	1.12	89.79	7,000.0	0.0	0.1	0.1	10.00	10.00	0.00
7,100.0	11.12	89.79	7,099.3	0.0	10.8	10.8	10.00	10.00	0.00
7,200.0	21.12	89.79	7,195.2	0.1	38.5	38.5	10.00	10.00	0.00
7,300.0	31.12	89.79	7,284.9	0.3	82.5	82.5	10.00	10.00	0.00
7,364.7	37.59	89.79	7,338.3	0.4	119.0	119.0	10.00	10.00	0.00
2 BS Sand									
7,400.0	41.12	89.79	7,365.6	0.5	141.4	141.4	10.00	10.00	0.00
7,500.0	51.12	89.79	7,434.8	0.8	213.3	213.4	10.00	10.00	0.00
7,600.0	61.12	89.79	7,490.5	1.1	296.3	296.3	10.00	10.00	0.00
7,700.0	71.12	89.79	7,530.9	1.5	387.6	387.6	10.00	10.00	0.00
7,800.0	81.12	89.79	7,554.9	1.8	484.6	484.6	10.00	10.00	0.00
7,878.0	88.92	89.79	7,561.6	2.1	562.2	562.2	10.00	10.00	0.00
Hold 88.92° - Neptune 30 3H Landing Point									
7,900.0	88.92	89.79	7,562.0	2.2	584.2	584.2	0.00	0.00	0.00
8,000.0	88.92	89.79	7,563.9	2.6	684.2	684.2	0.00	0.00	0.00
8,100.0	88.92	89.79	7,565.8	2.9	784.2	784.2	0.00	0.00	0.00
8,200.0	88.92	89.79	7,567.7	3.3	884.1	884.1	0.00	0.00	0.00
8,300.0	88.92	89.79	7,569.6	3.7	984.1	984.1	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well 3H
Company:	Nearburg	**TVD Reference:**	RKB @ 3476.0usft
Project:	Eddy, NM	**MD Reference:**	RKB @ 3476.0usft
Site:	Neptune 30	**North Reference:**	Grid
Well:	3H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan 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)
8,400.0	88.92	89.79	7,571.5	4.1	1,084.1	1,084.1	0.00	0.00	0.00
8,500.0	88.92	89.79	7,573.3	4.4	1,184.1	1,184.1	0.00	0.00	0.00
8,600.0	88.92	89.79	7,575.2	4.8	1,284.1	1,284.1	0.00	0.00	0.00
8,700.0	88.92	89.79	7,577.1	5.2	1,384.0	1,384.1	0.00	0.00	0.00
8,800.0	88.92	89.79	7,579.0	5.6	1,484.0	1,484.0	0.00	0.00	0.00
8,900.0	88.92	89.79	7,580.9	5.9	1,584.0	1,584.0	0.00	0.00	0.00
9,000.0	88.92	89.79	7,582.8	6.3	1,684.0	1,684.0	0.00	0.00	0.00
9,100.0	88.92	89.79	7,584.6	6.7	1,784.0	1,784.0	0.00	0.00	0.00
9,200.0	88.92	89.79	7,586.5	7.1	1,884.0	1,884.0	0.00	0.00	0.00
9,300.0	88.92	89.79	7,588.4	7.4	1,983.9	1,983.9	0.00	0.00	0.00
9,400.0	88.92	89.79	7,590.3	7.8	2,083.9	2,083.9	0.00	0.00	0.00
9,500.0	88.92	89.79	7,592.2	8.2	2,183.9	2,183.9	0.00	0.00	0.00
9,600.0	88.92	89.79	7,594.1	8.6	2,283.9	2,283.9	0.00	0.00	0.00
9,700.0	88.92	89.79	7,596.0	8.9	2,383.9	2,383.9	0.00	0.00	0.00
9,800.0	88.92	89.79	7,597.8	9.3	2,483.8	2,483.9	0.00	0.00	0.00
9,900.0	88.92	89.79	7,599.7	9.7	2,583.8	2,583.8	0.00	0.00	0.00
10,000.0	88.92	89.79	7,601.6	10.1	2,683.8	2,683.8	0.00	0.00	0.00
10,100.0	88.92	89.79	7,603.5	10.4	2,783.8	2,783.8	0.00	0.00	0.00
10,200.0	88.92	89.79	7,605.4	10.8	2,883.8	2,883.8	0.00	0.00	0.00
10,300.0	88.92	89.79	7,607.3	11.2	2,983.7	2,983.8	0.00	0.00	0.00
10,400.0	88.92	89.79	7,609.1	11.6	3,083.7	3,083.8	0.00	0.00	0.00
10,500.0	88.92	89.79	7,611.0	11.9	3,183.7	3,183.7	0.00	0.00	0.00
10,600.0	88.92	89.79	7,612.9	12.3	3,283.7	3,283.7	0.00	0.00	0.00
10,700.0	88.92	89.79	7,614.8	12.7	3,383.7	3,383.7	0.00	0.00	0.00
10,800.0	88.92	89.79	7,616.7	13.1	3,483.7	3,483.7	0.00	0.00	0.00
10,900.0	88.92	89.79	7,618.6	13.4	3,583.6	3,583.7	0.00	0.00	0.00
11,000.0	88.92	89.79	7,620.5	13.8	3,683.6	3,683.6	0.00	0.00	0.00
11,100.0	88.92	89.79	7,622.3	14.2	3,783.6	3,783.6	0.00	0.00	0.00
11,200.0	88.92	89.79	7,624.2	14.6	3,883.6	3,883.6	0.00	0.00	0.00
11,300.0	88.92	89.79	7,626.1	14.9	3,983.6	3,983.6	0.00	0.00	0.00
11,400.0	88.92	89.79	7,628.0	15.3	4,083.5	4,083.6	0.00	0.00	0.00
11,500.0	88.92	89.79	7,629.9	15.7	4,183.5	4,183.6	0.00	0.00	0.00
11,600.0	88.92	89.79	7,631.8	16.1	4,283.5	4,283.5	0.00	0.00	0.00
11,700.0	88.92	89.79	7,633.7	16.4	4,383.5	4,383.5	0.00	0.00	0.00
11,800.0	88.92	89.79	7,635.5	16.8	4,483.5	4,483.5	0.00	0.00	0.00
11,824.5	88.92	89.79	7,636.0	16.9	4,508.0	4,508.0	0.00	0.00	0.00

PBHL @ 11824.5' MD, 7636.0' TVD - Neptune 30 3H PBHL

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
Neptune 30 3H Landing - plan hits target center - Point	0.00	0.00	7,561.6	2.1	562.2	624,282.01	607,133.36	32.716009	-104.119402
Neptune 30 3H PBHL - plan hits target center - Point	0.00	0.00	7,636.0	16.9	4,508.0	624,296.80	611,079.20	32.716027	-104.106572

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well 3H
Company:	Nearburg	**TVD Reference:**	RKB @ 3476.0usft
Project:	Eddy, NM	**MD Reference:**	RKB @ 3476.0usft
Site:	Neptune 30	**North Reference:**	Grid
Well:	3H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan 1		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
331.0	306.0	Salt		1.10	89.79
631.0	606.0	Base Salt		1.10	89.79
831.0	806.0	Yates		1.10	89.79
1,191.0	1,166.0	Seven Rives		1.10	89.79
1,791.0	1,766.0	Queen		1.10	89.79
2,661.0	2,636.0	San Andres		1.10	89.79
3,561.0	3,536.0	Bone Spring Lime		1.10	89.79
6,511.0	6,486.0	1 BS Sand		1.10	89.79
7,364.7	7,313.3	2 BS Sand		1.10	89.79

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
6,988.8	6,988.8	0.0	0.0	Build 10°/100'
7,878.0	7,561.6	2.1	562.2	Hold 88.92°
11,824.5	7,636.0	16.9	4,508.0	PBHL @ 11824.5' MD, 7636.0' TVD

Eddy County, NM

S30, T18S, 29E

Neptune 30 Federal Com #3 H

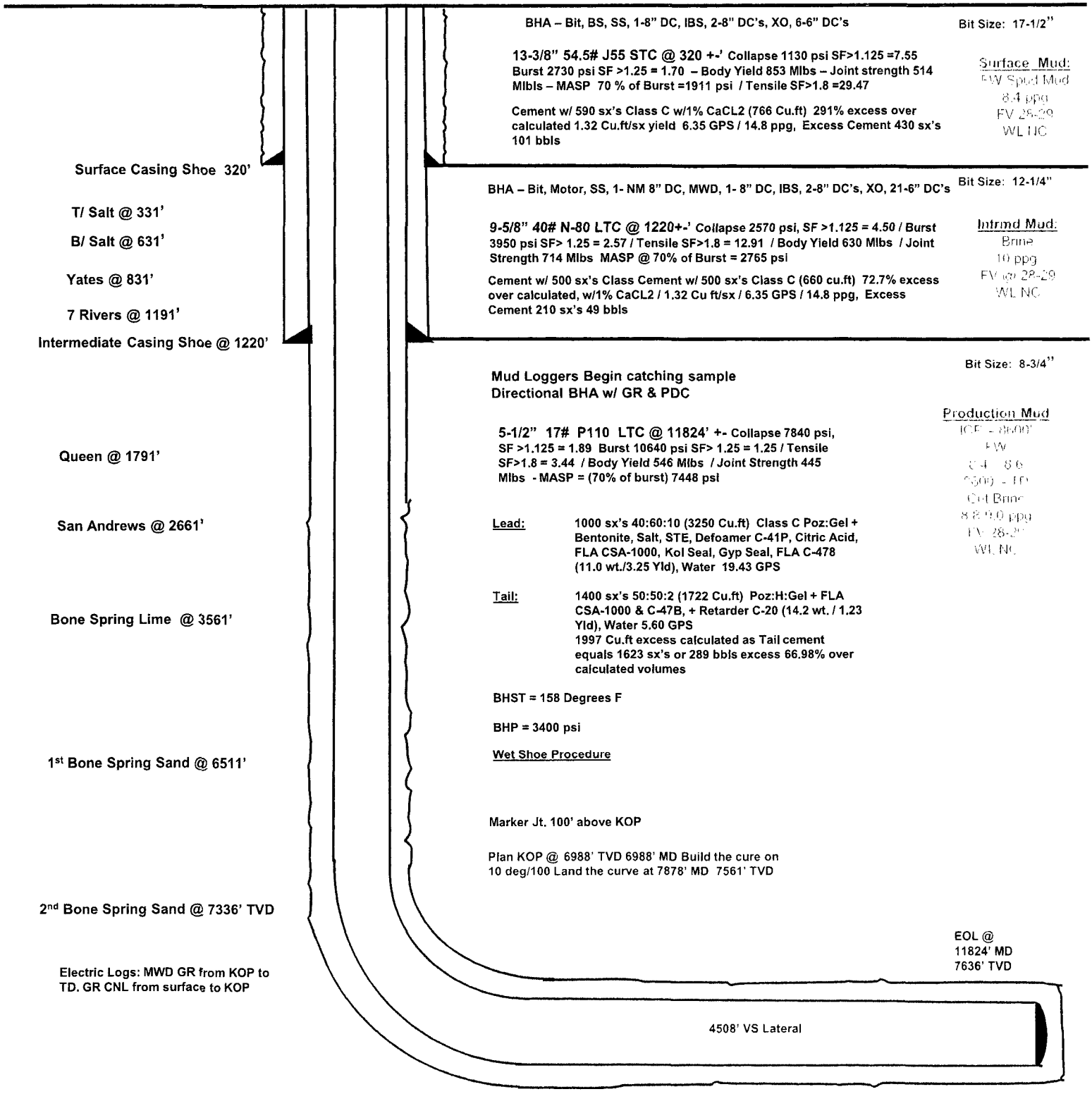
2nd Bone Spring

Proposed Horizontal Wellbore w/ cement plan

Rig:	Unknown
Dir Drlg:	
Well Type:	Horizontal
AFE Days:	23
AFE M$:	$2.1M

SHL	BHL
1770' FSL	1170' FSL
180' FWL	330' FEL

KB: 3451'
GL: 3461'



BHA – Bit, BS, SS, 1-8" DC, IBS, 2-8" DC's, XO, 6-6" DC's

Bit Size: 17-1/2"

13-3/8" 54.5# J55 STC @ 320 +-' Collapse 1130 psi SF>1.125 =7.55 Burst 2730 psi SF >1.25 = 1.70 – Body Yield 853 Mlbs – Joint strength 514 Mlbls – MASP 70 % of Burst =1911 psi / Tensile SF>1.8 =29.47

Cement w/ 590 sx's Class C w/1% CaCL2 (766 Cu.ft) 291% excess over calculated 1.32 Cu.ft/sx yield 6.35 GPS / 14.8 ppg, Excess Cement 430 sx's 101 bbls

Surface Mud:
FW Spud Mud
8.4 ppg
FV 28-29
WL NC

BHA – Bit, Motor, SS, 1- NM 8" DC, MWD, 1- 8" DC, IBS, 2-8" DC's, XO, 21-6" DC's

Bit Size: 12-1/4"

9-5/8" 40# N-80 LTC @ 1220+-' Collapse 2570 psi, SF >1.125 = 4.50 / Burst 3950 psi SF> 1.25 = 2.57 / Tensile SF>1.8 = 12.91 / Body Yield 630 Mlbs / Joint Strength 714 Mlbs MASP @ 70% of Burst = 2765 psi

Cement w/ 500 sx's Class Cement w/ 500 sx's Class C (660 cu.ft) 72.7% excess over calculated, w/1% CaCL2 / 1.32 Cu ft/sx / 6.35 GPS / 14.8 ppg, Excess Cement 210 sx's 49 bbls

Intrmd Mud:
Brine
10 ppg
FV @ 28-29
WL NC

Bit Size: 8-3/4"

Mud Loggers Begin catching sample
Directional BHA w/ GR & PDC

5-1/2" 17# P110 LTC @ 11824' +- Collapse 7840 psi, SF >1.125 = 1.89 Burst 10640 psi SF> 1.25 = 1.25 / Tensile SF>1.8 = 3.44 / Body Yield 546 Mlbs / Joint Strength 445 Mlbs - MASP = (70% of burst) 7448 psi

Production Mud
ICP - 8600'
FW
8.4 - 8.6
8500 - TD
Cut Brine
8.8-9.0 ppg
FV 28-2[illegible]
WL NC

Lead: 1000 sx's 40:60:10 (3250 Cu.ft) Class C Poz:Gel + Bentonite, Salt, STE, Defoamer C-41P, Citric Acid, FLA CSA-1000, Kol Seal, Gyp Seal, FLA C-478 (11.0 wt./3.25 Yld), Water 19.43 GPS

Tail: 1400 sx's 50:50:2 (1722 Cu.ft) Poz:H:Gel + FLA CSA-1000 & C-47B, + Retarder C-20 (14.2 wt. / 1.23 Yld), Water 5.60 GPS
1997 Cu.ft excess calculated as Tail cement equals 1623 sx's or 289 bbls excess 66.98% over calculated volumes

BHST = 158 Degrees F

BHP = 3400 psi

Wet Shoe Procedure

Marker Jt. 100' above KOP

Plan KOP @ 6988' TVD 6988' MD Build the cure on 10 deg/100 Land the curve at 7878' MD 7561' TVD

EOL @
11824' MD
7636' TVD

TD: 11824'

rds:10/06/2016

APD ID: 10400007716 **Submission Date:** 11/15/2016

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

Well Type: OIL WELL **Well Work Type:** Drill

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Neptune 30 Fed Com 3H_Existing Roads_11-14-2016.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:

Neptune 30 Fed Com 3H_New Road Plats_11-14-2016.pdf

New road type: TWO-TRACK

Length: 1120 Feet **Width (ft.):** 30

Max slope (%): 2 **Max grade (%):** 1

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 15

New road access erosion control: Road will be crowned and ditched to prevent erosion.

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: BOTH

Access surfacing type description: 6" rolled and compacted caliche

Access *onsite topsoil source depth*: 6

Offsite topsoil source description: Surfacing mat'l will consist of native caliche obtained from the well site if possible. Otherwise, caliche will be hauled from nearest caliche pit.
Onsite topsoil removal process: Grading

Access other construction information:

Access *miscellaneous information*:

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

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and be consistent with local drainage patterns.
Road Drainage Control Structures (DCS) description: No drainage control necessary.

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:

Neptune 30 Fed Com 3H_One Mile Radius_11-14-2016.pdf

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: If well is productive, tank battery will be installed on well pad. Tank Battery construction and installation plans will be submitted via Sundry Notice.

Section 5 - Location and Types of Water Supply

Water Source Table

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

Water source use type: INTERMEDIATE/PRODUCTION CASING, SURFACE CASING **Water source type:** GW WELL

Describe type:

Source latitude: **Source longitude:**

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: PIPELINE

Source transportation land ownership: PRIVATE

Water source volume (barrels): 0 **Source volume (acre-feet):** 0

Source volume (gal): 0

Water source and transportation map:

Neptune 30 Fed Com 3H_Water Source Map_11-14-2016.pdf

Water source comments: Water will be obtained from frac ponds in Section 36, T-18S, R-28E (see attached map). This is the only known water source in the area.
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: Construction materials will be used from the location. No additional needs are anticipated. If additional caliche is needed, it will be obtained from the BLM caliche pit in Section 28, T-18S, R-30E.
Construction Materials source location attachment:

Neptune 30 Fed Com 3H_Construction Materials_02-15-2017.pdf

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drilling Fluids

Amount of waste: 6000 barrels

Waste disposal frequency : Daily

Safe containment description: Steel tanks

Safe containmant attachment:

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

Disposal location description: Trucked to approved disposal facility.

Waste type: COMPLETIONS/STIMULATION

Waste content description: Completion Fluids

Amount of waste: 2000 barrels

Waste disposal frequency : Daily

Safe containment description: Steel tanks

Safe containmant attachment:

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

Disposal location description: Trucked to an approved disposal facility

Waste type: FLOWBACK

Waste content description: Oil

Amount of waste: 1000 barrels

Waste disposal frequency : One Time Only

Safe containment description: Frac tanks

Safe containmant attachment:

Waste disposal type: OTHER **Disposal location ownership:** PRIVATE

Disposal type description: Haul to tank battery

Disposal location description: Trucked to tank battery.

Waste type: SEWAGE

Waste content description: Human waste

Amount of waste: 50 pounds

Waste disposal frequency : Weekly

Safe containment description: Portable toilets

Safe containmant attachment:

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

Disposal type description:

Disposal location description: Serviced by toilet rental company

Waste type: PRODUCED WATER

Waste content description: Produced water

Amount of waste: 4000 barrels

Waste disposal frequency : One Time Only

Safe containment description: Steel tanks

Safe containmant attachment:

Waste disposal type: OTHER **Disposal location ownership:** PRIVATE

Disposal type description: Haul to battery

Disposal location description: Trucked to tank battery.

Waste type: GARBAGE

Waste content description: Trash and debris

Amount of waste: 200 pounds

Waste disposal frequency : One Time Only

Safe containment description: roll-off bin with netted top

Safe containmant attachment:

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

Disposal type description:

Disposal location description: Truck to commercial waste facility

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

Waste type: DRILLING

Waste content description: Cuttings

Amount of waste: 1300 barrels

Waste disposal frequency : Daily

Safe containment description: *Steel bins*

Safe containmant attachment:

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

Disposal type description:

Disposal location description: Trucked to an approved disposal facility. Estimated 4800 bbls total.

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? YES

Description of cuttings location Stored in steel bin and hauled to disposal site by truck.

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:

Neptune 30 Fed Com 3H_Well Site Layout_11-15-2016.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: NEW

Recontouring attachment:

Neptune 30 Fed Com 3H_Interim Reclamation_11-14-2016.pdf

Drainage/Erosion control construction: Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion.
Drainage/Erosion control reclamation: Any portion of the site that is not needed for future operations will be reclaimed to the original state as much as possible.

Wellpad long term disturbance (acres): 2.1 **Wellpad short term disturbance (acres):** 2.1

Access road long term disturbance (acres): 0.77 **Access road short term disturbance (acres):** 0.38

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: 2.87 **Total short term disturbance:** 2.48

Reconstruction method: West side of well pad will be reclaimed after completion operations.

Topsoil redistribution: After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible.
Soil treatment: *No treatment necessary.*

Existing Vegetation at the well pad: mesquite, shinnery oak

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: mesquite, shinnery oak

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: mesquite, shinnery oak

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: No other disturbances.

Existing Vegetation Community at other disturbances attachment:

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

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: PERENNIAL GRASS

Seed source: COMMERCIAL

Seed name: LPC-Seed Mix 2

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location: WELL PAD

PLS pounds per acre: 5

Proposed seeding season: SPRING

Seed Summary

Total pounds/Acre: 5

Seed Type	Pounds/Acre
PERENNIAL GRASS	5

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Tim

Last Name: Green

Phone: (432)686-8235

Email: tgreen@nearburg.com

Seedbed prep: Rip and add topsoil.

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: All areas will be monitored, and weeds will be treated.

Weed treatment plan attachment:

Monitoring plan description: Will monitor after final reclaim.

Monitoring plan attachment:

Success standards: N/A

Pit closure description: Utilize closed-loop.

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: PRIVATE OWNERSHIP,STATE GOVERNMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office: STATE OF NEW MEXICO

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

Fee Owner: COG

Fee Owner Address: One Concho Center 600 W. Illinois Ave. Midland, TX 79701

Phone: (432)683-7443

Email:

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: Surface Use Agreement concerning entry and surface restoration upon completion of drilling operations will be reached at least 30 days prior to commencing operations.

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Disturbance type: WELL PAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

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:**

Operator Name: NEARBURG PRODUCING COMPANY

Well Name: NEPTUNE 30 FEDERAL COM **Well Number:** 3H

Fee Owner: COG

Fee Owner Address: One Concho Center 600 W. Illinois Ave. Midland, TX 79701

Phone: (432)683-7443

Email:

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: Surface Use Agreement concerning entry and surface restoration upon completion of drilling operations will be reached at least 30 days prior to commencing operations.

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Section 12 - Other Information

Right of Way needed? YES **Use APD as ROW?** YES

ROW Type(s): 281001 ROW - ROADS,288100 ROW – O&G Pipeline

ROW Applications

SUPO Additional Information:

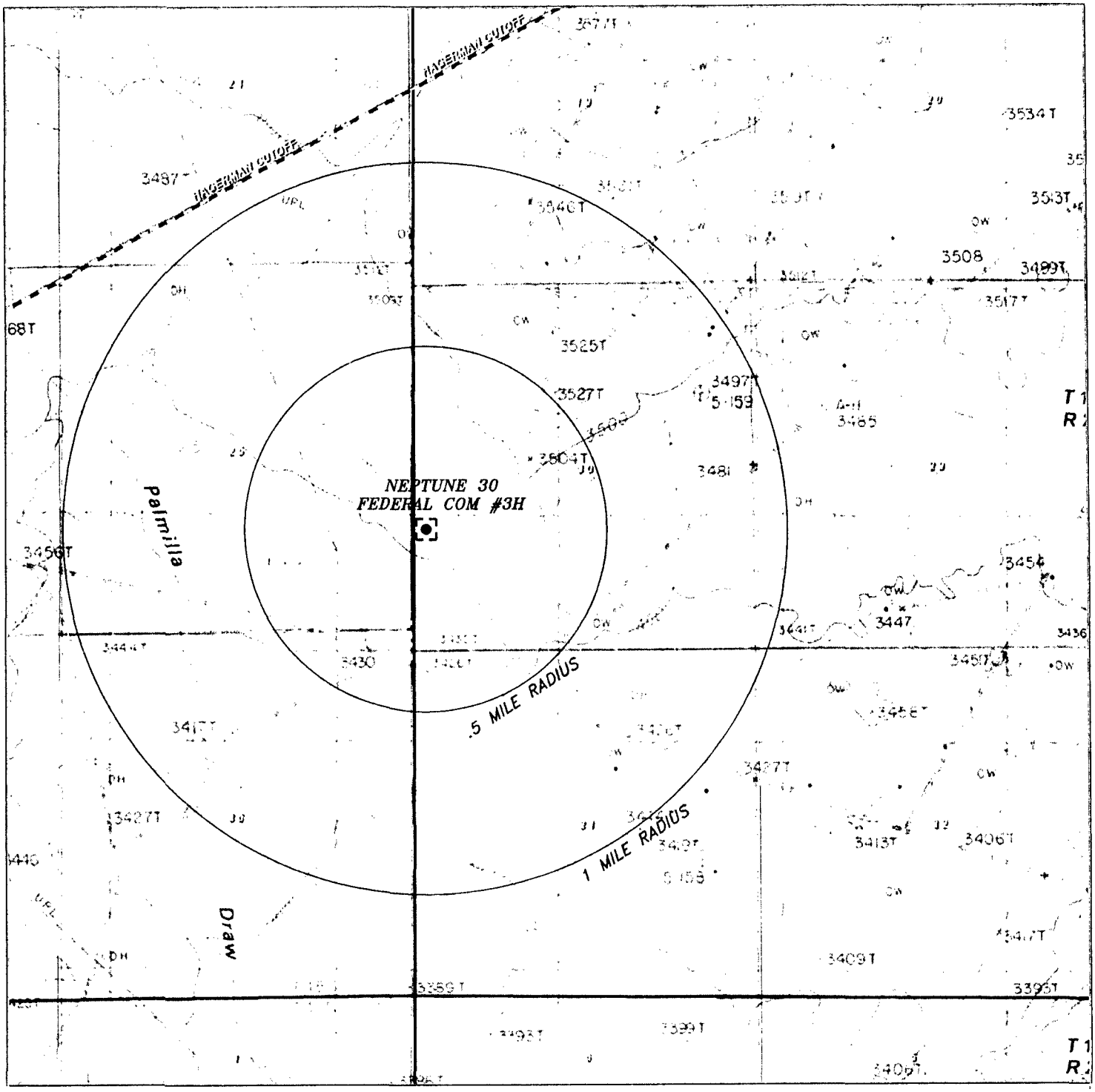
Use a previously conducted onsite? YES

Previous Onsite information: Brooke Wilson conducted On-Site on August 4, 2016

Other SUPO Attachment

Neptune 30 Fed Com 3H_Surface Plan Report_11-15-2016.pdf

Neptune 30 Fed Com 3H_SUPO Report 2-15-17_02-15-2017.pdf

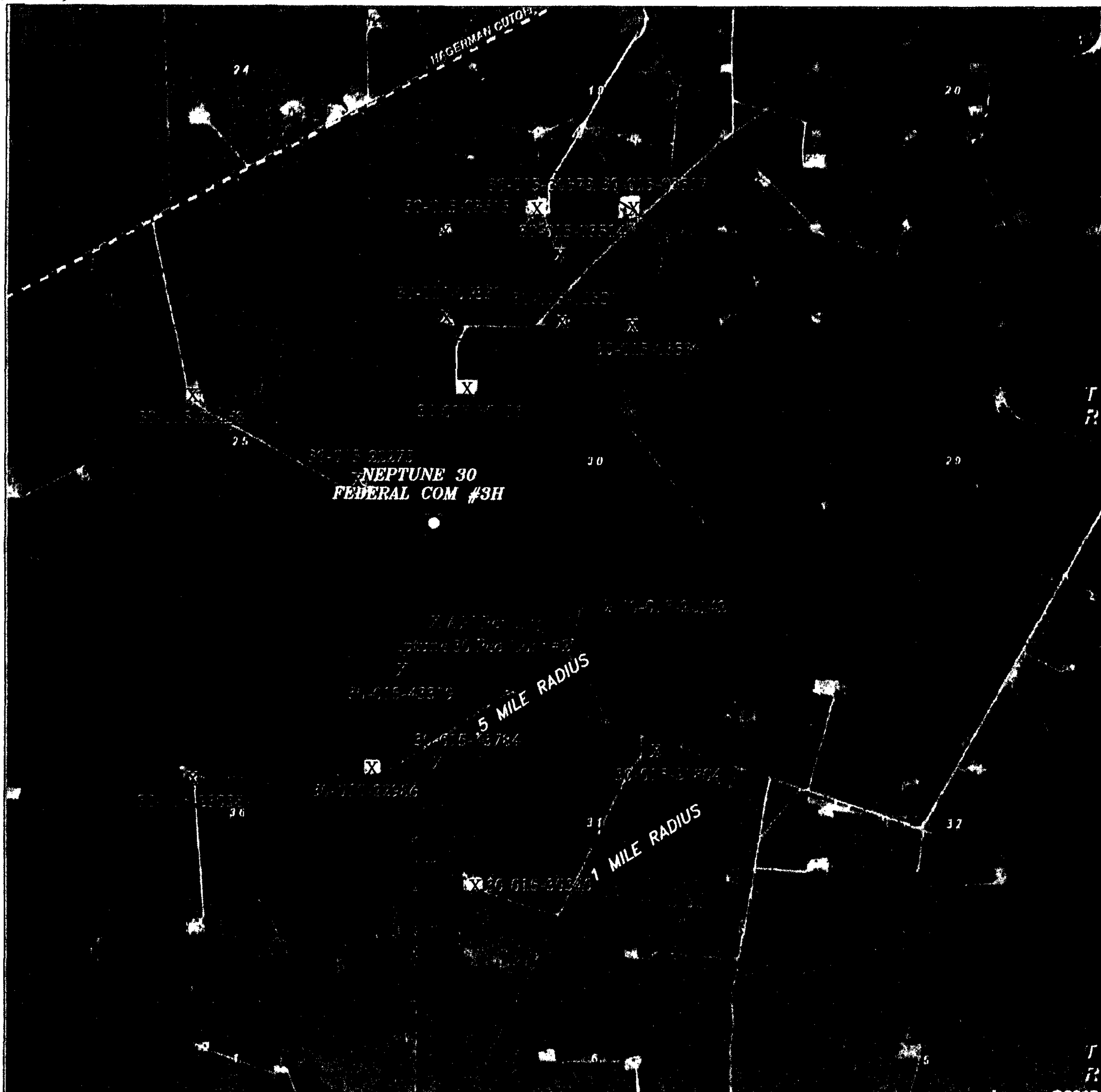


NEPTUNE 30 FEDERAL COM #3H

Surface 570' FSL and 85' FWL
Section 30, Township 18 South, Range 29 East,
N.M.P.M., Eddy County, New Mexico.

Surveys

NEARBURG PRODUCING CO.



NEPTUNE 30 FEDERAL COM #3H

Located 770' … and 55' …
Section 30, Township 18 South, Range 29 East,
N.M.P.M. Eddy County, New Mexico.

surveys

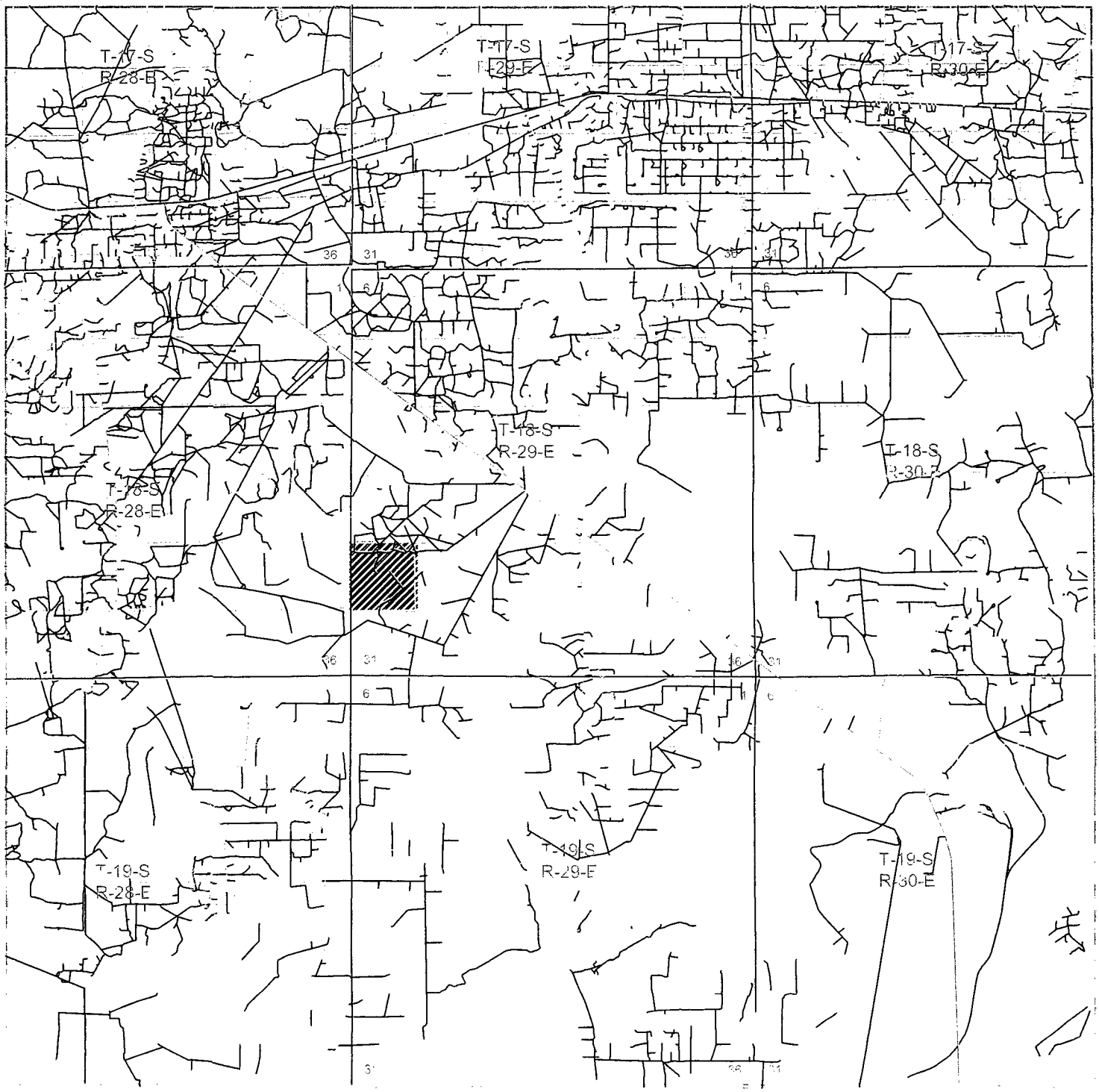
P.O. Box 1786
1120 N. West … R
Hobbs, New Mexico 8824…
(575) 393-7316 Office

SCALE 1" = 2000'
0 1000' 2000' 4000'

O. Number G 32409
Survey Date 8-16-20

N

NEARBURG PRODUCING CO.



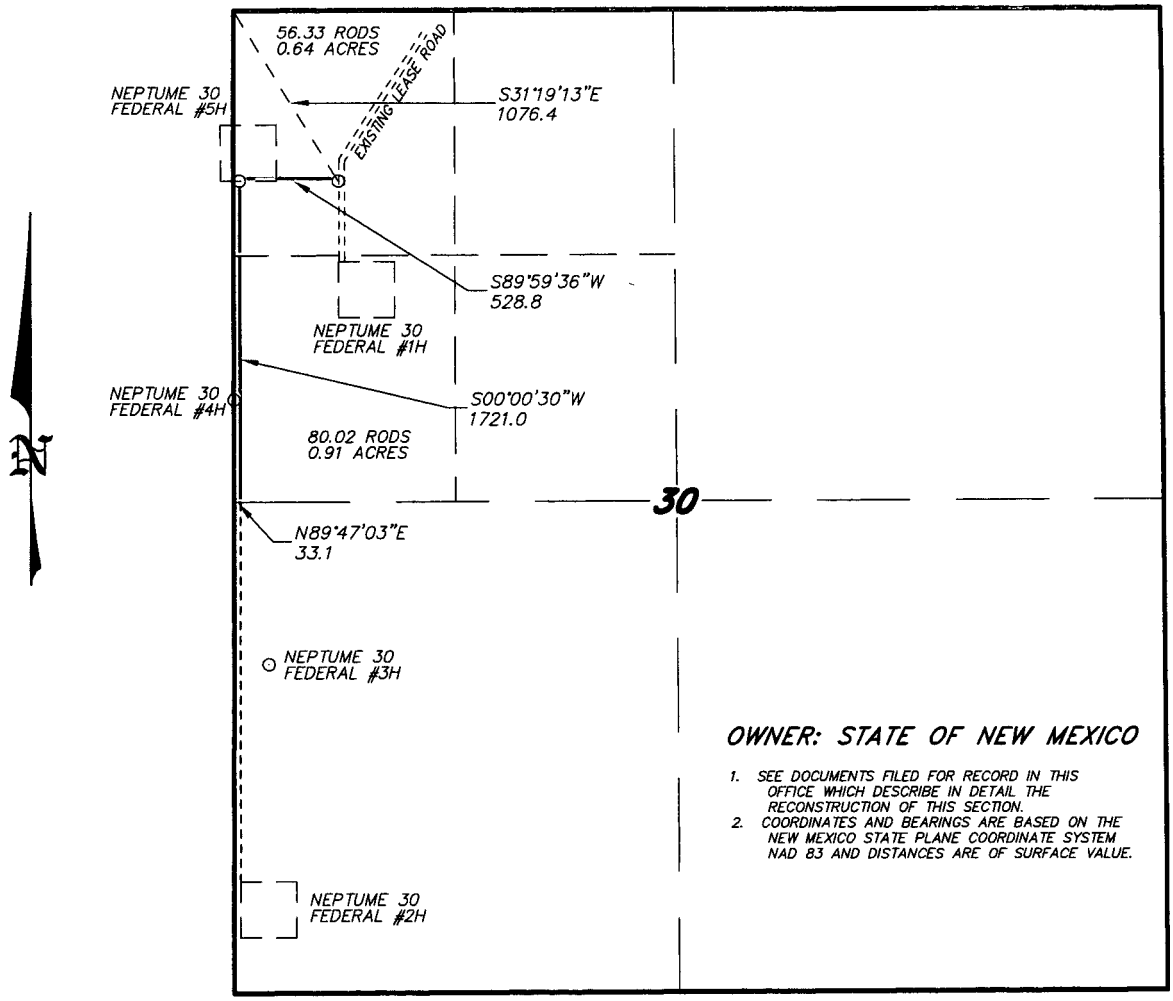
NEPTUNE 30 FEDERAL COM #3H

Located [illegible]
Section 30, Township 19 South, Range 29 East,
N.M.P.M., Eddy County, New Mexico

Surveys

NEARBURG PRODUCING CO.

SECTION 30, TOWNSHIP 18 SOUTH, RANGE 29 EAST, N.M.P.M.,
EDDY COUNTY, **NEW MEXICO.**



LEGAL DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE, LOCATED IN SECTION 30, TOWNSHIP 18 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND RIGHT OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY.

BEGINNING AT A POINT WHICH LIES S31°19'13"E., 1076.4 FEET FROM THE NORTHWEST CORNER OF SAID SECTION 30; THENCE S89°59'36"W., 528.8 FEET; THENCE S00°00'30"W., 1721.0 FEET TO A POINT ON THE SOUTH PROPERTY LINE WHICH LIES N89°47'03"E., 33.1 FEET FROM THE WEST QUARTER CORNER OF SAID SECTION 30. SAID STRIP OF LAND BEING 2249.8 FEET OR 136.35 RODS IN LENGTH AND CONTAINING 1.55 ACRES, MORE OR LESS, AND BEING ALLOCATED BY FORTIES AS FOLLOWS.

NW/4NW/4 56.33 RODS OR 0.64 ACRES
SW/4NW/4 80.02 RODS OR 0.91 ACRES

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES — NEW MEXICO — 7977 — REGISTERED PROFESSIONAL LAND SURVEYOR

GARY L. JONES No. 7977
TEXAS No. 5074

Surveys

1000 0 1000 2000 FEET

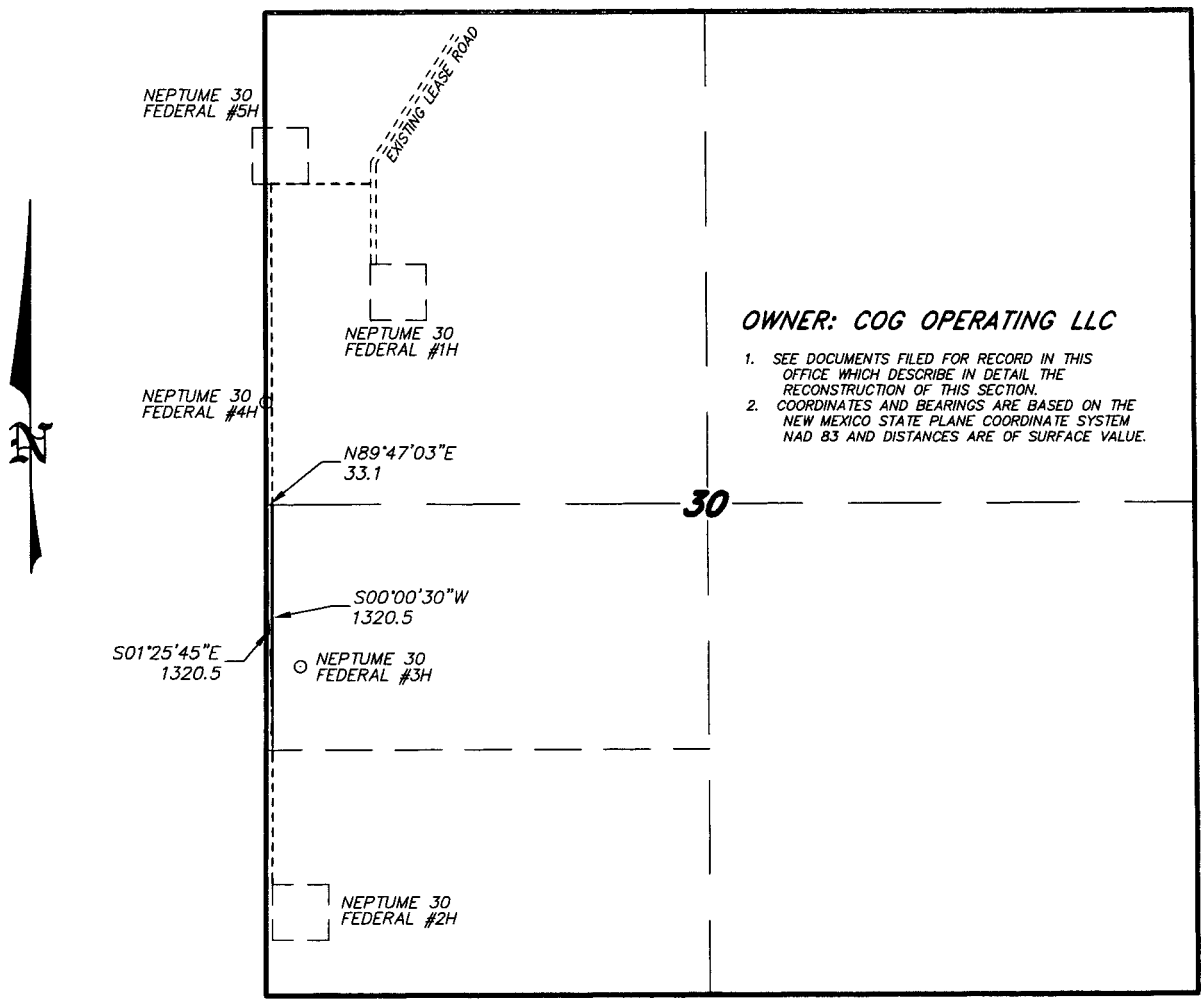
NEARBURG PRODUCING CO.

REF: PROPOSED NEPTUNE WELLS ROAD

A PROPOSED LEASE ROAD LOCATED ON STATE LAND IN SECTION 30, TOWNSHIP 18 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

W.O. Number: 32298	Drawn By: J. GOAD	Date: 5-19-2016	Survey Date: 5-12-2016	Sheet 1 of 3 Sheets

SECTION 30, TOWNSHIP 18 SOUTH, RANGE 29 EAST, N.M.P.M.,
EDDY COUNTY, **NEW MEXICO.**



LEGAL DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE, LOCATED IN SECTION 30, TOWNSHIP 18 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND RIGHT OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY.

BEGINNING AT A POINT ON THE NORTH PROPERTY LINE WHICH LIES N89°47'03"E., 33.1 FEET FROM THE WEST QUARTER CORNER OF SAID SECTION 30; THENCE S00°00'30"W., 1320.5 FEET TO A POINT ON THE SOUTH PROPERTY LINE WHICH LIES S01°25'45"E., 1320.5 FEET FROM THE WEST QUARTER CORNER OF SAID SECTION 30. SAID STRIP OF LAND BEING 1320.5 FEET OR 80.03 RODS IN LENGTH.

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES — No. 7977
No. 5074

GARY L. JONES NEW MEXICO 7977 REGISTERED PROFESSIONAL LAND SURVEYOR

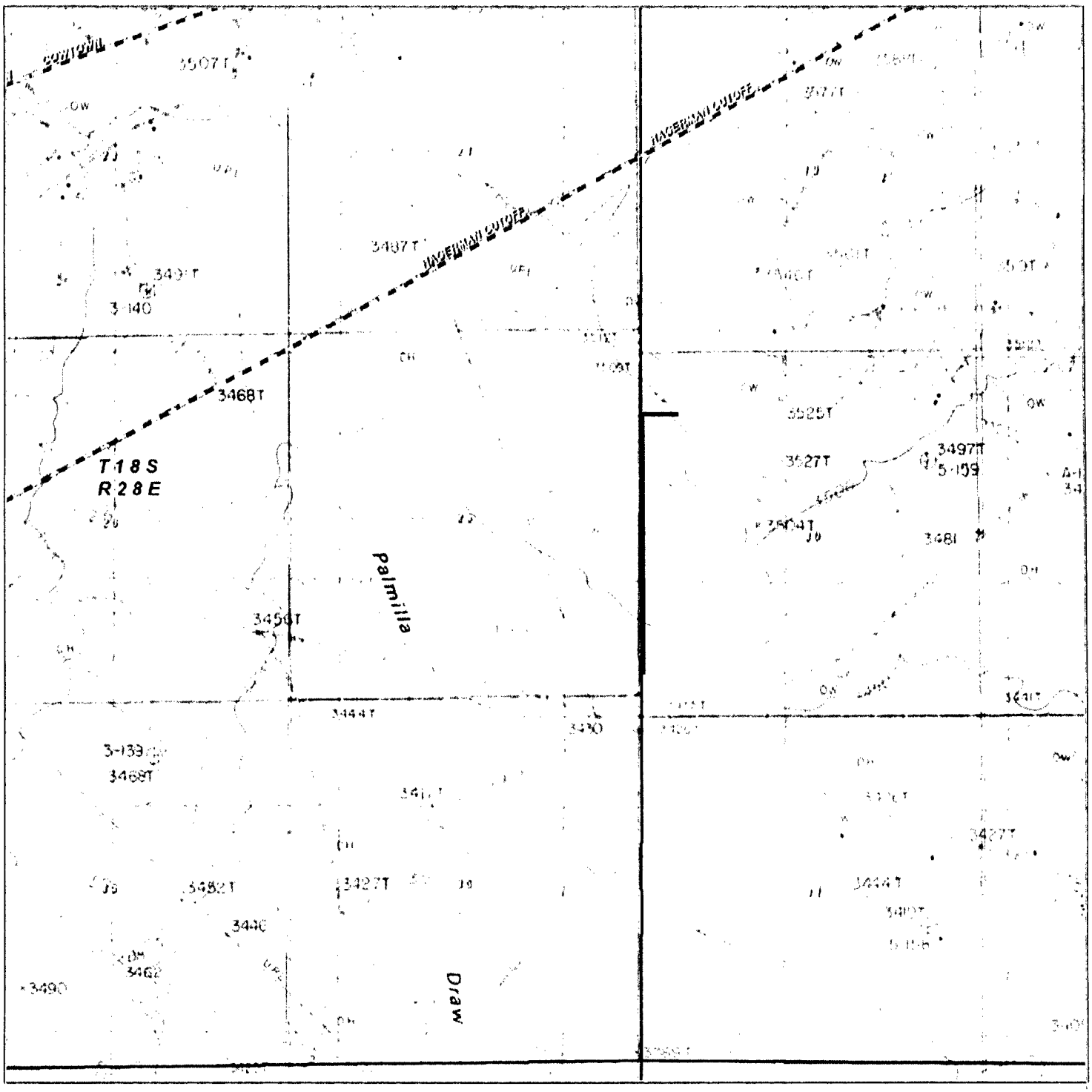
1000 0 1000 2000 FEET

NEARBURG PRODUCING CO.

REF: PROPOSED NEPTUNE WELLS ROAD

A PROPOSED LEASE ROAD LOCATED ON FEE LAND IN SECTION 30, TOWNSHIP 18 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

W.O. Number: 32298	Drawn By: J. GOAD	Date: 5-19-2016	Survey Date: 5-12-2016	Sheet 2 of 3 Sheets

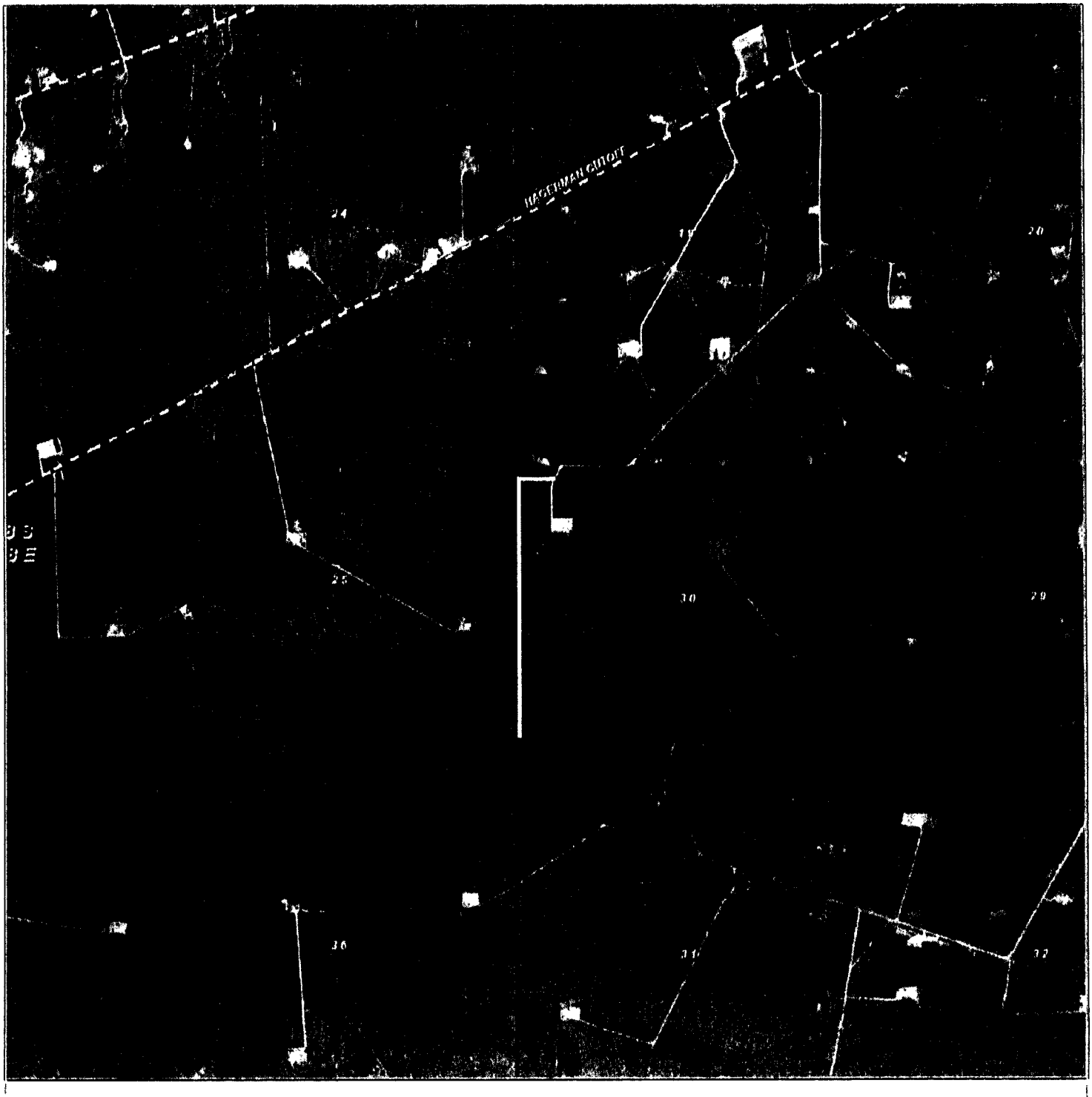


PROPOSED NEPTUNE WELLS ROAD

Section 30, Township 18 South, Range 28 East
N.M.P.M., Lea County, New Mexico

Surveys

NEARBURG PRODUCING CO.



PROPOSED NEPTUNE WELLS ROAD

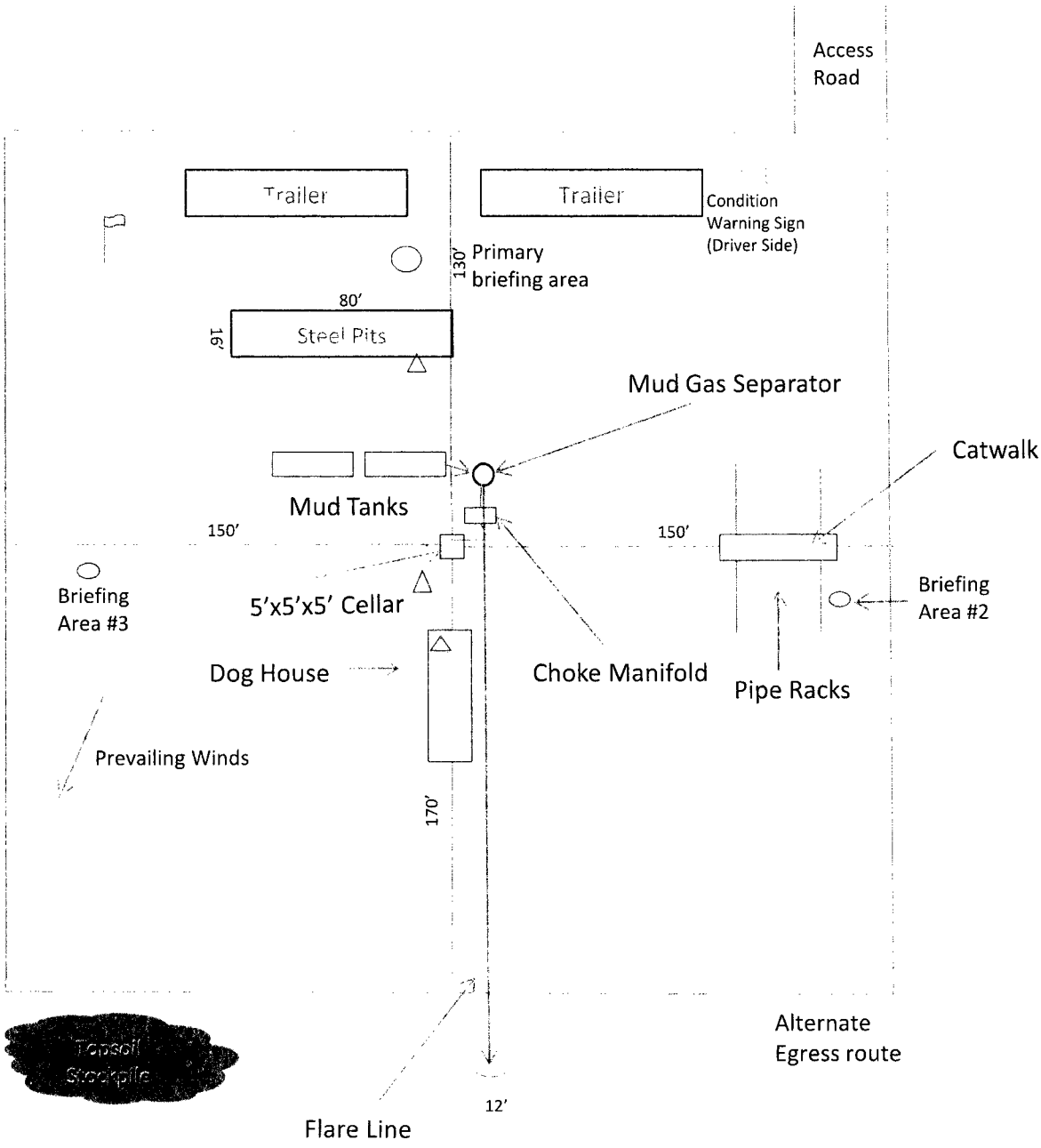
Section 30 Township 18 South, Range 29 East,
N.M.P.M., Lea County, New Mexico

Surveys

0 1000' 2000' 3000' 4000'
2000

NEARBURG PRODUCING CO.

V-door East



N

Wind Direction Indicators (wind sock or streamers)

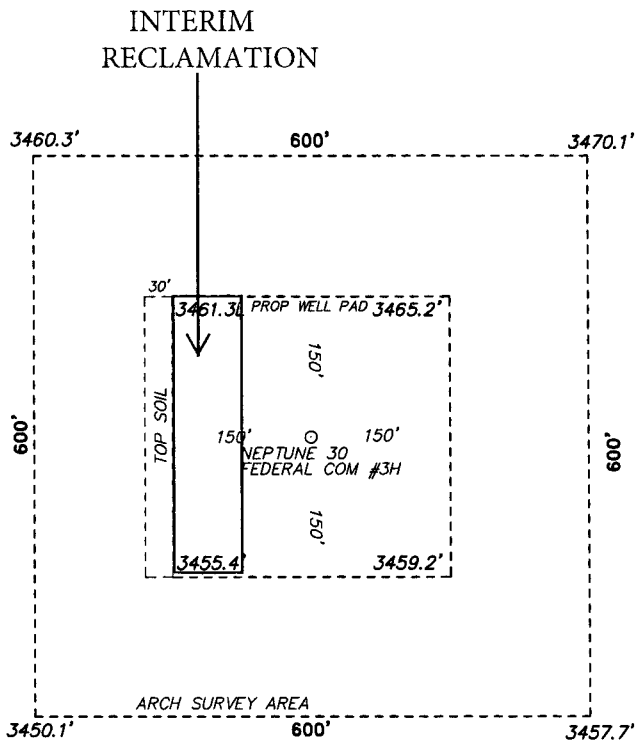
• H2S Monitors (alarms at bell nipple and shale shaker)

Briefing Areas

Well Site Layout Diagram
NEPTUNE 30 FED COM #3H
Nearburg Producing Company
SHL: 1770' FSL & 185' FWL
BHL: 1770' FSL & 330' FEL
Sec 30-T18S-R29E
Eddy County, NM

SECTION 30, TOWNSHIP 18 SOUTH, RANGE 29 EAST, N.M.P.M.,

EDDY COUNTY, **NEW MEXICO.**



NEARBURG PRODUCING CO.
NEPTUNE 30 FEDERAL COM #3H
ELEV. - 3461'

Lat - N 32°42'57.62"
Long - W 104°07'16.42"
NMSPCE- N 624279.9
E 606571.2
(NAD-83)

ARTESIA, NM IS ±18 MILES TO THE NORTHWEST OF LOCATION.

200 0 200 400 FEET

SCALE: 1" = 200'

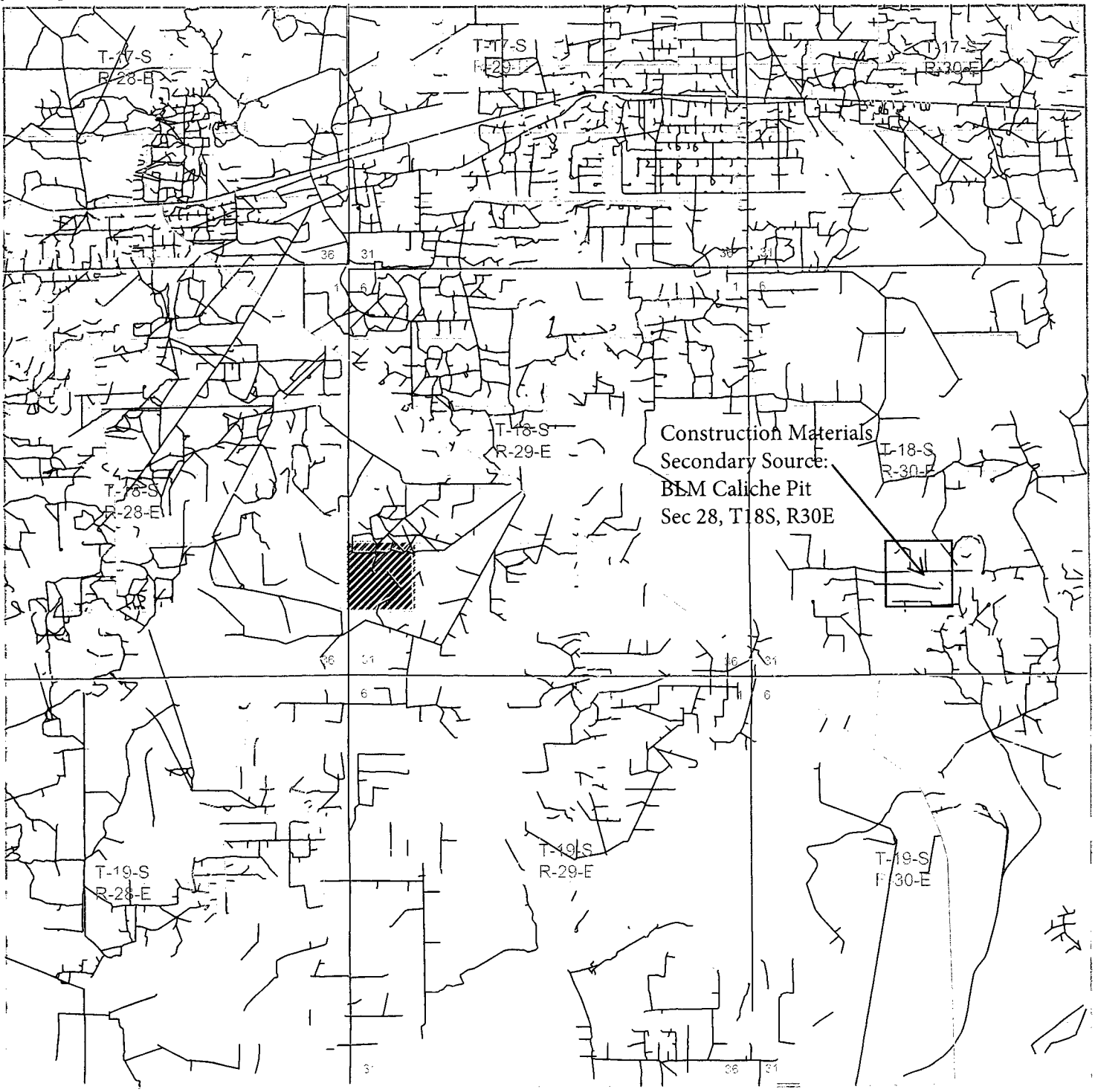
NEARBURG PRODUCING CO.

REF: NEPTUNE 30 FEDERAL COM #3H / WELL PAD TOPO

THE NEPTUNE 30 FEDERAL COM #3H LOCATED 1770' FROM THE SOUTH LINE AND 185' FROM THE WEST LINE OF SECTION 30, TOWNSHIP 18 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

Surveys

W.O. Number: 32409	Drawn By: J GOAD	Date: 8-24-2016	Survey Date: 8-16-2016	Sheet 1 of 1 Sheets



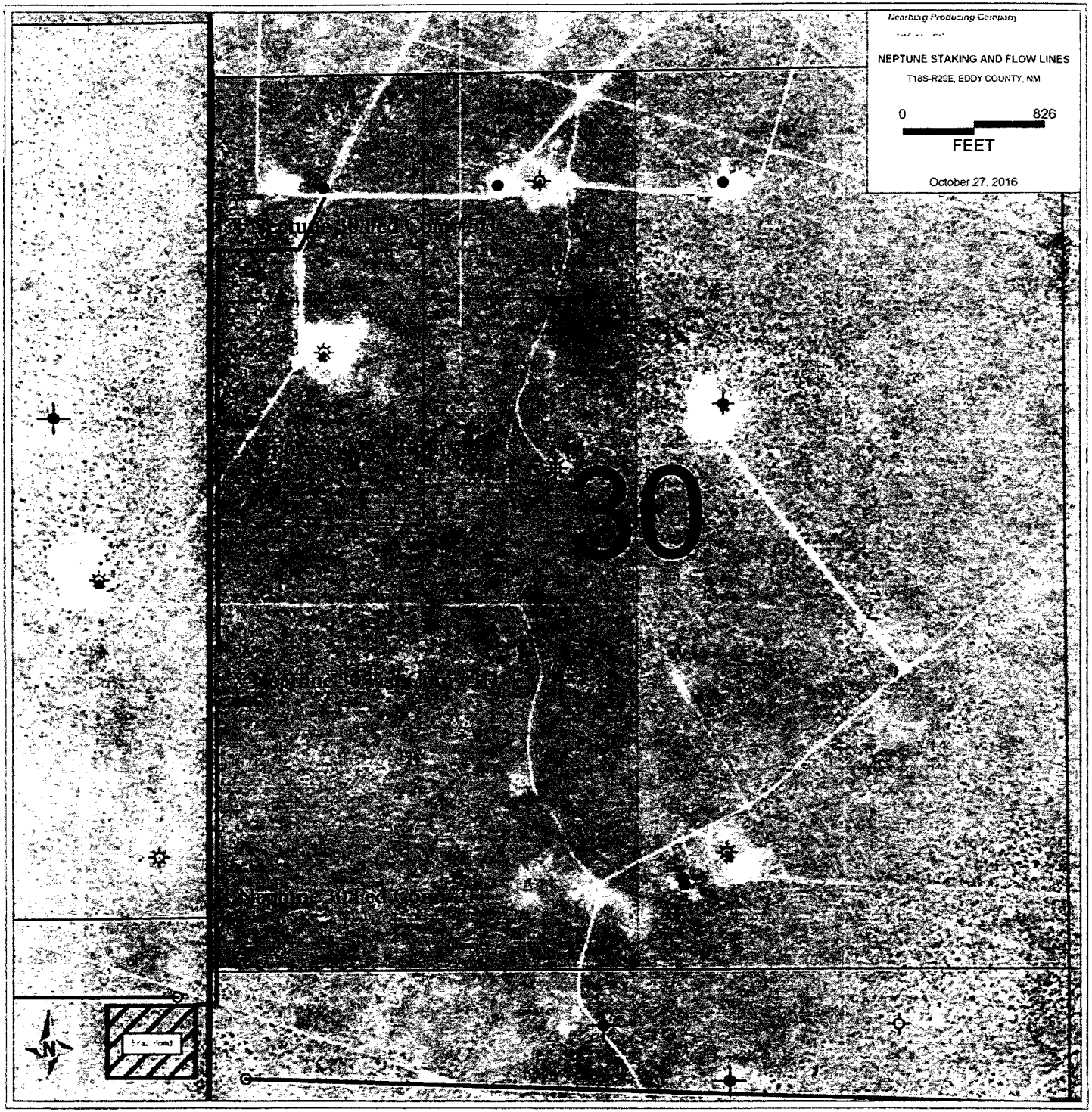
NEPTUNE 30 FEDERAL COM #3H

Located [illegible]
Section 30, Township 18 South, Range 29 East,
N.M.P.M., Eddy County, New Mexico.

Surveys

NEARBURG PRODUCING CO.

WATER SOURCE MAP - NEPTUNE 30 FED COM #2H, #3H, #4H, #5H



AFMSS

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

PWD Data Report
04/25/2017

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

04/25/2017

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB000153

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:

PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Nearburg Producing Company
LEASE NO.:	NMNM56426
WELL NAME & NO.:	3H-Neptune 30 Federal Com
SURFACE HOLE FOOTAGE:	1770'/S & 185'/W
BOTTOM HOLE FOOTAGE	1770'/S & 330'/E
LOCATION:	Section 30, T.18 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Grayburg** 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.

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) for Water Basin:
After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possibility of water flows in the Salado, Artesia Group, and Queen.
Possibility of lost circulation in the Artesia Group, Rustler, Grayburg, San Andres, and Delaware.

A. The **13-3/8** inch surface casing shall be set at approximately **320** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**
   1. 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.

   2. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**

   3. 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.

   4. If cement falls back, remedial cementing will be done prior to drilling out that string.

B. 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.

C. The minimum required fill of cement behind the **5 1/2** inch production casing is:

   ☒ Cement should tie-back at least **200** feet into previous casing string. Operator shall provide method of verification.

D. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API 53.

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line

fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi. **In the case where the only BOP installed is an annular preventer, it shall be tested to a minimum of 2000 psi (which may require upgrading to 3M or 5M annular).**

4. 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.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

    c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall

have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

d. The results of the test shall be reported to the appropriate BLM office.

e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

CLN 04192017

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Nearburg Producing Company
LEASE NO.:	NMNM56426
WELL NAME & NO.:	3H-Neptune 30 Federal Com
SURFACE HOLE FOOTAGE:	1770'/S & 185'/W
BOTTOM HOLE FOOTAGE	1770'/S & 330'/E
LOCATION:	Section 30, T.18 S., R.29 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.

☐ **General Provisions**
☐ **Permit Expiration**
☐ **Archaeology, Paleontology, and Historical Sites**
☐ **Noxious Weeds**
☐ **Special Requirements**
☐ **Construction**
- Notification
- Topsoil
- Closed Loop System
- Federal Mineral Material Pits
- Well Pads
- Roads

☐ **Road Section Diagram**
☐ **Production (Post Drilling)**
- Well Structures & Facilities

☐ **Interim Reclamation**
☐ **Final Abandonment & Reclamation**

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)

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.

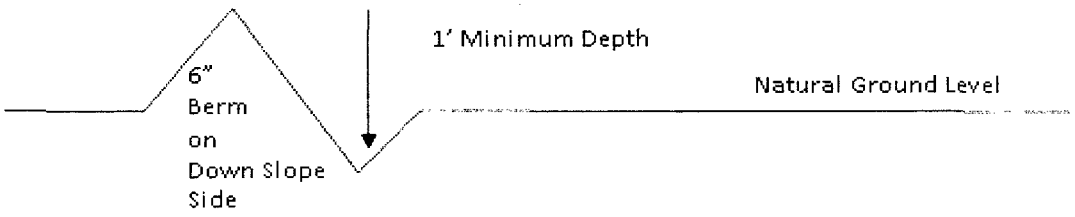
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

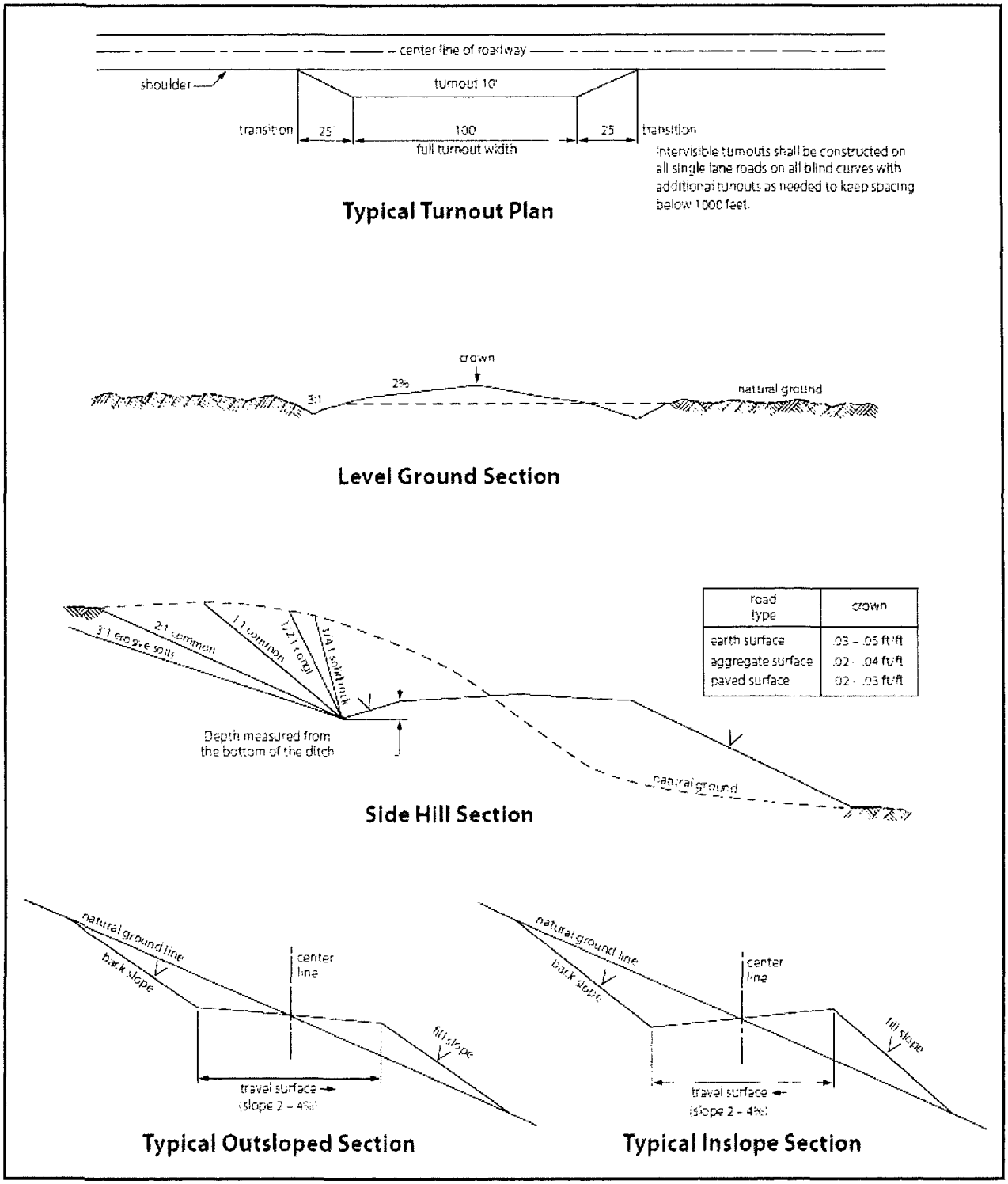


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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).

Seed Mixture 2, for Sandy Sites

The 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 will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will 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). The 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. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will 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
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed