orm 3160-3 March 2012) UNITED STATE	S.	AAY <b>2 6</b> 2015 RECENTERES	a	OMB No.	ATS-13- PPROVED 1004-0137 ober 31, 2014	
GH CAVEKARST DEPARTMENT OF THE BUREAU OF LAND MA	INTERIOR		-	5. Lease Serial No. NM-44532		
APPLICATION FOR PERMIT TO				6. If Indian, Allotee o N/A	r Tribe Name	
la. Type of work: 🖌 DRILL 🗌 REEN	TER			7 If Unit or CA Agreer N/A	nent, Name and No.	
lb. Type of Well: 🔽 Oil Well 🔲 Gas Well 💭 Other	` ✓ Si	ngle Zone 🔲 Multip	ole Zone	8. Lease Name and We Sosa Federal #3H	ell No.	
2. Name of Operator YATES PETROLEUM CORPORATIO	N 、			9. API Well No.	15.431	
3a. Address 105 South Fourth Street	3b. Phone No 575-748-4	. (include area code) 372		10. Field and Pool, or Ex		
Artesia, New Mexico 88210 4. Location of Well (Report location clearly and in accordance with a		· · · ·		Brushy Draw Delawa 11. Sec., T. R. M. or Blk	· · · · · · · · · · · · · · · · · · ·	
At surface 330' FNL & 330' FWL, Unit Ltr D Sec. 15-T2	26S-R29E			Section 15-T26S-R2	9E	
At proposed prod. zone 330' FNL & 550' FEL, Unit Ltr A, S 4. Distance in miles and direction from nearest town or post office* Well is approximately 35 miles southeast of Carlsbad, NM	· · · · ·	-R29E, BHL		12. County or Parish Eddy County	13. State NM	
<ul> <li>5. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)</li> </ul>	from proposed* 330' o nearest or lease line, ft. 16. No. of acres in lease NM-44532 880 acres NM-24532 880 acres N2N2, Sec. 1					
8. Distance from proposed location* Approx. 1100' to nearest well, drilling, completed, applied for, on this lease, ft.		d Depth TVD-5400' & TVD 5150'				
<ol> <li>Elevations (Show whether DF, KDB, RT, GL, etc.)</li> <li>2932' GL</li> </ol>		mate date work will sta	rt*	23. Estimated duration 60 days		
	24. Atta					
he following, completed in accordance with the requirements of Onsh	nore OII and Gas			is form: ns unless covered by an ex	visiting hand on file (	
<ol> <li>Well plat certified by a registered surveyor.</li> <li>A Drilling Plan.</li> <li>A Surface Use Plan (if the location is on National Forest System SUPO must be filed with the appropriate Forest Service Office).</li> </ol>	m Lands, the	Item 20 above). 5. Operator certific	cation	ormation and/or plans as n	-	
25. Signature ( Grwan	Name Cy C	(Printed/Typed)		D	ate 8/8/13	
Land Regulatory Agent					K (	
pproved by (Signali Steve Caffey	Name	(Printed/Typed)		I.	Dat <b>MAY 1 9 20</b>	
FIELD MANAGER	Office					
pplication approval does not warrant or certify that the applicant ho onduct operations thereon. Conditions of approval, if any, are attached.	olds legal or equi	table title to those righ		ject lease which would ent	••	
itle 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a tates any false, fictitious or fraudulent statements or representations a	crime for any p as to any matter v	erson knowingly and v vithin its jurisdiction.	villfully to n	nake to any department or	agency of the United	
(Continued on page 2)	<u></u>			*(Instru	ctions on page 2)	

SEE ATTACHED FOR CONDITIONS OF APPROVAL

.

Approval Subject to General Requirements & Special Stipulations Attached

#### CERTIFICATION YATES PETROLEUM CORPORATION SOSA FEDERAL #3H

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; and an someone under employment of Yates Petroleum Corporation has 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.

Executed this <u>5th</u>	day of	August	2013
Signature <u>A</u> Awa			
Name Cy Cowan			
Position Title Land Regulatory Age	nt		
Address 105 South Fourth Street, Arte	sia, New Mexico 8	38210	
Telephone(575) 748-4372			
Field Representative (if not above signatory)	Tim Busse	ll, Drilling Sup	ervisor
Address (if different from above) <u>Same a</u>	is above.		
Telephone (if different from above) <u>(575) 7</u>	48-4221		
E-mail (optional) <u>cy@yatespetroleum.co</u>	om		

District I 1625 N. French Dr., Hobbs, NM 88240 Phone: (575) 393-6161 Fax: (575) 393-0720 <u>District II</u> 811 S. First St., Artesia, NM 88210 Phone: (575) 748-1283 Fax: (575) 748-9720 <u>District III</u> 1000 Rio Brazos Road, Aztec, NM 87410 Phone: (505) 334-6178 Fax: (505) 334-6170 <u>District IV</u> 1220 S. St. Francis Dr., Santa Fe, NM 87505 Phone: (505) 476-3460 Fax: (505) 476-3462.

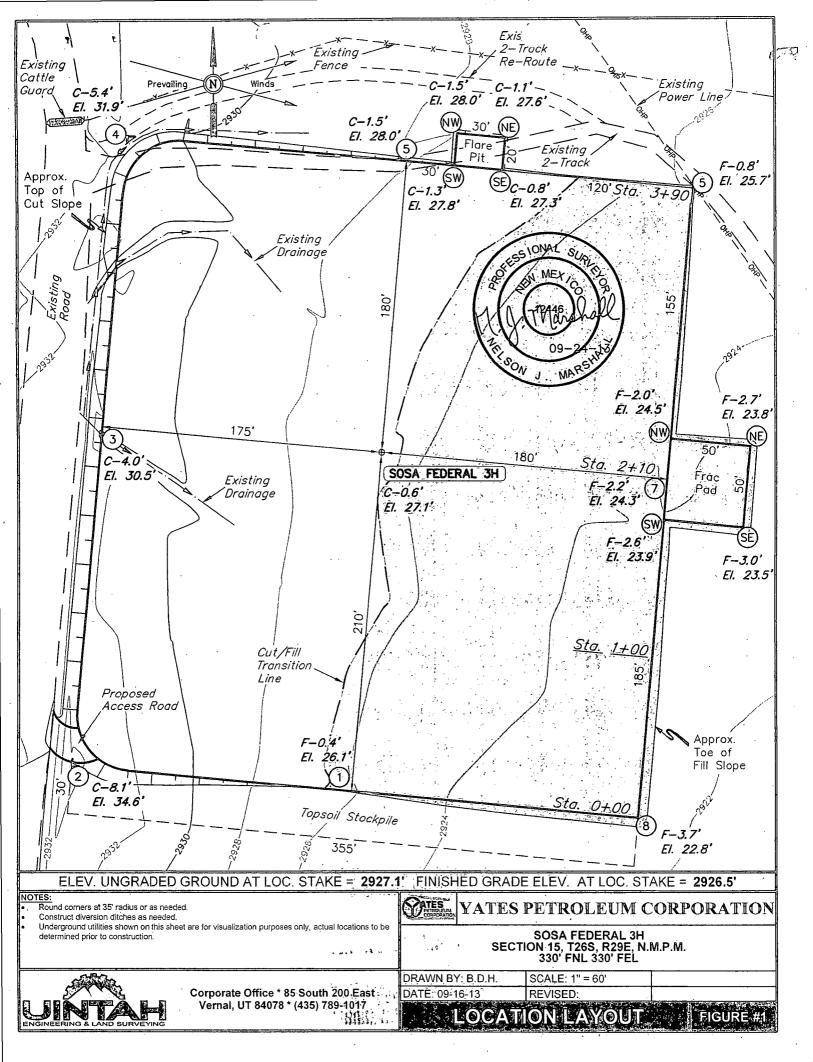
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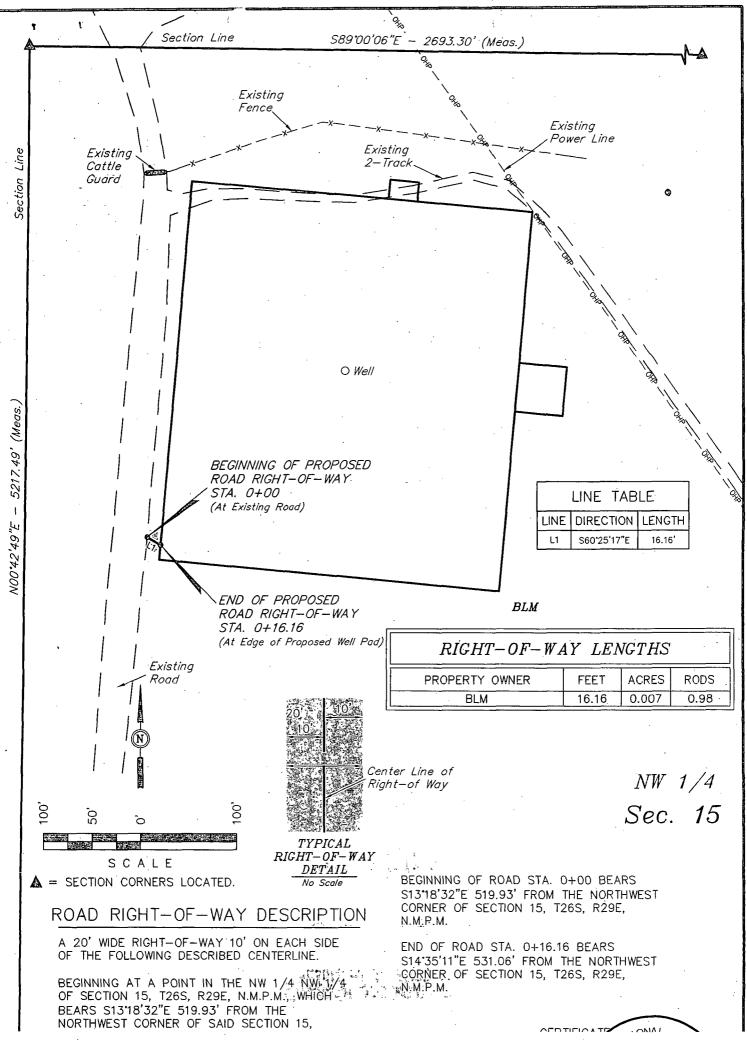
#### State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, NM 87505

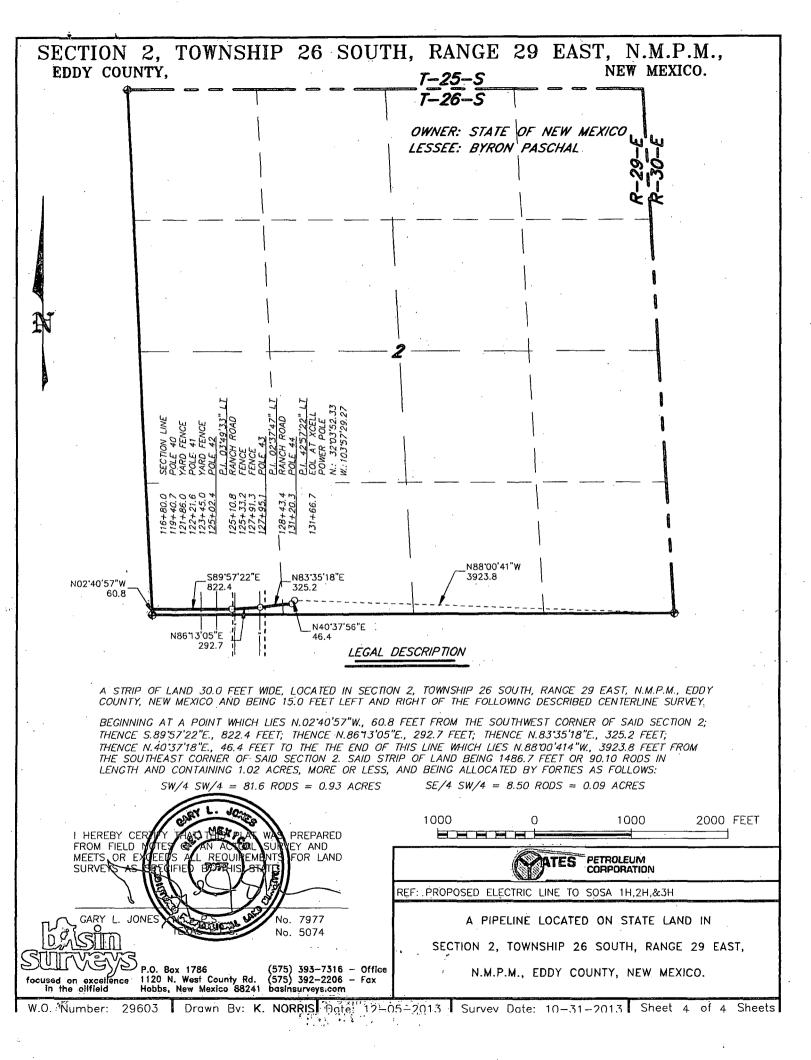
Form C-102 Revised August 1, 2011 Submit one copy to appropriate District Office

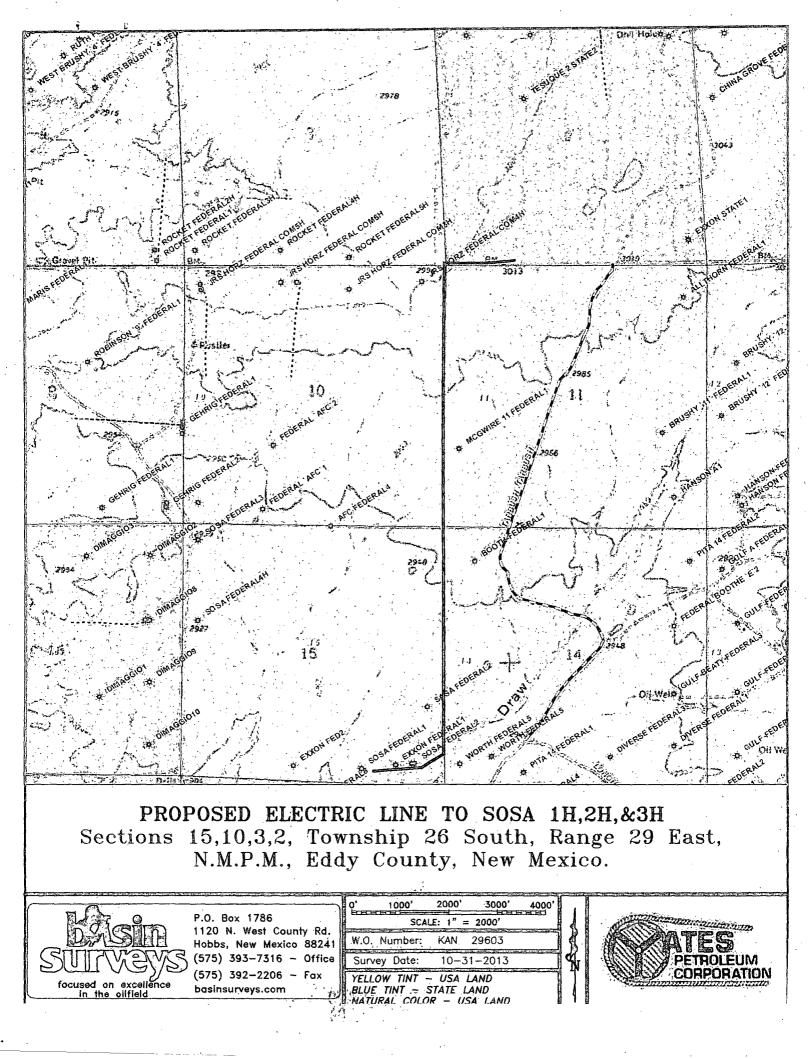
AMENDED REPORT

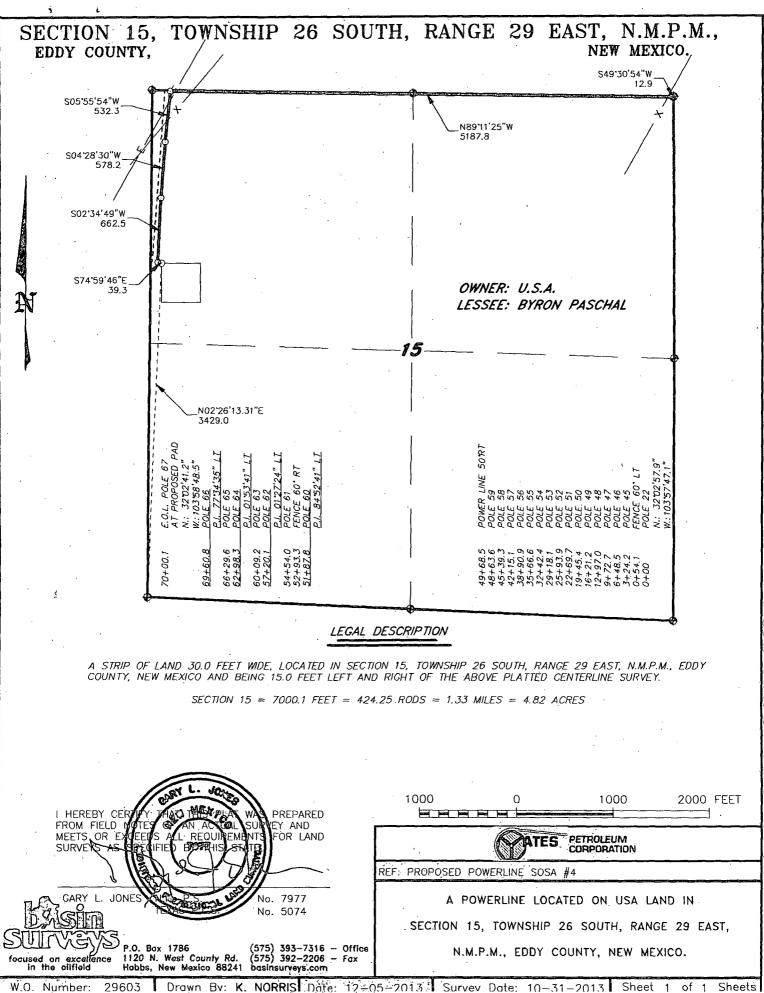
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'0GRIDI 025575	No.								<sup>9</sup> Elevation 2927'		
010010		9 - Martin - Martin Handar, 40		1711	<sup>19</sup> Surface ]		an a				
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	E	ast/West line	County	
D	15	26 S	29 E		330	NORTH	330		WEST	EDDY	
UL or lot no.	Section	Township	11 B Range	Ottom H	Ole Location li	Different From North/South line	Surface Feet from the	E	ast/West line	County	
A <sup>2</sup> Dedicated Act	15	26 S	29 E	ation Code	330	NORTH	330		EAST	EDDY	
xx	160										
allowable w	ill be assign	ed to this con	mpletion unti	l all intere	sts have been cons	olidated or a non-sta	indard unit has bee	n app	roved by the div	vision.	
		S89°00'				S88*58'10"E	<u></u>			PERATOR	
A		<u>2693.30'</u>	(Meas.)		2	2694.35' (Meas.,		<b>`</b>	<b>CERTIFICATION</b> I hereby certify that the information contained		
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			and a second second second	Children and an order of the	MAR HORIDANCINGAR CR.	and the second	<u> </u>		Signature	Date	
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	· S	CALE							<sup>18</sup> SU	RVEYOR	
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		ŀ						(Meas.	Date of Survey		
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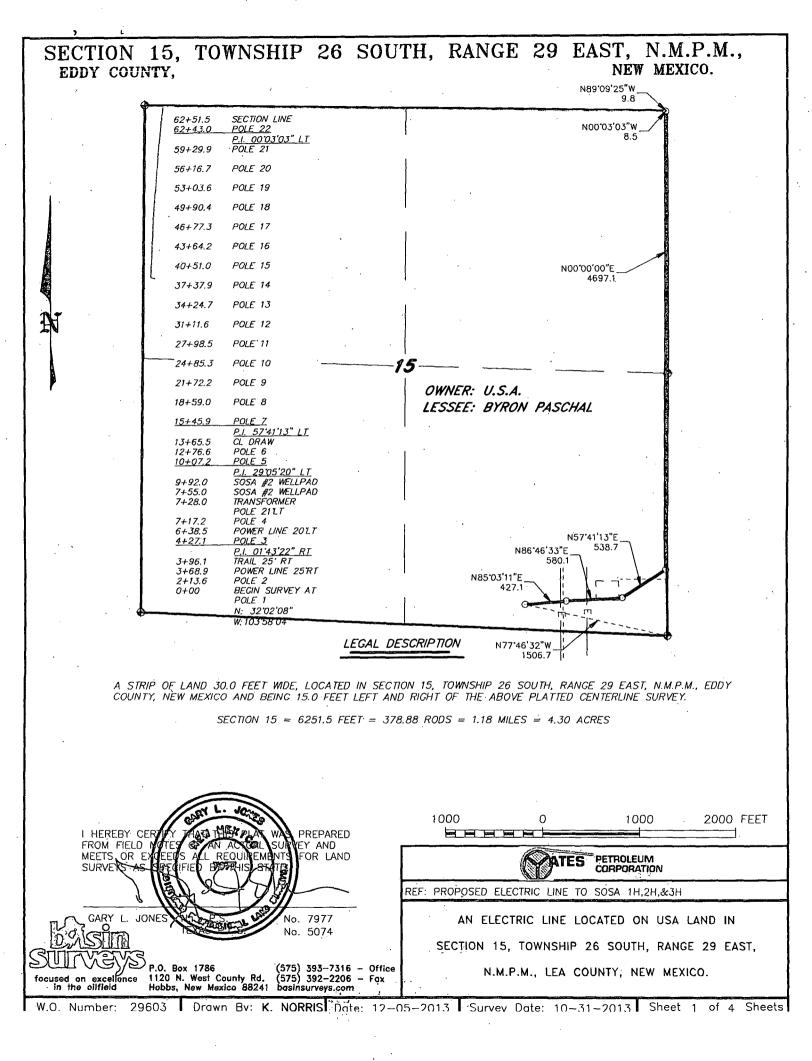


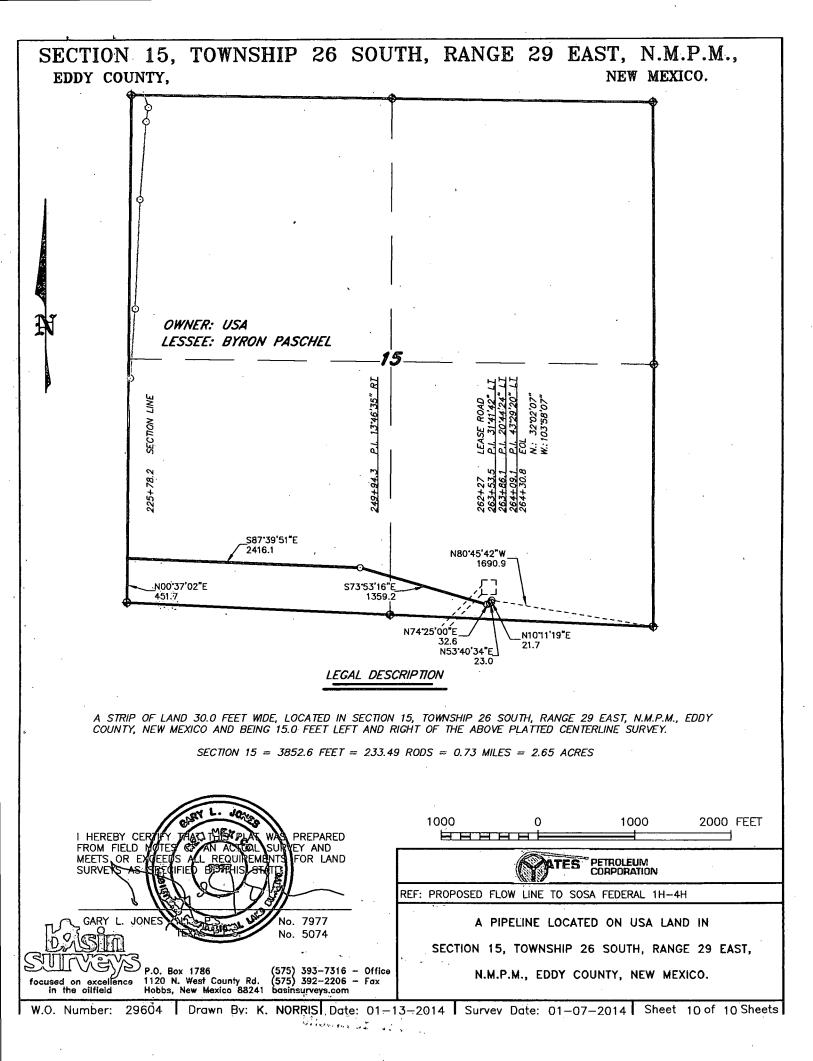


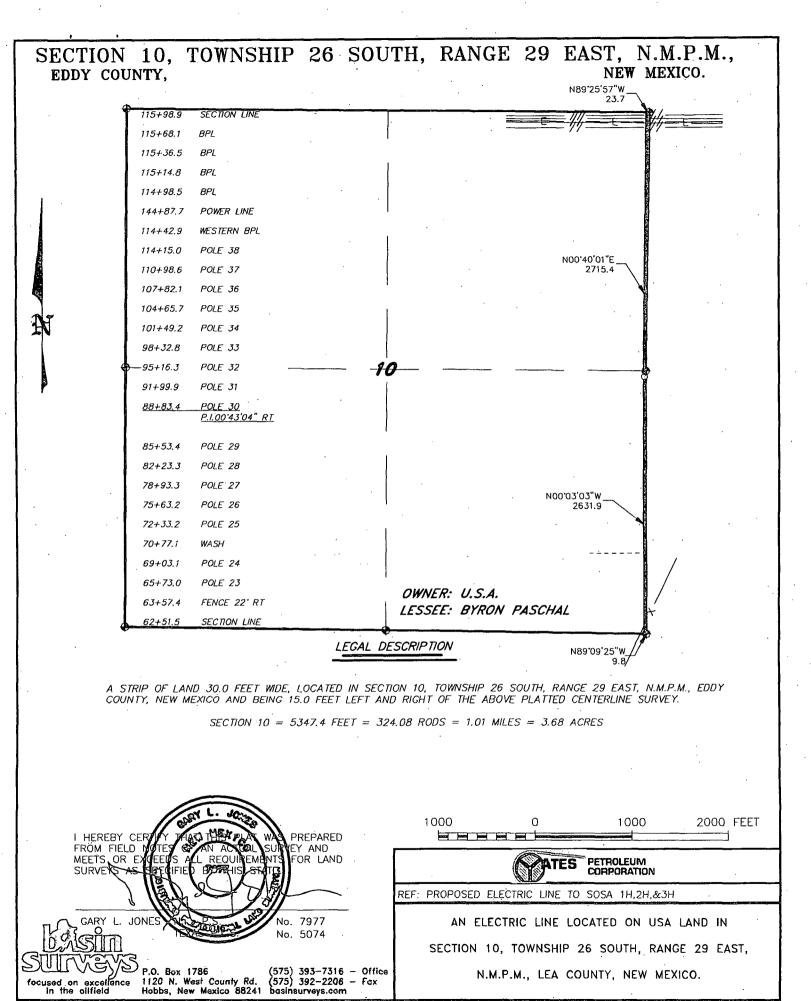


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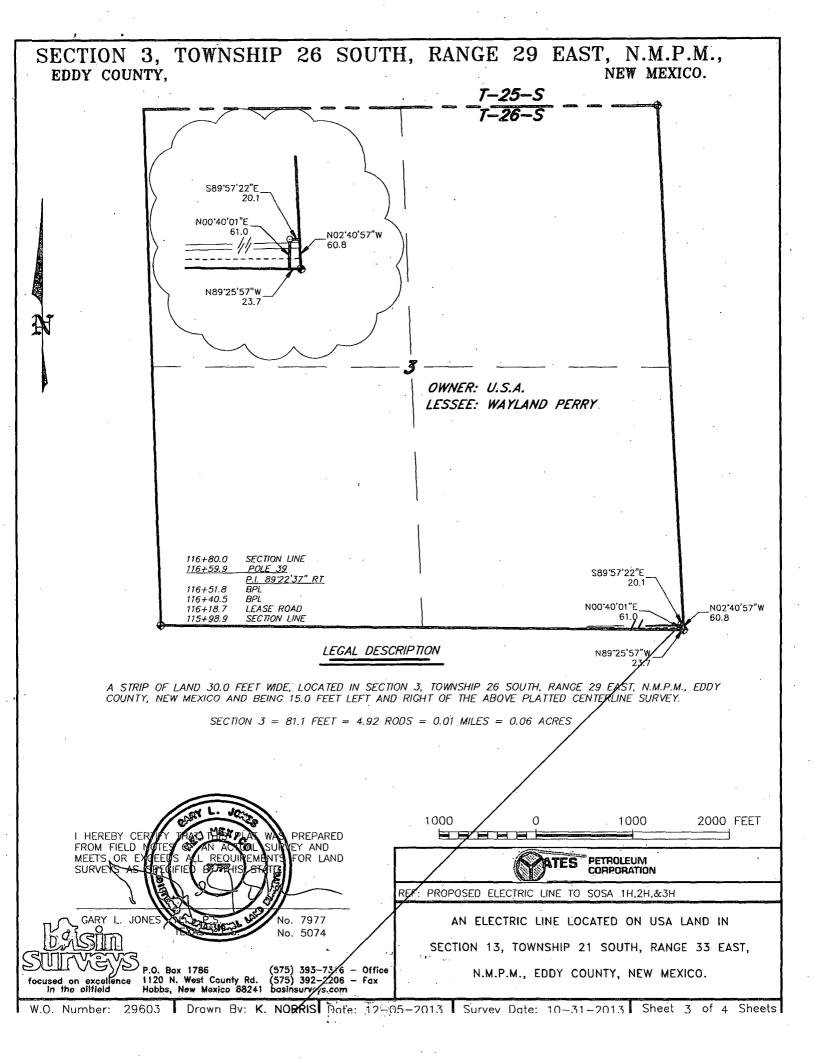
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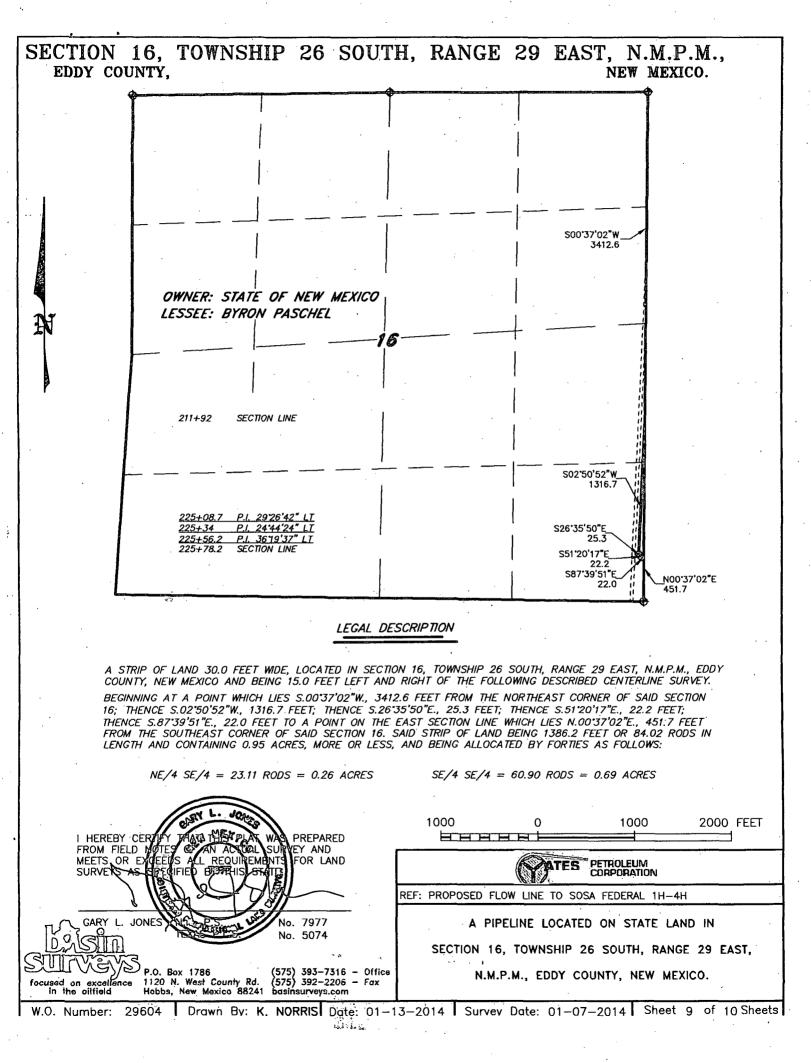


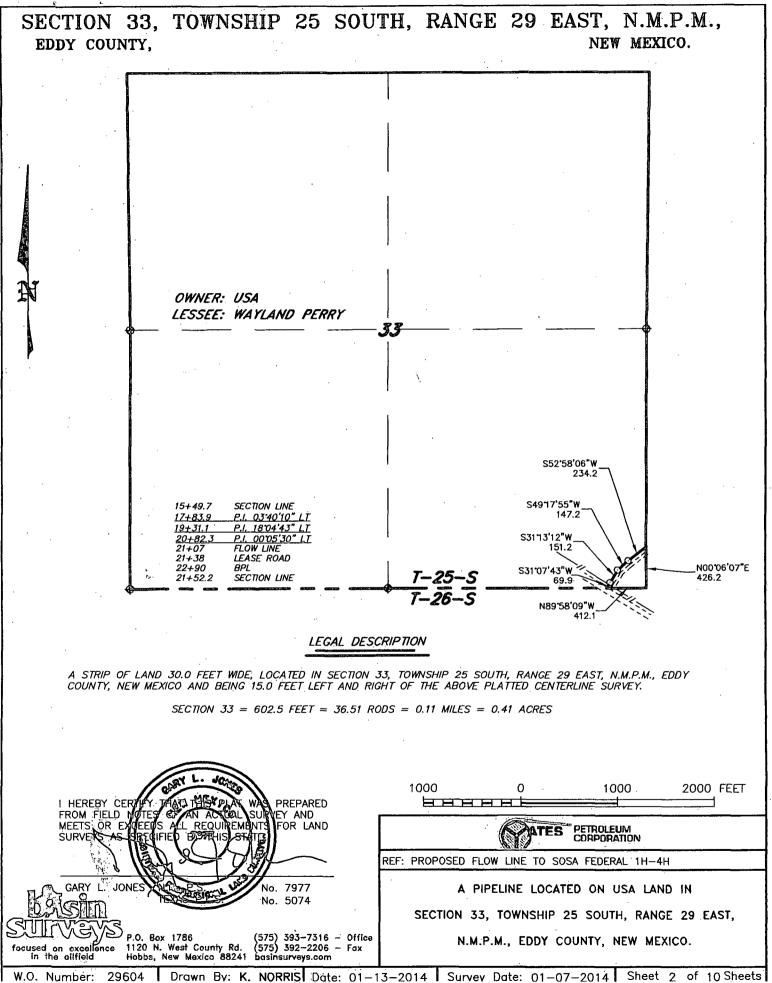


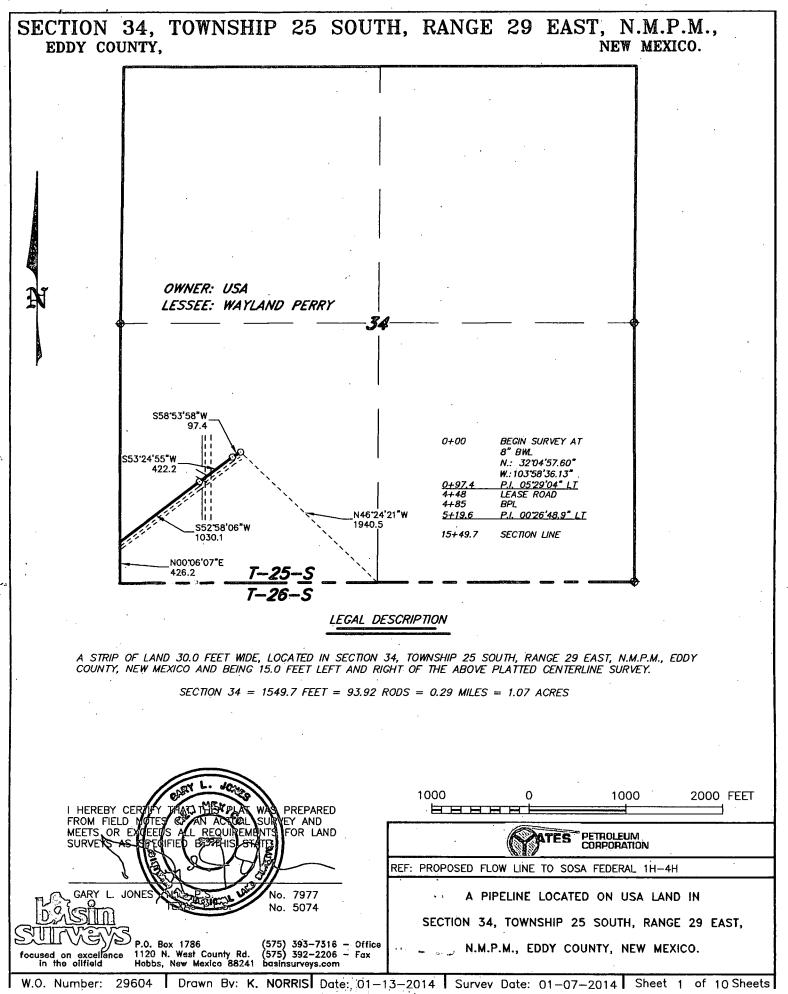


W.O. Number: 29603 Drawn Bv: K. NORRIS Date: 12-05-2013 Survey Date: 10-31-2013 Sheet 2 of 4 Sheets



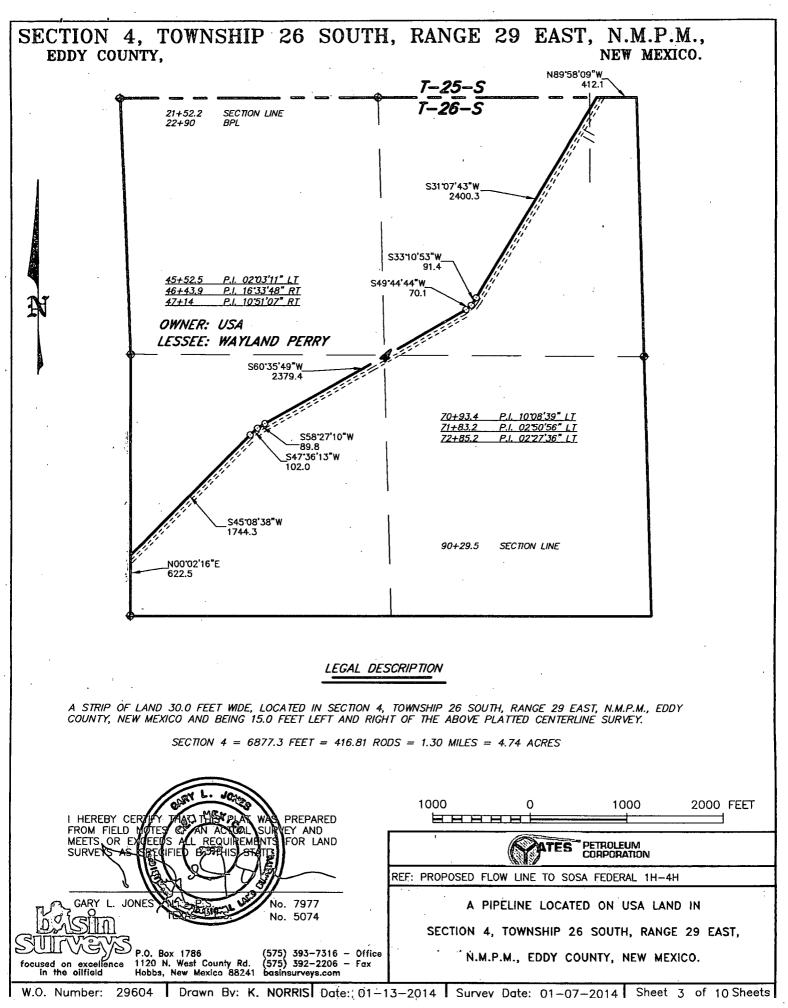




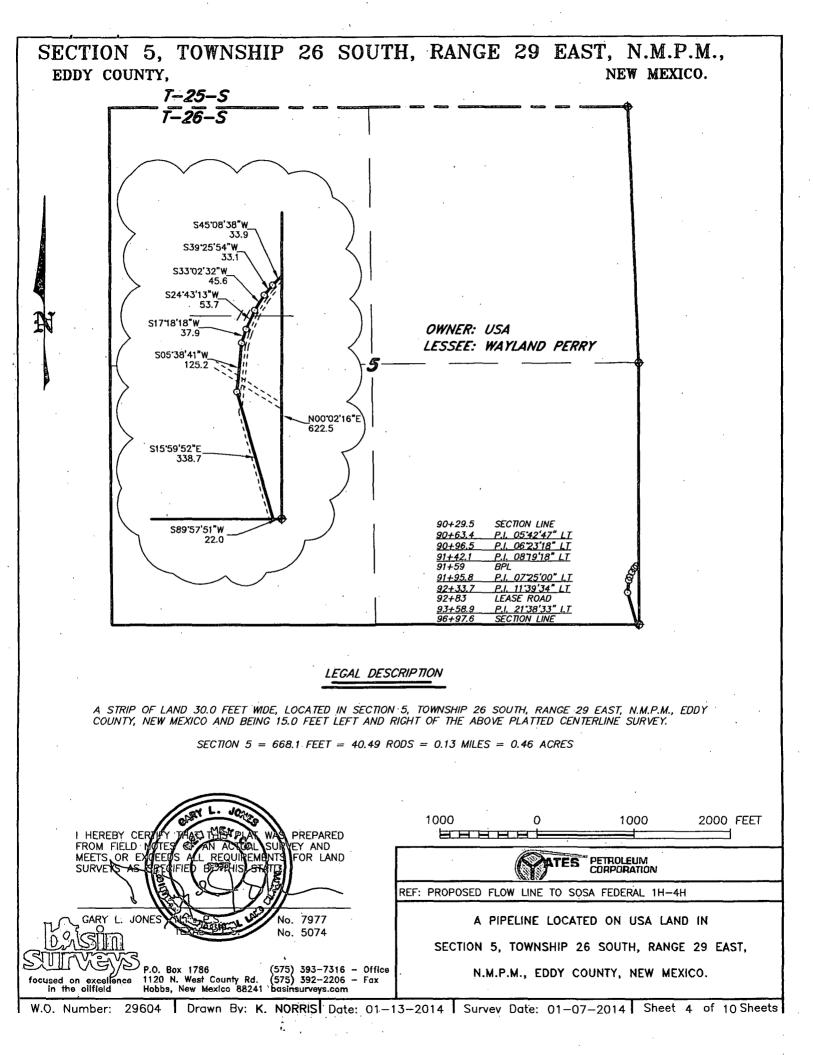


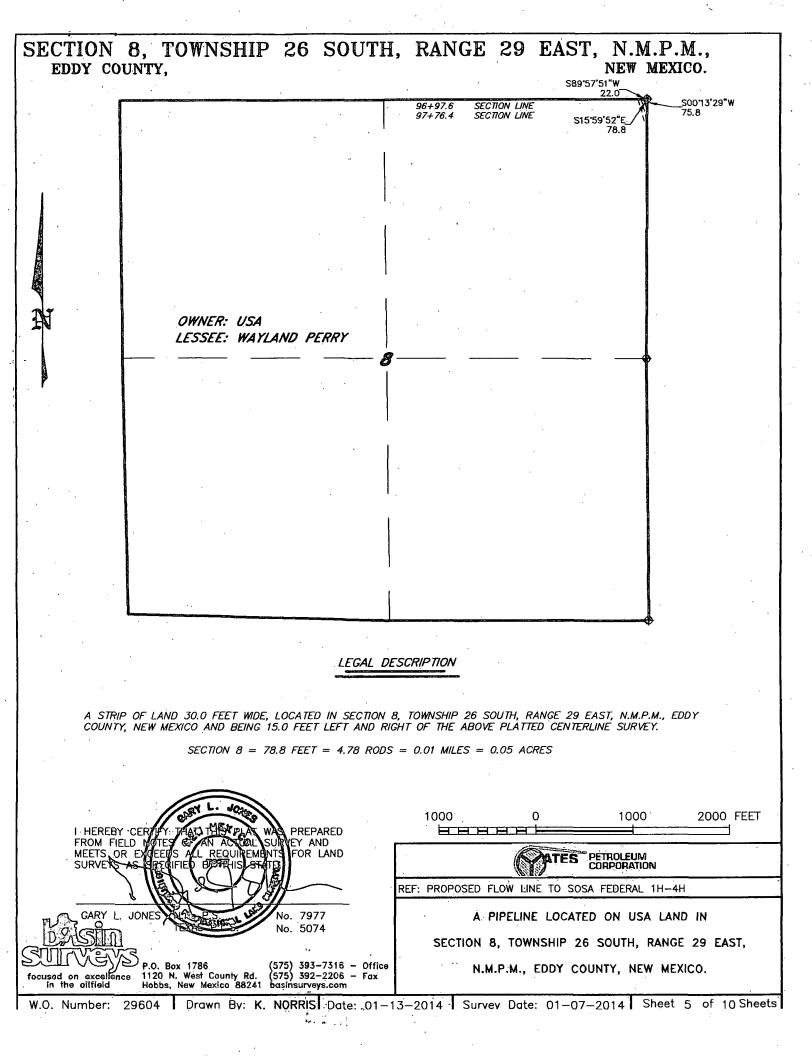
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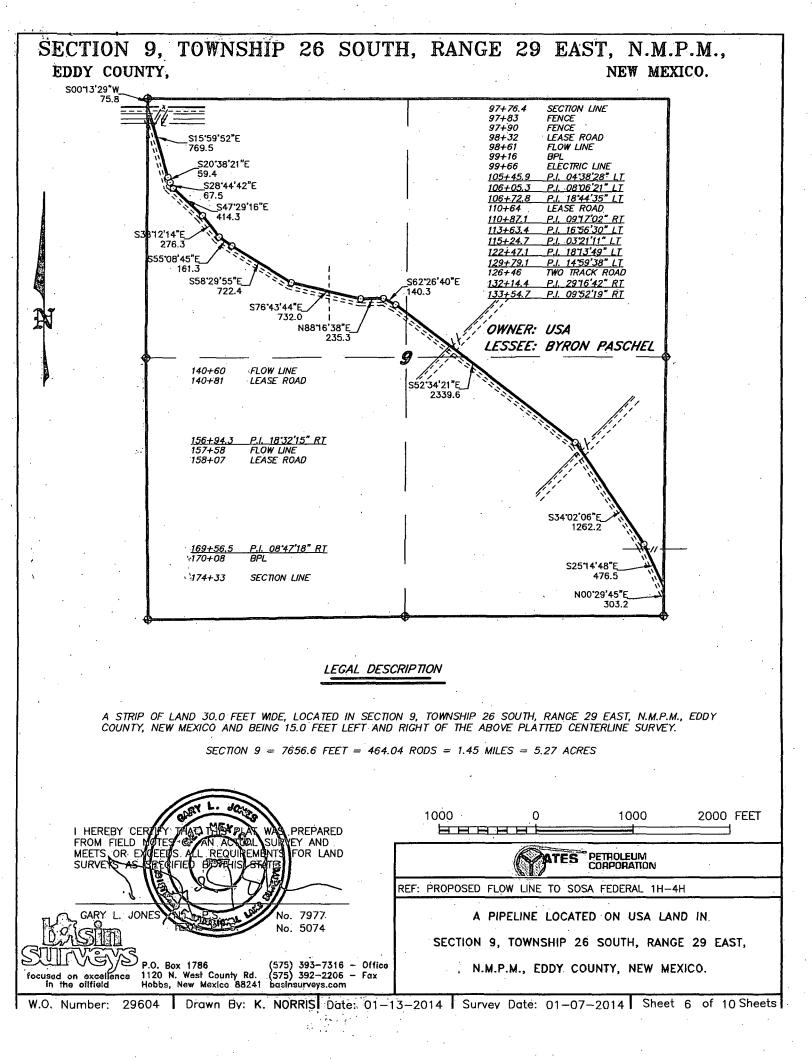
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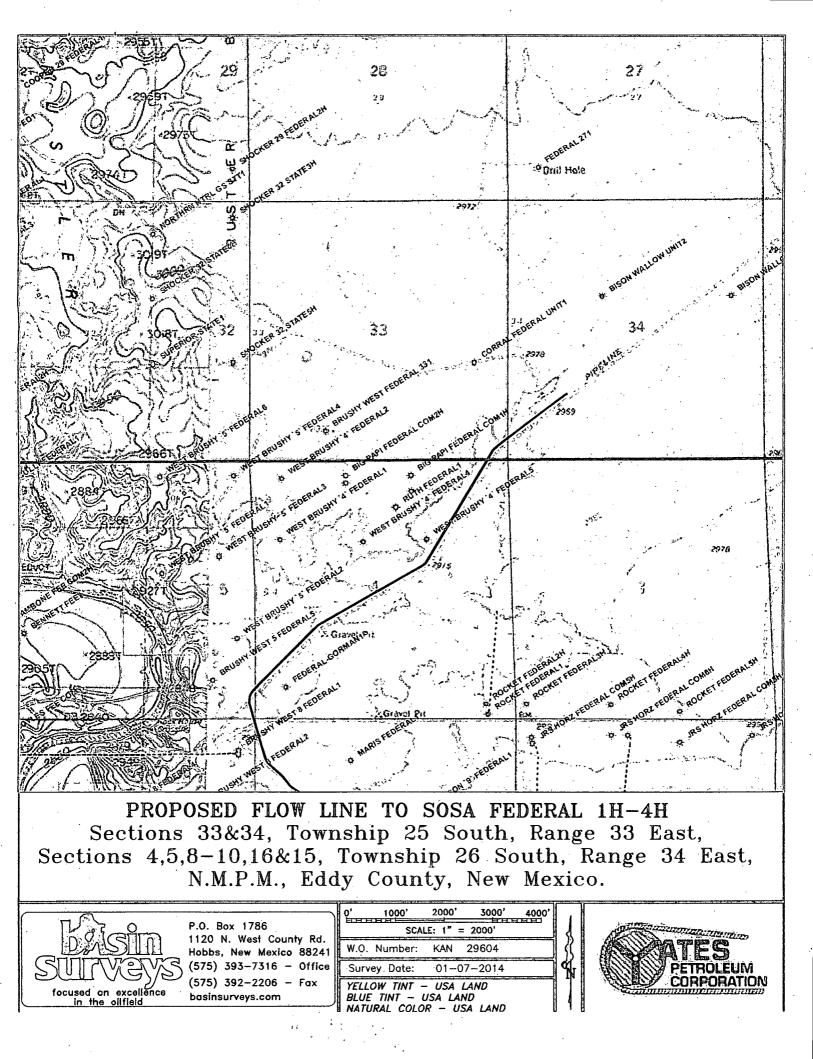


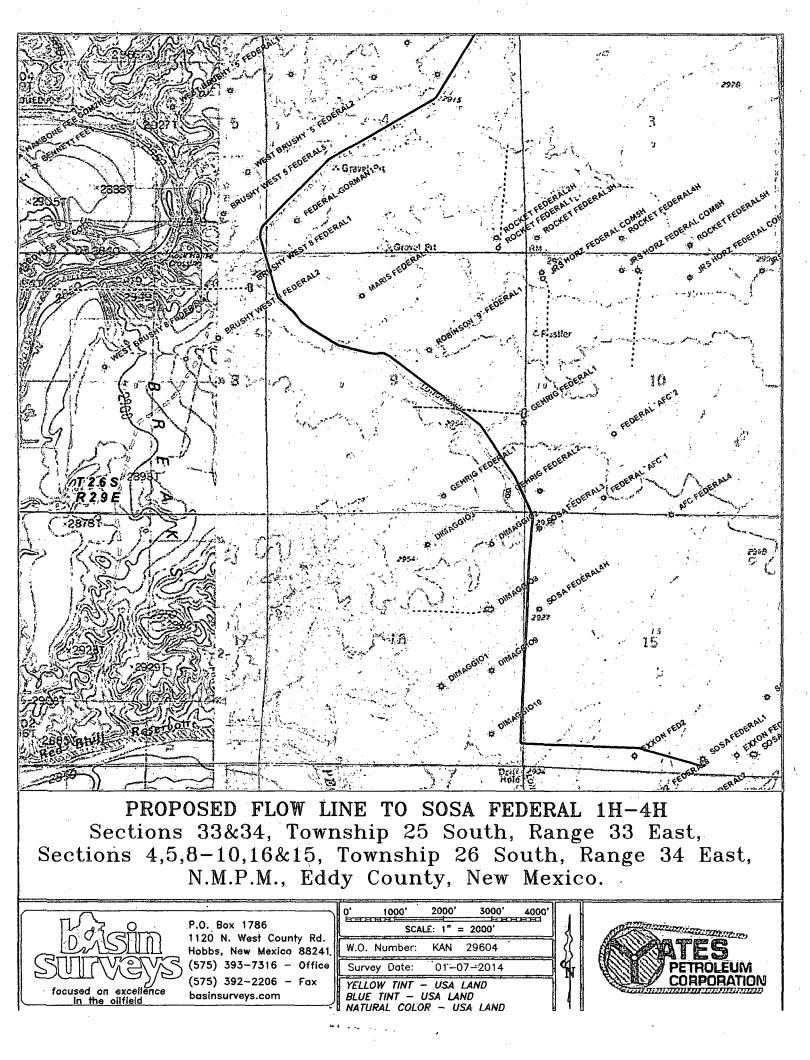
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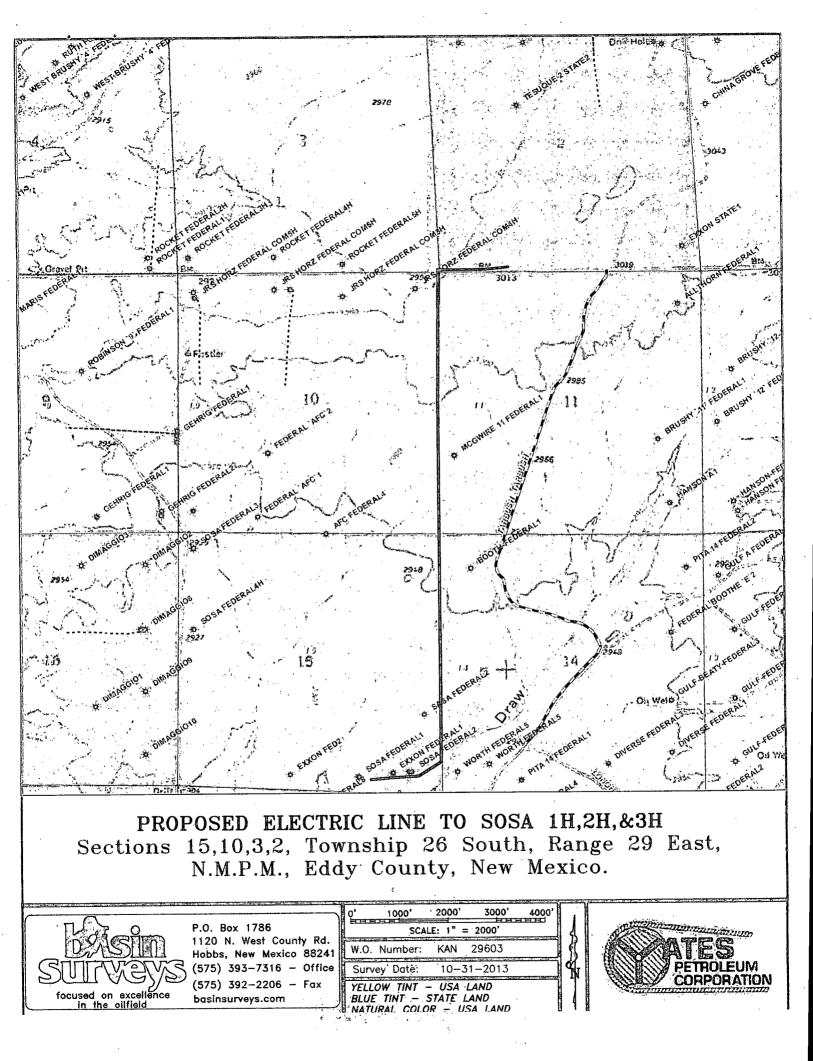


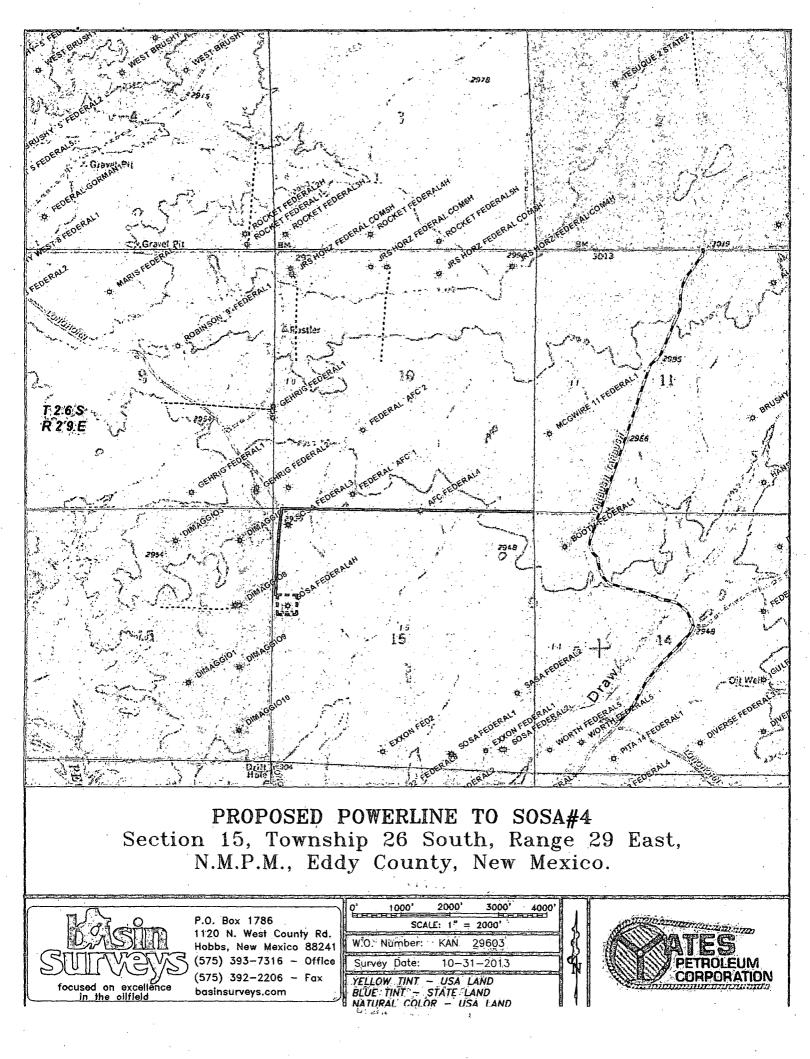


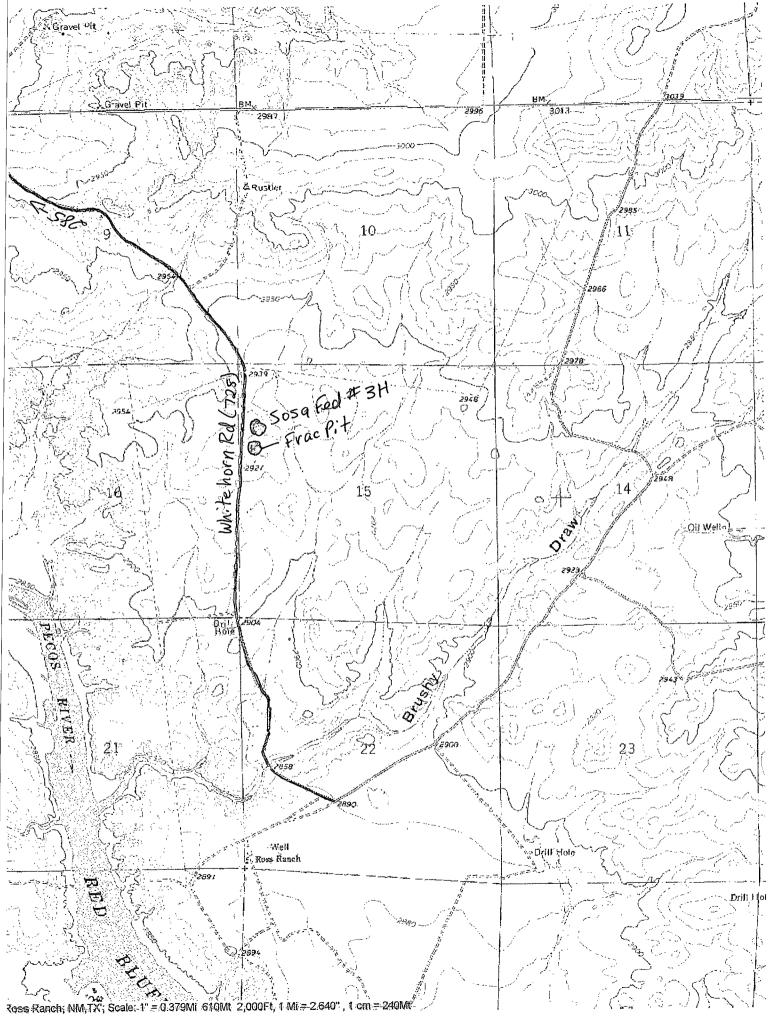


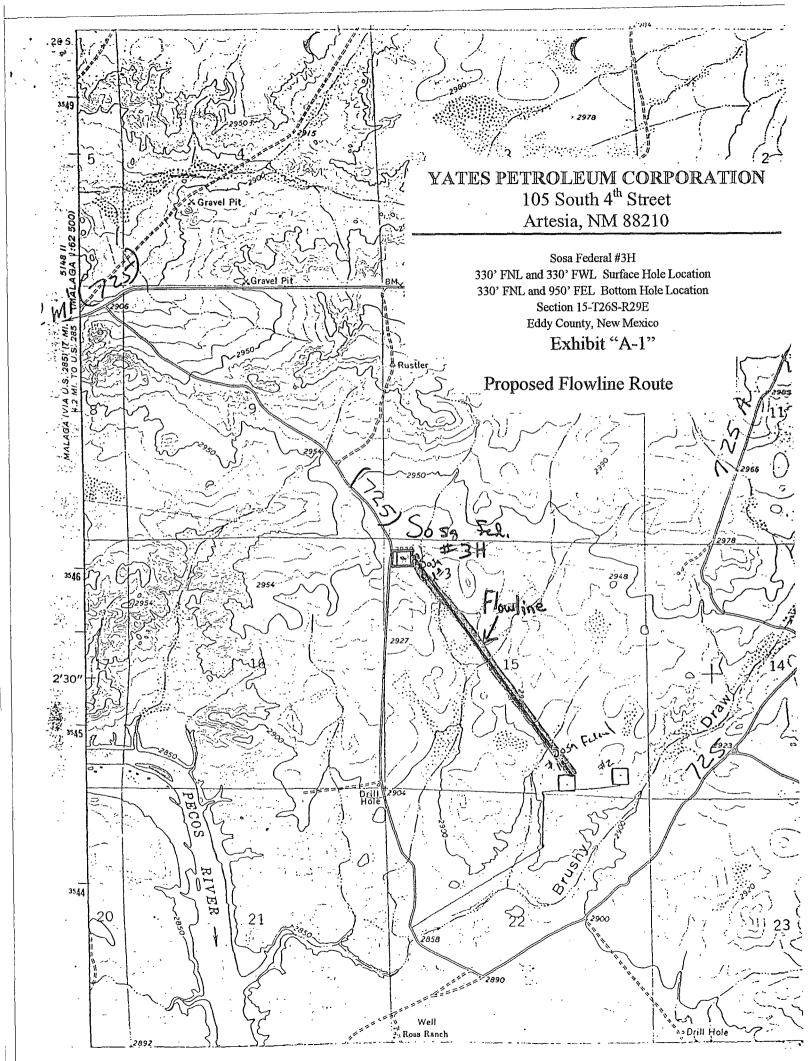


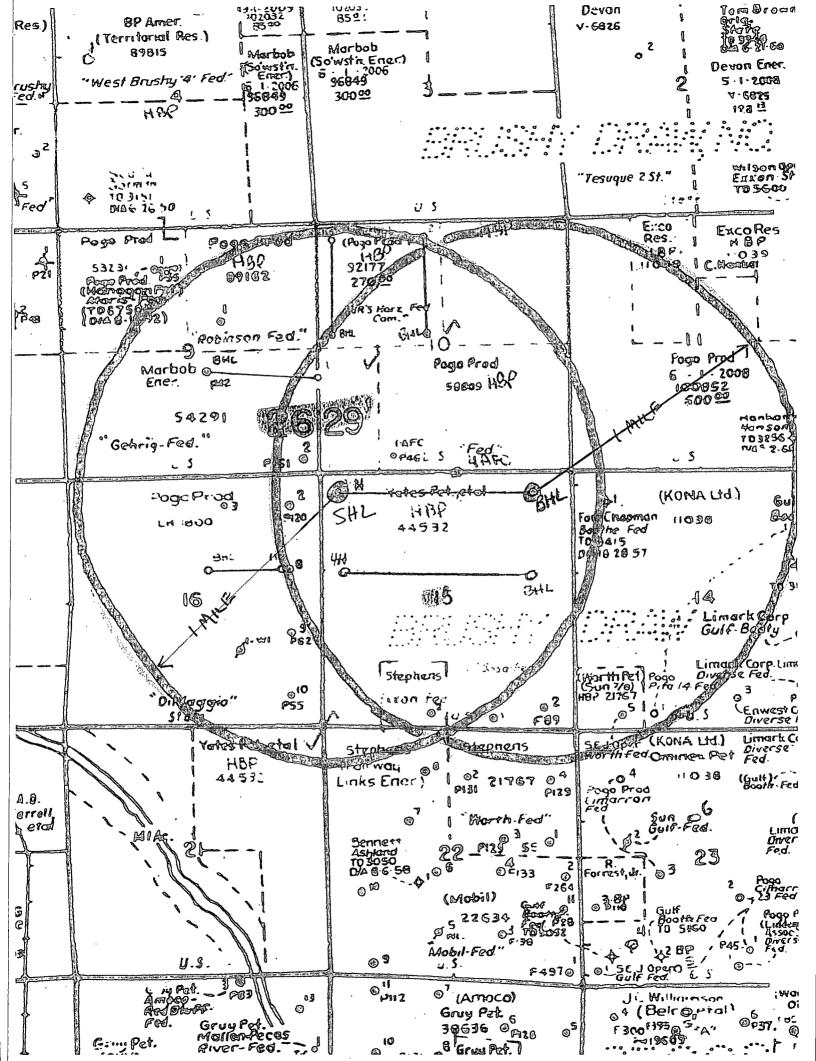












YATES PETROLEUM CORPORATION

Sosa Federal #3H 330' FNL & 330' FWL, Section 15-T26S-R29E, Surface Hole 330' FNL & 330' FWL, Section 15-T26S-R29E, TD Pilot Hole 330' FNL & 950' FEL, Section 15-T26S-R29E, Bottom Hole Eddy County, New Mexico

1. THE ESTIMATED TOPS OF GEOLOGIC MARKERS ARE AS FOLLOW: Depths are TVD.

Rustler	330'	Cherry Canyon	3850'Oil	
Top of Salt	710'	Kickoff point	4628'	
Base of Salt	2945'	Brushy Canyon	5120'Oil	
Bell Canyon	2970'Oil	TD	5400'	

2. THE ESTIMATED DEPTHS AT WHICH ANTICIPATED WATER, OIL OR GAS FORMATIONS ARE EXPECTED TO

Water: Approx 85' Oil or Gas: See above--All Potential Zones

#### 3. PRESURECONTROL EQUIPMENT: \* See COA

A BOP with a minimum opening of 13 5/8" will be installed on the 9 5/8" casing and rated for 2000 PSI and will be consistent with API RP 53. Blind rams and pipe rams will be tested to 2000 psi. Test will be conducted by an independent Tester, utilizing a test plug in the well head. Test will be held for 10 minutes on each segment of the system tested. Any leaks will be repaired at the time of the test. Annular preventer will be tested to 50% of rated working pressure. Blowout Preventer controls will be installed prior to drilling the surface plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report.

#### A Auxiliary Equipment:

Kelly cock, pit level indicators, flow sensor equipment and a sub with full opening valve to fit the drill pipe and collars will be available on the rig floor in the open position at all times for use when Kelly is not in use.

, See COA

#### 4. THE PROPOSED CASING AND CEMENTING PROGRAM:

A. Casing Program: (All New)

CASING	HOLE	CASING SIZE	WT./FT.	GRADE	COUPLING	INTERVAL	LENGTH	
Surface	14 3/4"	9 5/8"	36#	J-55	ST&C	0'-500'	500'	See COA Contingency
Pilot Hole	7 7/8"	Open Hole	N/A	N/A	N/A	0'-5400'	5400'	mana
Production	7 7/8"	5 1/2"	17#	HCP-110	LT&C	0'-8901'	8901'	

Minimum Casing Design Factors: Burst 1.0, Tensile 1.8, Collapse 1.125

CEMENTING PROGRAM: Surface casing Lead with 525 sacks Class C with CaCl2 (Wt 14 80 Yld. 1.32). Cement designed with N0% excess. **▼**OC-Surface Production Casing will be cemented in two stages with a DV tool at approximately 5000' Production Casing from 8901' to 5000". Stage One-cement with 975 saoks Pecos Valley Lite Cement designed with 35% excess. with 0112, Fluid Loss 0.4%; D151, Caleium Carbonate 22.5 lb/sack; D174, Extender 15 lb/sack; D177, Retarder 0.01 lb/sack; D800, Retarder 0.6 lb/sack; D46, Antifoam Agent (Wt. 13:00 YId 7.41). TOC 5000'. DV tool at 5000 4

#### Sosa Federal #3H Page 2

## B. CEMENTING PROGRAM: \* See COA

Surface Casing: 0-750' 350 sx 'C' (WT 14.8 YLD 1.32) + 2% CaCL2. See COA Surface Production Casing: 0-8938' TOC-2950 500 sx 'C' Lite 'H' (WT 12.5 YLD 2.05). Tail in with 1350 sx Magne+ (WT 13.0 YLD 1.05)

#### 5. MUD PROGRAM AND AUXILIARY EQUIPMENT:

Interval	Туре	<u>Weight</u>	<u>Viscosity</u>	<u>Fluid Loss</u>
0-750'	Fresh Water/Gel	8.4-9.2	28-29	N/C
750'-5400'	Brine	9.9-10.0	28-32	<15cc
4720'-8938'	Brine	9.9-10.0	28-29	N/C

Sufficient mud material(s) to maintain mud properties, control lost circulation and contain a blow out will be available at the well site during drilling operations. Mud will be checked hourly by rig personnel.

6. EVALUATION PROGRAM: \* See COA

Samples: 30' samples to 3000'. 10' samples from 2900' to TD. Logging: Platform Hals/CMR. Coring: None. DST's: As warranted.

7. ABNORMAL CONDITIONS, BOTTOM HOLE PRESSURE, AND POTENTIAL HAZARDS: Anticipated BHP:

From:	0	TO:	750'	Anticipated Max.	BHP:	360	PSI
From:	750'	TO:	5400'	Anticipated Max.	BHP:	2810	PSI

No abnormal pressures or temperatures are anticipated.

Lost Circulation Zones Anticipated: None

H2S Zones Anticipated: None Anticipated

Maximum Bottom Hole Temperature: 128F.

#### 8. ANTICIPATED STARTING DATE:

Plans are to re-enter this well as soon as possible after receiving approval. It should take approximately 30 days to re-enter the well with completion taking another 15 days.

M.D.	Inclination	Azimuth	T.V.D.	N+/S-	E+/W-	D.L.S.	ToolFace	T.F. Ref [HS/GN]	
0	0	0	0	0	0	0			
330			330						RUSTLER
710	0	0	710	0	0	0			TOP OF SALT
2945	0	0	2945	0	0	0			BASE OF SALT
2970	0	0	2970	0	0	0			BELL CANYON
3850	0	0	3850	0	0	0			CHERRY CANYON
4628	0	0	4628	0	0	12	90	GN	KOP
4650	2.64	90	4649.99	0	0.51	12	0	HS	
4675	5.64	90	4674.92	0	2.31	12	0	HS	
4700	8.64	90	4699.73	0	5.42	12	0	HS	
4725	11.64	90	4724.33	0	9,82	12	0	HS	
4750	14.64	90	4748.68	0	15.5	12	0	HS	
4775	17.64	90	4772.69	0	22.45	12	0	HS	
4800	20.64	90	4796,3	0	30.65	12	0	HS	
4825	23.64	90	4819.46	0	40.07	12	0	HS	
4850	26.64	90	4842.09	0	50.69	12	0	HS	
4875	29.64	90	4864.13	0	62.48	12	0	HS	
4900	32.64	90	4885.53	0	75.4	12	0	HS	· ·
4925	35.64	90	4906.21	0	89.43	12	0	HS	
4950	38.64	90	4926.14	0	104.52	12	0	HS	
4975	41.64	90	4945.25	0	120.64	12	0	HS	
5000	44.64	90	4963.49	0	137.73	12	0	HS	
5025	47.64	90	4980.81	0	155.76	12	0	HS	
5050	50.64	90	4997.17	0	174,66	12	0	HS	
5075	53.64	90	5012.51	0	194.4	12	0	HS	
5100	56.64	90	5026.79	0	214,91	12	0	HS	
5125	59.64	90	5039,99	0	236.14	12	0	HS	
5150	62.64	90	5052.05	0	258.03	12	0	HS	
5175	65.64	90	5062.96	0	280,53	12	0	HS	
5200	68.64	90	5072.67	0	303.56	12	0	HS	
5225	71.64	90	5081,16	0	327.07	12	0	HS	
5250	74.64	90	5088,41	0	350.99	12	0	HS	
5275	77.64	90	5094.4	0	375.26	12	0	HS	
5300	80.64	90	5099.11	0	399.81	12	0	HS	
5325	83.64	90	5102,53	0	424.57	12	0	HS	[
5350	86.64	90	5104.64	0	449.48	12	0	HS	
5371.97	89.28	90	5105.43	Ö	471.43	. 0	1		TARGET SAND
8900.82	89.28	90	5150	0	4000	0	1		LATERAL TD

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Pilot hole drilled to 5400'. Well will be plugged back with 180' plug on bottom then a 400'-500' kick off plug with KOP at approx. 4628'. Well will be kicked off and directionally drilled at 12 degrees per 100' with a 7 7/8" hole to 8,901' MD (5,150' TVD), where 5 1/2" casing will be set and cemented. Penetration point of producing zone will be encountered at 330' FNL and 801' FWL Section 15-26S-29E. Deepest TVD in the well is 5400' in the pilot hole. Deepest TVD in the lateral is 5150'

#### 3D<sup>3</sup> Directional Drilling Planner - 3D View

Company: Yates Petroleum Corporation Well: Sosa Federal #3H

> 1 ..... No. 1 900 ----2700 ... .

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## 3D<sup>3</sup> Directional Drilling Planner - 3D View

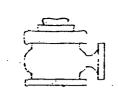
Company: Yates Petroleum Corporation Vell: Sosa Federal #3H

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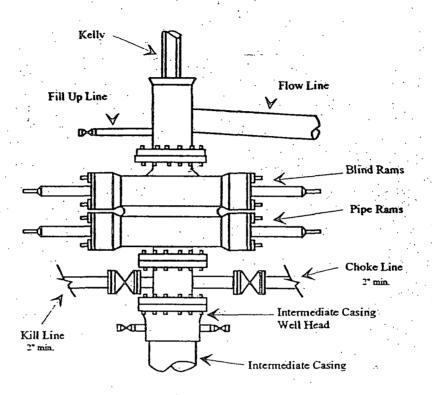
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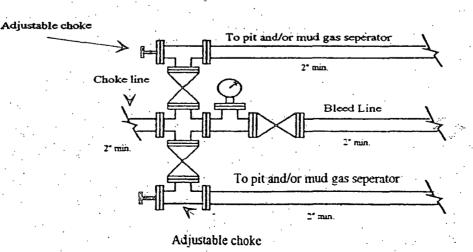


# Yates Petroleum Corporation Typical 2,000 psi Pressure System

Schematic Double Ram Preventer Stack



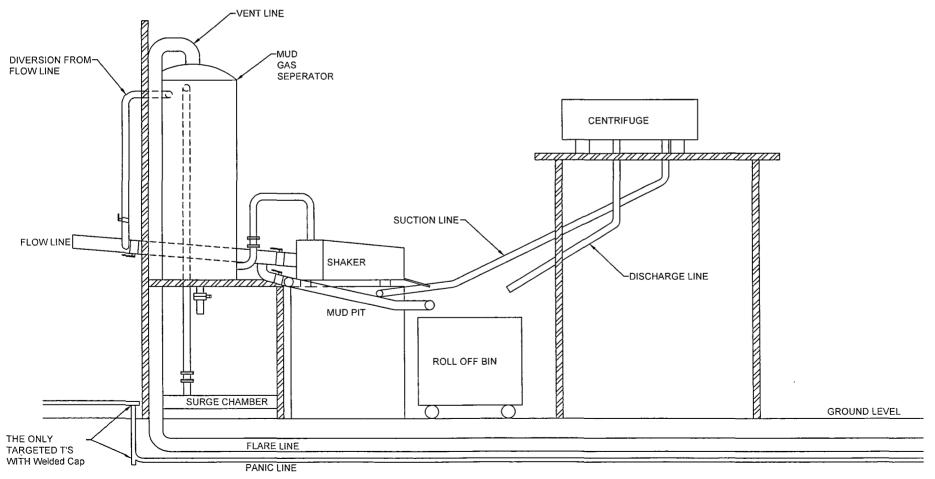
Typical 2,000 psi choke manifold assembly with at least these minimun features



BOP-2

# YATES PETROLEUM CORPORATION

Piping from Choke Manifold to the Closed Loop Drilling Mud System





For closed-loop systems that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure, submit to the appropriate NMOCD District Office.

#### Closed-Loop System Permit or Closure Plan Application

(that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)

Type of action: Permit Closure

Instructions: Please submit one application (Form C-144 CLEZ) per individual closed-loop system request. For any application request other than for a closed-loop system that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure, please submit a Form C-144. Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the

environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.							
Operator:	Yates Petroleum Corpora	ation OGR	ID #:	<u>025575</u>			
Address:	105 South Fourth Street, A	<u>Artesia, NM 88210</u>					
Facility or well name:	Sosa Federal #3H						
API Number:		0	CD Permit Nu	mber:	<u> </u>		
U/L or Qtr/Qtr <u>D</u>	Section <u>15</u>	Fownship <u>26S</u>	Range	<u>29E</u>	County:	<u>Eddy</u>	
Center of Proposed Design:	Latitude <u>N32.04878</u>	Longitude	<u>W103.9793</u>	<u>9</u>	NAD: [	1927 🛛 1983	3
Surface Owner: 🛛 Federal	State Private T	ribal Trust or Indian All	otment				
2. X <u>Closed-loop System:</u> Operation: X Drilling a no Above Ground Steel Ta	ew well 🔲 Workover or D		ities which rec	quire prior aț	oproval of a	permit or notice	e of intent) 🗌 P&A
<ul> <li>3.</li> <li>Signs: Subsection C of 19.15.17.11 NMAC</li> <li>12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers</li> <li>Signed in compliance with 19.15.16.8 NMAC</li> </ul>							
Instructions: Each of the attached.	<u>Closed-loop Systems Permit Application Attachment Checklist</u> : Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are						
5.         Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D NMAC)         Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.         Disposal Facility Name:       Gandy Marley         Disposal Facility Name:       CRI         Disposal Facility Name:       Lea Land Farm         Disposal Facility Name:       Sundance Services Inc         Disposal Facility Name:       Sundance Services Inc							
Disposal Facility Name: <u>Sundance Services Inc.</u> Disposal Facility Permit Number: <u>NM-01-0003</u> Will any of the proposed closed-loop system operations and associated activities occur on or in areas that <i>will not</i> be used for future service and operations? Yes (If yes, please provide the information below) No							
<i>Required for impacted area</i> Soil Backfill and Cov	s which will not be used fo ver Design Specifications -			nents of Sub:	section H of	19.15.17.13 N	MAC

Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

6. Operator Application Certification:	
I hereby certify that the information submitted with this application is true, and	ccurate and complete to the best of my knowledge and belief.
Name (Print):	Title: Land Regulatory Technician
Signature: <u>fori</u> flores	Date: <u>8/5/2013</u>
e-mail address: <u>lorif@yatespetroleum.com</u>	Telephone: <u>575-748-4448</u>
7. OCD Approval: Permit Application (including closure plan) Closure	re Plan (only)
OCD Representative Signature:	Approval Date:
Title:	OCD Permit Number:
8. Closure Report (required within 60 days of closure completion): Subsect Instructions: Operators are required to obtain an approved closure plan pr The closure report is required to be submitted to the division within 60 days section of the form until an approved closure plan has been obtained and th	ior to implementing any closure activities and submitting the closure report. of the completion of the closure activities. Please do not complete this
9. <u>Closure Report Regarding Waste Removal Closure For Closed-loop Syst</u> <i>Instructions: Please indentify the facility or facilities for where the liquids,</i> <i>two facilities were utilized.</i>	ems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: drilling fluids and drill cuttings were disposed. Use attachment if more than
Disposal Facility Name:	Disposal Facility Permit Number:
Disposal Facility Name:	
Were the closed-loop system operations and associated activities performed o	
Required for impacted areas which will not be used for future service and operation         Site Reclamation (Photo Documentation)         Soil Backfilling and Cover Installation         Re-vegetation Application Rates and Seeding Technique	erations:
10. Operator Closure Certification:	
I hereby certify that the information and attachments submitted with this closure belief. I also certify that the closure complies with all applicable closure requ	
Name (Print):	Title:
Signature:	Date:
e-mail address:	Telephone:

### Yates Petroleum Corporation Closed Loop System

#### Equipment Design Plan

Closed Loop System will consist of:

1 – double panel shale shaker

1 - (minimum) Centrifuge, certain wells and flow rates may require 2 centrifuges On certain wells, the Centrifuge will be replaced by a Clackco Settling Tank System 1 - minimum centrifugal pump to transfer fluids

2- 500 bbl. FW Tanks

1 – 500 bbl. BW Tank

1 - half round frac tank - 250 bbl. capacity as necessary to catch cement / excess mud returns generated during a cement job.

1 Set of rail cars / catch bins

Certain wells will use an ASC Auger Tank

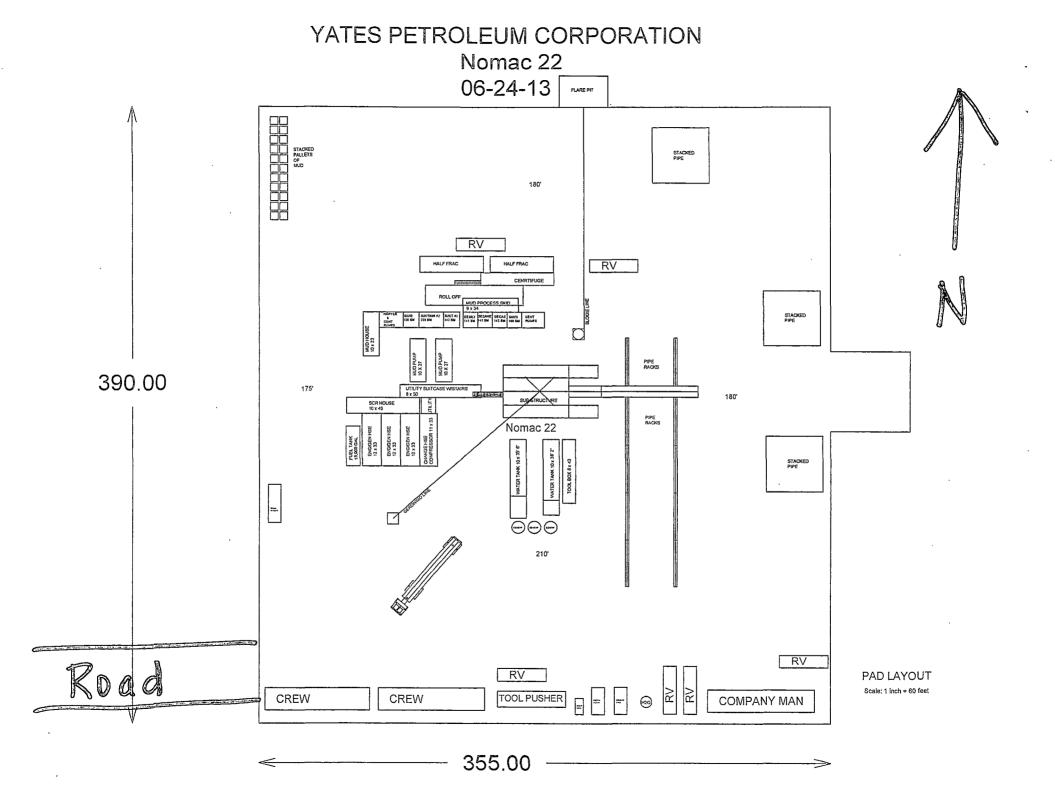
#### **Operation Plan**

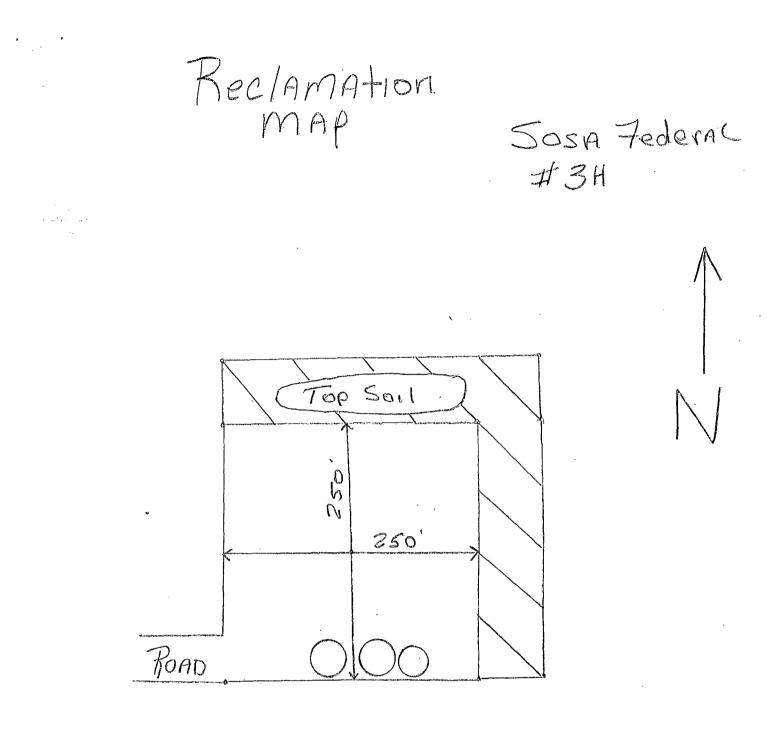
All equipment will be inspected at least hourly by rig personnel and daily by contractors' personnel.

Any spills / leaks will be reported to YPC, NMOCD, and cleaned up without delay.

#### Closure Plan

Drilling with Closed Loop System, haul off bins will be taken to Gandy Marley, Lea Land Farm, CRI or Sundance Services Inc.





Possible Reclaimed AREA

#### **Emergency Procedures**

In the case of a release of gas containing  $H_2S$ , the first responder(s) must isolate the area and prevent entry by other persons into the 100 ppm ROE. Additionally the first responder(s) must evacuate any public places encompassed by the 100 ppm ROE. First responder(s) must take care not to injure themselves during this operation. Company and/or local officials must be contacted to aid in this operation. Evacuation of the public should be beyond the 100 ppm ROE.

All responders must have training in the detection of  $H_2S$ , measures for protection against the gas, equipment used for protection and emergency response. Additionally, responders must be equipped with  $H_2S$  monitors and air packs in order to control the release. Use the "buddy system' to ensure no injuries during the response.

#### Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Common Name	Chemical Formula	-Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentr- ation
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air = 1	10 ррт	100 ppm/hr	600 ррт
Sulfur Dioxide	SO <sub>2</sub>	2.21 Air = 1	2 ррт	N/A	1000 ppm

Characteristics of H<sub>2</sub>S and SO<sub>2</sub>

## **Contacting Authorities**

YPC personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. YPC Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

1. 17

## Yates Petroleum Corporation Phone Numbers

YPC Office	
Wade Bennett/Prod Superintendent	
LeeRoy Richards/Assistant Prod Superintendent	(575) 748-4228
Mike Larkin/Drilling	(575) 748-4222
	(575) 624-2805
Tim Bussell/Drilling Superintendent	(575) 748-4221
Artesia Answering Service	
(During non-office hours)	

### **Agency Call List**

#### Eddy County (575)

#### Artesia

State Police	
City Police	
Sheriff's Office	
Ambulance	
Fire Department	
LEPC (Local Emergency Planning Committee)	
NMOCD	
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Carlsbad	
State Police	885-3137
City Police	885-2111
Sheriff's Office	887-7551
Ambulance	911
Fire Department	885-2111
LEPC (Local Emergency Planning Committee)	
US Bureau of Land Management	887-6544
New Mexico Emergency Response Commission (Santa Fe)	(505)476-9600
24 HR	(505) 827-9126
New Mexico State Emergency Operations Center	(505) 476-9635
National Emergency Response Center (Washington, DC)	(800) 424-8802

### Other

Boots & Coots IWC	1-800-256-9688 or (281) 931-8884
Cudd Pressure Control	(915) 699-0139 or (915) 563-3356
Halliburton	
B. J. Services	(575) 746-3569

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YPC H2S Contingency Plan. Page 4

## **Yates Petroleum Corporation**

## Hydrogen Sulfide Drilling Operation Plan

## I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

- 1. The hazards and characteristics of hydrogen sulfide (H2S).
- 2. The proper use and maintenance of personal protective equipment and life support systems.
- 3. The proper use of H2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
- 4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

- 1. The effects of H2S on metal components. If high tensile tubular are to be used, personnel well be trained in their special maintenance requirements.
- 2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
- 3. The contents and requirements of the H2S Drilling Operations Plan and H2S Contingency Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operation Plan and the H2S Contingency Plan. The location of this well does not require a Public Protection Plan.

H2S Plan

## **II. H2S SAFETY EQUIPMENT AND SYSTEMS**

NOTE: All H2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H2S.

#### 1. Well Control Equipment:

- A. Flare line
- B. Choke manifold will have a remotely operated adjustable choke system.
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
- D. Auxiliary equipment may include if applicable: annular preventer & rotating head.

#### 2. Protective equipment for essential personnel:

- A. Mark II Survive Air (or equivalent) 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.
- 3. H2S detection and monitoring equipment:
  - A. 3 portable H2S monitors positioned at: Shale Shaker, Bell Nipple, and Rig Floor. These units have warning lights and audible sirens when H2S levels of 10 PPM are reached.

## 4. Visual warning systems:

- A. Wind direction indicators as shown on well site diagram (attached).
- B. Caution/Danger signs (attached) shall be posted on roads providing direct access to location. Signs will be painted with high visibility yellow with black lettering of a sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

#### 5. Mud program:

A. The mud program has been designed to minimize the volume of H2S circulated to the surface. Proper mud weight, safe drilling practices and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

#### 6. 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.

## 7. Communication:

A. Cellular communications in company vehicles.

B. Land line (telephone) communication at the Office.

8. Well testing:

A. There will be no drill stem testing.

## EXHIBIT

DANGER
POISONS GAS
HYDROGEN SULFIDE
INORMAL OPERATIONS
CAUTION POTENTIAL DANGER
(YELLOW)
DANGER POISONS GAS ENCOUNTERED
(RED) AUTHORIZED PERSONAL ONLY.
LOCATION SECURED.
1-575-746-1096
1-877-879-8899

EDDY.COUNTY.EMERGENCY.NUMBERS ARTESIA FIRE DEPT. 575-746-5050 ARTESIA POLICE DEPT. 575-746-5000 EDDY CO. SHERIFF DEPT. 575-746-9888 LEA COUNTY EMERGENCY/NUMBERS HOBBS FIRE DEPT. 575-397-9308 HOBBS POLICE DEPT. 575-397-9285 LEA CO. SHERIFF DEPT. 575-396-1196

H2S Plan

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## MULTI-POINT SURFACE USE AND OPERATIONS PLAN YATES PETROLEUM CORPORATION Sosa Federal #3H 330' FNL and 330' FWL Surface Hole Location 330' FNL and 950' FEL Bottom Hole Location Section 15, T26S-R29E Eddy County, New Mexico

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

### 1. EXISTING ROADS:

Exhibit A is a portion of the BLM map showing the well and roads in the vicinity of the proposed location. The proposed wellsite is located approximately 35 miles southeast of Carlsbad, New Mexico and the access route to the location is indicated in red and green on Exhibit A.

#### DIRECTIONS:

Go south of Carlsbad on Highway 285 for approximately 28.5 miles to Whitehorn Road (CR-725). Turn east on Whitehorn Road and go approximately 5.6 miles. The proposed well location is on the left side of the county road. No new road will be needed to access the location.

## 2. PLANNED ACCESS ROAD:

- A. No new access road will be needed.
- B. Existing roads will be maintained in the same or better condition.

### 3. LOCATION OF EXISTING WELL:

- A. There is drilling activity within a one-mile radius of the wellsite.
- B. Exhibit shows existing wells within a one-mile radius of the proposed wellsite.

## 4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

- A. There are production facilities on this lease at the present time.
- B. There will not be a tank battery located on this well pad. In the event that the well is productive, production from the well will be sent visa flowline to the Sosa Federal #1 Battery. If the well is productive oil, a gas or diesel self-contained unit will be used to provide the necessary power. No power will be required if the well is productive of gas.
- C. One 3" SDR-11 poly buried flow line with a working pressure of 100# psi will be constructed following the lease road to the Sosa Federal #1 location in the SE/SE/4 of Section 15, T26S-R29E. See attached plats.

## Sosa Federal #3H Page 2

## 5. LOCATION AND TYPE OF WATER SUPPLY:

A. It is planned to drill the proposed well with a fresh water system. The water will be obtained from commercial sources and will be hauled to the location by truck over the existing and proposed roads shown in Exhibit A.

## 6. SOURCE OF CONSTRUCTION MATERIALS:

Dirt contractor will locate nearest pit and obtain any permits and materials needed for construction.

## 7. METHODS OF HANDLING WASTE DISPOSAL:

- A. Drill cuttings will be collected in tanks until hauled to an approved disposal system.
- B. A closed loop system will be constructed, maintained and closed in compliance with the State of New Mexico, Energy and Natural Resources Department, Oil Conservation Division—the "Pit Rule" 19.15.17 NMAC. Form C-144 attached – Exhibit E.
- C. Drilling fluids will be removed after drilling and completions are finalized.
- D. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or separate disposal application will be submitted.
- E. Oil produced during operations will be stored in tanks until sold.
- F. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- G. All trash, junk, and other waste materials will be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not approved.

## 8. ANCILLARY FACILITIES:

A buried flow line will be constructed and will follow the same route as the powerline to theSosa Federal #1 location in the SE/SE/4 of Section 15, T26S-R29E. This project was included with our Sosa Federal #3 APD approved 7/6/06. See attached exhibit.

## 9. WELLSITE LAYOUT:

- A. The Exhibit shows the relative location and dimensions of the well pad, the closed loop design plan, the location of the drilling equipment, orientation and access road approach.
- B. The closed loop system will be constructed, maintained, and closed in compliance with the State of New Mexico, Energy and Natural Resources Department, Oil Conservation Division the "Pit Rule" 19.15.17 NMAC. Form C-144 is attached Exhibit E.
- C. A 600' x 600' area has been staked and flagged.
- 10. PLANS FOR RESTORATION:
  - A. After finishing drilling and/or completion operations, all equipment and other material not needed for further operations will be removed. The location will be cleaned of all trash and junk to leave the well site in as aesthetically pleasing a condition as possible. The location will be reduced to a 250' x 250' after completion operations have been conducted. At this point the surfacing material will be removed, topsoil will be redistributed and the area will be reseeded. The area will be contoured as closely as possible to its original shape. Please note attached Reclamation Plat

- B. If the proposed well is plugged and abandoned, all equipment and other material will be removed. The location will be cleaned of all trash and junk to leave the well site in as aesthetically pleasing a condition as possible. At this point the surfacing material will be removed, topsoil will be redistributed and the area will be reseeded. These actions will be completed and accomplished as expeditiously as possible.
- 11. SURFACE OWNERSHIP: Federal Surface, Administered by Bureau of Land Management, Carlsbad, New Mexico.

- 12. OTHER INFORMATION:
  - A. Topography: Refer to the existing archaeological report for a description of the topography, flora, fauna, soil characteristics, dwellings, historical and cultural sites.
  - B. The primary surface use is for grazing.



# PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	
LEASE NO.:	NM44532
WELL NAME & NO.:	3H Sosa Federal
SURFACE HOLE FOOTAGE:	330' FNL & 330' FWL
BOTTOM HOLE FOOTAGE	330' FNL & 950' FEL
LOCATION:	Section 15, T. 26 S., R 29 E., NMPM
COUNTY:	Eddy County, New Mexico
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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
Drilling
Casing/Cement Requirements
Logging Requirements
BOP Requirements
High Cave/Karst Requirements
Waste Material and Fluids
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.

## 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

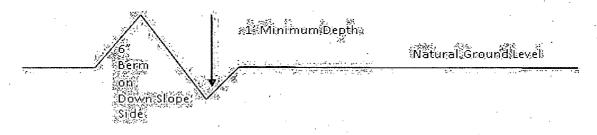
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

#### 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:  $\underline{400'} + 100' = 200'$  lead-off ditch interval  $\underline{4\%}$ 

#### **Culvert Installations**

Appropriately sized culverts shall be installed at deep waterway channel flow crossings through the road.

#### Cattleguards

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings.

Any existing cattleguards 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 cattleguards that are in place and are utilized during lease operations.

## **Fence Requirement**

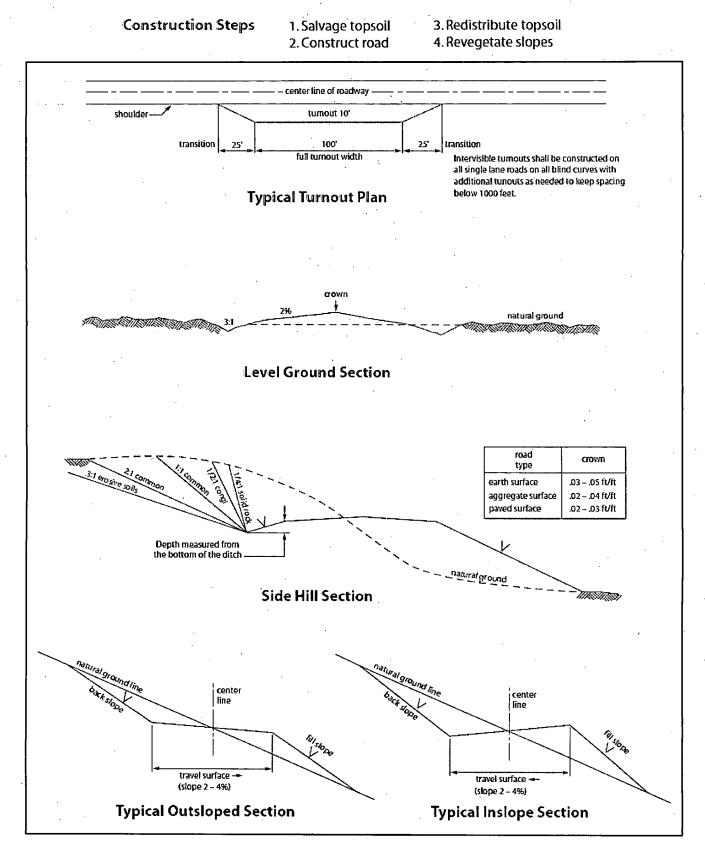
Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

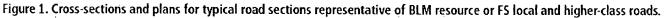
The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

## **Public Access**

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Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.





## VII. 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)
  - Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822
- 1. Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. It is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide. If Hydrogen Sulfide is encountered, report measured amounts and formations to the BLM.
- 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 Potash Areas:

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 for all cement blends, 2) until cement has been in place at least <u>24 hours</u>. WOC time will be recorded in the driller's log.

## 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 <u>8 hours</u>. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string..

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

#### High Cave/Karst

Possibility of water flows in the Salado and Castile. Possibility of lost circulation in the Rustler and Delaware.

<u>A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS</u> <u>REQUIRED IN HIGH CAVE/KARST AREAS.</u> THE CEMENT MUST BE IN A SOLID SHEATH. THEREFORE, ONE INCH OPERATIONS ARE NOT SUFFICIENT TO PROTECT CAVE KARST RESOURCES. A CASING DESIGN THAT HAS A ONE INCH JOB PERFORMED DOES NOT COUNT AS A SOLID SHEATH.

<u>ON TWO STRING DESIGN</u> – CONTINGENCY CASING WILL BE REQUIRED IF LOST CIRCULATION (TOTAL LOSS) OCCURS WHILE DRILLING THE SURFACE HOLE. THE SURFACE HOLE WILL HAVE TO BE REAMED AND A LARGER CASING INSTALLED AND <u>THE BLM IS TO BE CONTACTED</u> <u>PRIOR TO RUNNING THE CASING.</u> NOTE: A DEEP CONDUCTOR WILL BE TREATED AND CEMENTED AS A CONTINGENCY CASING.

## ON TWO STRING DESIGN WHERE THE SURACE CASING HAD A SUCCESSFUL CEMENT JOB; IF LOST CIRCULATION (TOTAL LOSS) OCCURS WHILE DRILLING THE PRODUCTION 7-7/8" HOLE, THE CEMENT PROGRAM FOR THE PRODUCTION 5-1/2" CASING WILL NEED TO BE MODIFIED AND THE BLM IS TO BE CONTACTED PRIOR TO RUNNING THE CASING. A DV TOOL WILL BE REQUIRED.

- 1. The 9-5/8 inch surface casing shall be set at approximately 400 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.
  - a. 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.
  - b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.
  - c. 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.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Pilot hole plugging procedure approved as written. Pilot hole is required to have a plug at the bottom of the hole. BLM is to be contacted (575-361-2822) prior to tag of bottom plug. Tag depth to be reported on subsequent sundry with spud/casing details.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

2. The minimum required fill of cement behind the 5-1/2 inch intermediate casing, is:

Cement to surface. If cement does not circulate see B.1.a, c-d above. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.

4. 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 RP 53 Sec. 17.
- 2. 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.
  - a. For surface casing only: If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
- 3. 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.

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## VIII. 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 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, <u>Shale Green</u> from the BLM Standard Environmental Color Chart (CC-001: June 2008).

## IX. 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).

## X. 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).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

## Seed Mixture 3, for Shallow 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:

Specieslb/acrePlains Bristlegrass (Setaria magrostachya)1.0Green Spangletop (Leptochloa dubia)2.0Side oats Grama (Bouteloua curtipendula)5.0

\*Pounds of pure live seed:

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