

ATS-09-6876

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Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Split Estate

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. 032096 B NMLC 065525
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name N/A
2. Name of Operator Apache Corporation		7. If Unit or CA Agreement, Name and No. (35023) East Blinbry Drinkard -U, NM112723X
3a. Address Suite 1500, Two Warren Place, 6120 S. Yale, Tulsa, OK 74136	3b. Phone No. (include area code) (918) 491-4900	8. Lease Name and Well No. EBDU # 109
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 330' FSL & 1330' FWL At proposed prod. zone Same as above - Vertical hole		9. API Well No. 30-025-39405
14. Distance in miles and direction from nearest town or post office* Approximately 2 miles NE of Eunice, NM		10. Field and Pool, or Exploratory East Blinbry Drinkard
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) Approx. 330' north of Section 24, T. 21 S., R. 37 E.		11. Sec., T. R. M. or Bk. and Survey or Area Sec 13-N, T. 21 S., R. 37 E.
16. No. of acres in lease 2128.48		12. County or Parish Lea
17. Spacing Unit dedicated to this well 40 acres		13. State NM
18. Distance from proposed location* to nearest well, drilling, completed, of the EBDU # 042 POW applied for, on this lease, ft. Approximately 816' SW		19. Proposed Depth 7,000'
20. BLM/BIA Bond No. on file CO 1463 Nationwide		21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3417'
22. Approximate date work will start* 03/01/2009		23. Estimated duration 10 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. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM. |

25. Signature <i>Vernon D. Dyer</i>	Name (Printed/Typed) Vernon D. Dyer (575) 420-0355	Date 2-24-2009
Title AGENT (PLEASE CONTACT AGENT FOR ANY PERTINENT ADMENDMENTS CONCERNING THIS APD AT (575) 420-0355)		
Approved by (Signature) <i>/s/ Don Peterson</i>	Name (Printed/Typed)	Date MAY 19 2009
Title FIELD MANAGER		
Office CARLSBAD FIELD OFFICE		

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.

APPROVAL FOR TWO YEARS

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)

CAPTAN CONTROLLED WATER BASIN

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS

RECEIVED

MAY 21 2009

HOBBSCOCH

State of New Mexico

Energy, Minerals and Natural Resources Department

DISTRICT I

1425 N. FRANKS DR., HOBBBS, NM 88240

DISTRICT II

1201 W. GRAND AVENUE, ALBUQUERQUE, NM 87102

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV

1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

OIL CONSERVATION DIVISION

1220 SOUTH ST. FRANCIS DR.

Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 5 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-39405	Pool Code 22900	Pool Name Eunice B1-T12-DR North
Property Code 35023	Property Name EAST BLINEBRY DRINKARD UNIT	Well Number 109
OGRID No. 873	Operator Name APACHE CORPORATION	Elevation 3417'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	13	21-S	37-E		330	SOUTH	1330	WEST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
40									
Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p>GEODETIC COORDINATES NAD 27 NME</p> <p>Y=537733.1 N X=874069.7 E</p> <p>LAT.=32.472495" N LONG.=103.120414" W LAT. = 32°28'20.98" N LONG. = 103°07'13.49" W</p> <p>DETAIL</p> <p>SEE DETAIL</p>	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Vernon D. Dyer</i> Signature Date VERNON D. DYER Printed Name</p>
	<p>SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>RONALD J. EIDSON Date Surveyed Signature & Seal of Professional Surveyor <i>Ronald J. Eidson</i> 10/16/08</p>
	<p>Certificate No. GARY EDSON 12841 RONALD J. EIDSON 3239</p>

Exhibit A

Copy

OK
10/16/08



VERTICAL GEOLOGIC WELL PROGNOSIS

☒ NEW WELL FOR ECONOMICS
☐ DEEPENING

WELL NAME: DRINKARD UNIT #109		APACHE CORPORATION		DRINKARD, NE PROSPECT (NMS614)	
330 FSL & 1330 FWL Section 13, T21S-R37E				LEA	NM
DEEPEST DEPTH: 7000		280		Oil & Gas - Pumping	
40		69.0000%		56.8600%	
APACHE CORPORATION		Lockhart B 13		A-1 Lea NM	

FORMATION	EST ELEV: 3432		REFERENCE: KB		OPERATOR: Plains Petroleum	
	TOPS		SUBSEA ELEV		Well Name & No: Nancy Stephens #1	
	Estimated	Actual	Estimated	Actual	LOCATION: 660 FNL & 660 FWL Section 24, T21S-R37E	COUNTY: Lea STATE: NM
Rustler	1369		2063		ELEV: 3427	REFERENCE: KB
Yates	2684		748		ELECTRIC LOG	SUBSEA
Seven Rivers	2923		509		1360	2067
Queen	3481		-49		2652	775
Grayburg	3831		-399		2890	537
San Andres	4068		-636		3450	-23
Glorieta	5289		-1857		3823	-396
Blinney Marker	5720		-2288		4021	-594
Tubb	6196		-2764		5250	-1823
Drinkard	6554		-3122		5680	-2253
Abo	6812		-3380		6169	-2742
					6519	-3092
					6749	-3342

ZONE	TOPS		TYPE OBJECTIVE		DEPLETED (BRP)	GEO PRESSURED (BRP)	THICKNESS		CORE/DST
	Est.	Actual	Primary	Secondary			Gross	Net	
Blinney	5720		Acid & Frac		1800		610	200	
Tubb	6196		Acid & Frac		1900		370	45	
Drinkard	6554		Acid & Frac		2000		280	35	

Apache EBDU #72	UNIT ON BY:	TO:	TD
	SAMPLES FROM:		
	SAMPLE INTERVAL (FT.):		

GEOL	Bob Curtis	918	252-3911	906-5342	491-4924
GEOPHY					
LAND	Michelle Hanson	918		230-7809	491-4838
ENGINEER	RES	918		557-8888	491-4919
	DLG	918	493-1623	978-0121	491-4954
	FROD	918		619-3135	491-4842

E-Log Program:	Spectral Gamma Ray, Spectral Density/Compensated Neutron, Dual Laterolog/MSFL, Sonic	Cost:	\$15,000
Mud Log Program:		Cost:	

FED Lease
North Eunice Blinney, Tubb, Drinkard Pool (40 A)
Expect gas inflow at top Seven Rivers. Weatherford will be logging contractor because they can log through drillpipe.

GEOLOGIST:	Robert E Curtis/hej	DATE:	10/7/2008	AUTHORIZED BY:	David M Allard	DATE:	

EAST BLINEBRY DRINKARD UNIT # 109

DRILLING PROGRAM

1. The geological surface formation is recent Permian with quaternary alluvium and other surficial deposits.

2. Estimated Tops of Geological Markers:

<u>FORMATION</u>	<u>DEPTH</u>
Quaternary alluvials	Surface
Rustler	1369'
Yates	2684'
Seven Rivers	2923'
Queen	3481'
Grayburg	3831'
San Andres	4068'
Glorieta	5289'
Blinebry Marker	5720'
Tubb	6196'
Drinkard	6554'
Abo	6812'
TD	7000'

Estimated depths at which water, oil, gas, or other mineral-bearing formations are expected to be encountered:

<u>SUBSTANCE</u>	<u>DEPTH</u>
Oil	Blinebry@ 5720' Tubb@ 6196' Drinkard@ 6554'
Gas	None anticipated
Fresh Water	None anticipated

All fresh water and prospectively valuable minerals (as described by BLM) encountered during drilling will be recorded by depth and adequately protected. All oil and gas shows within zones of correlative rights will be tested to determine commercial potential.

3. Proposed Casing Program

<u>HOLE SIZE</u>	<u>CASING SIZE OD / ID</u>	<u>GRADE</u>	<u>WEIGHT PER FOOT</u>	<u>DEPTH</u>	<u>SACKS CEMENT</u>	<u>ESTIMATED TOC - REMARKS</u>
12 1/4"	8 5/8" 8.097"	J55 STC	24#	1,400'	725	TOC - Surface 8.9 ppg Water-based Mud; 89 ° F Est. Static Temp; 83 ° F Est. Circ. Temp.
7 7/8"	5 1/2" 4.892"	L80 LTC	17#	0 – 1,000'	1,250	TOC – Surface Float Collar set. @ 6,960'
	5 1/2" 4.892"	J55 LTC	17#	1,000 – 7,000'		10.10 ppg Brine Mud; 126 ° F Est. Static Temp; 115 ° F Est. Circ. Temp.

4. Proposed Cement Program:

<u>CASING</u>	<u>LEAD SLURRY</u>	<u>TAIL SLURRY</u>	<u>DISPLACEMENT</u>
8 5/8"	500 sacks Prem. Plus Class C Cement + 3% bwoc Sodium Chloride + 0.25 lbs/sack Cello Flake + 3 lbs/sack LCM-1 + 0.005 gps FP-6L + 4% bwoc Bentonite gel 885 Vol. Cu Ft 1.7 Vol. Factor Slurry Weight (ppg) 13.5 Slurry Yield (cf/sack) 1.77 Amount of Mix Water (gps) 9.02; Estimated Pumping Time – 70 BC (HH:MM)-4:18;	225 sacks Prem. Plus Class C Cement + 2% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.005 gps FP-L6 + 56.3% Fresh Water 304 Vol. Cu Ft 1.3 Vol. Factor Slurry Weight (ppg) 14.8 Slurry Yield (cf/sack) 1.35 Amount of Mix Water (gps) 6.35 Estimated Pumping Time – 70 BC (HH:MM)-2:33;	86.5 bbls Fresh Water @ 8.33 ppg

8 5/8" Casing: Volume Calculations:

1,400 ft	x	0.4127 cf/ft	with 100% excess	=	1,155.0 cf
42 ft	x	0.3576 cf/ft	with 0% excess	=	15.0 cf (inside pipe)
TOTAL SLURRY VOLUME					= 1,170.1 cf
					= 208.4 bbls

Spacer 20.0 bbls Water @ 8.33 ppg

<u>CASING</u>	<u>LEAD SLURRY</u>	<u>TAIL SLURRY</u>	<u>DISPLACEMENT</u>
5 1/2"	900 sacks (35:65) Poz (Fly Ash): Class C Cement + 5% bwow Sodium Chloride + 0.25 lbs/sack Cello Flake + 0.005 gps FP-L6 + 0.5% bwoc FL-52A + 0.5% bwoc BA-10A + 3 lb/sack LCM-1 + 6% bwoc Bentonite 1,710 Vol. Cu Ft 1.9 Vol. Factor Slurry Weight (ppg) 12.8	350 sacks (50:50) Poz (Fly Ash): Class C Cement + 5% bwow Sodium Chloride + 0.2% bwoc FL-25 + 0.25 lb/sack Cello Flake + 3 lb/sack LCM-1 + 0.6% bwoc FL-25 + 0.005 gps FP-L6 + 2% bwoc Bentonite 455 Vol. Cu Ft 1.3 Vol. Factor Slurry Weight (ppg) 14.2 Slurry Yield (cf/sack) 1.30 Amount of Mix Water (gps)	161.7 bbls 2% Kcl Water @ 8.43 ppg

Slurry Yield (cf/sack) 1.9	5.55;
Amount of Mix Water	Estimated Pumping Time
(gps) 9.82;	70 BC (HH:MM)-4:12;
<u>Estimated Pumping Time</u>	
<u>- 70 BC (HH:MM)-</u>	
<u>4:00;</u>	

<u>5 1/2" Casing: Volume Calculations:</u>				
1400 ft	x	0.1926 cf/ft	with 0% excess	= 269.5 cf
3800 ft	x	0.1733 cf/ft	with 100% excess	= 1,381.9 cf
1800 ft	x	0.1733 cf/ft	with 50% excess	= 467.6cf
40 ft	x	0.1305 cf/ft	with 0% excess	= 5.2 cf(inside pipe)
TOTAL SLURRY VOLUME				= 2,124.2 cf
				= 78.3 bbls

All slurries will be tested prior to loading to confirm thickening times and a lab report furnished to Apache. Fluid loss will be tested and reported on slurries with fluid loss additives. Lab test report will be furnished prior to pumping cement.

5. Proposed Pressure Control Equipment

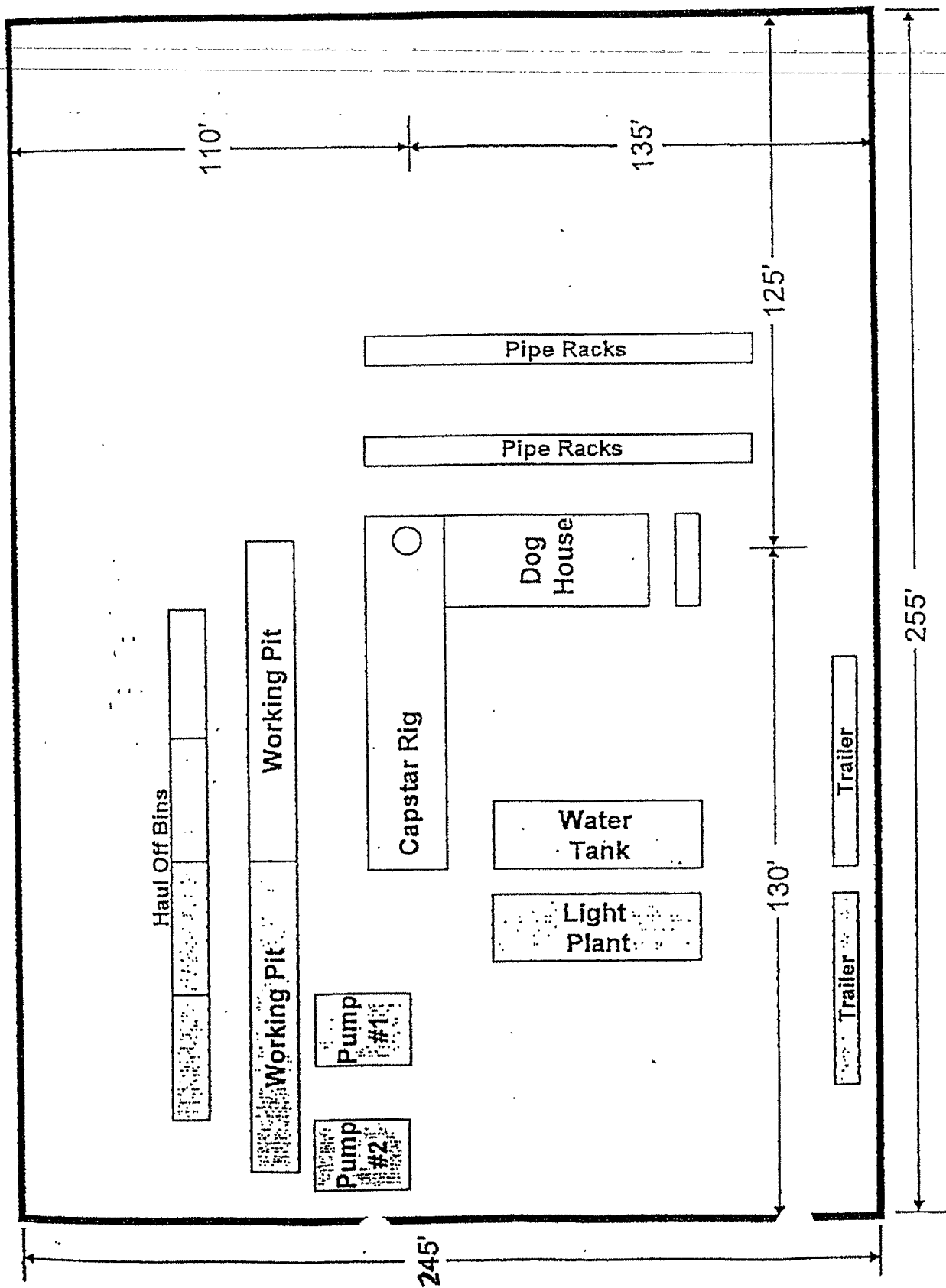
Will install on the 8 5/8" surface casing a 9" x 3000 psi WP Double Ram BOP with Annular, and will test using a 3rd party tester before drilling out of surface casing. **As maximum anticipated surface pressures do not exceed 2,000 psi, we will test the BOPE as a 2,000 psi system.** Bottom hole pressure calculations are included below. See 3,000 psi BOPE schematic attached.

Bottom Hole Pressure Calculations

The maximum anticipated bottom hole pressure is calculated by multiplying the depth of the well by 0.44. The maximum anticipated surface pressure is calculated assuming one half of the hole is evacuated of the drilling fluid required to control the maximum anticipated bottom hole pressure.

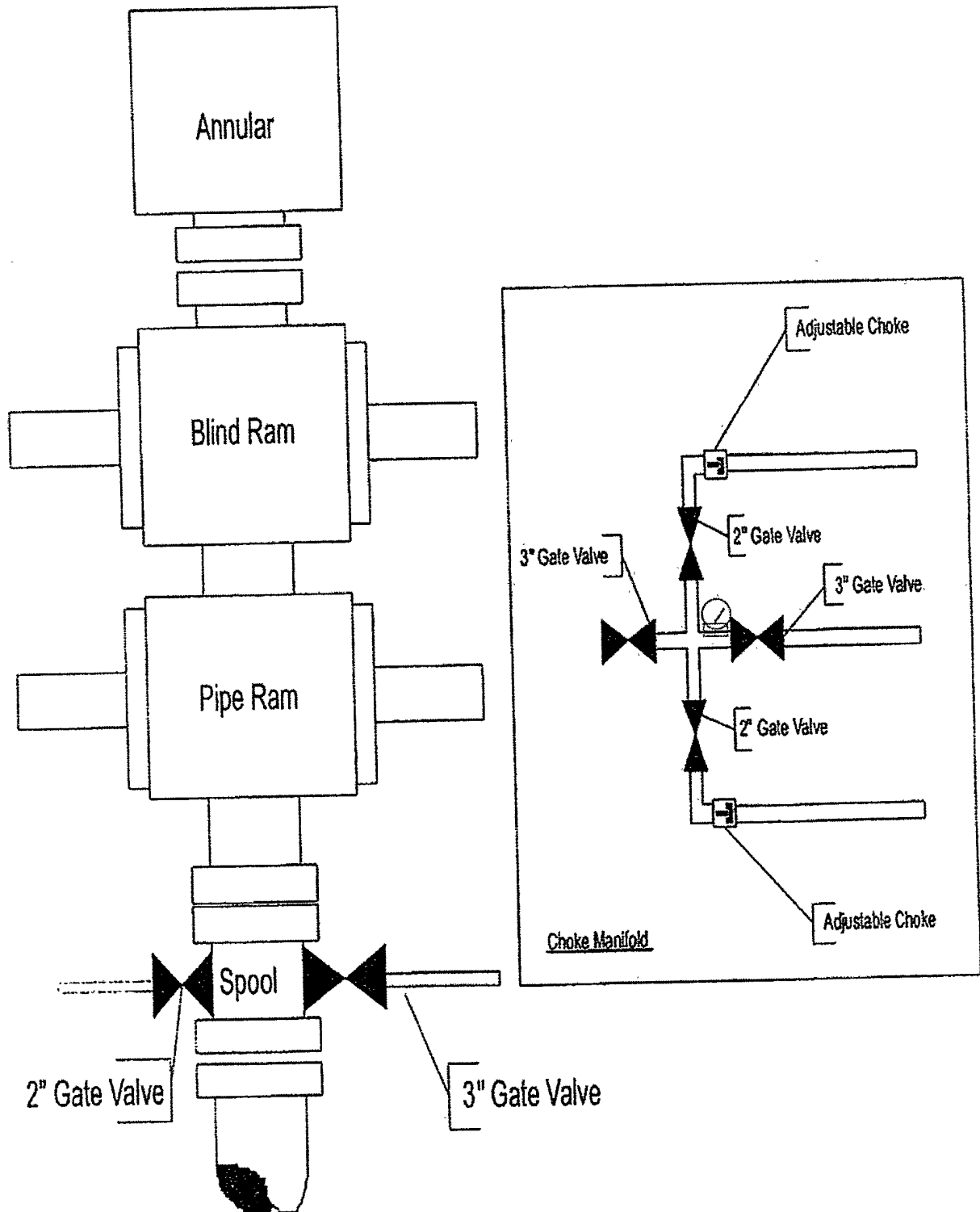
For the East Blinebry Drinkard Unit #109 the maximum anticipated bottom hole pressure is 7,000' x 0.44 psi/ft. = 3,080 psi.

The maximum anticipated surface pressure assuming a hole where one half of the mud required to contain the bottom hole pressure has been evacuated is 3,080 psi – (3,080 psi/2) – 1,540 psi.



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3,000 psi BOPE
Annular Preventor
Blind Ram
Pipe Ram



[illegible]

6. Proposed Mud Program

<u>DEPTH</u>	<u>MUD PROPERTIES</u>	<u>REMARKS</u>
0 – 1,400'	Weight: 8.6 – 9.2 ppg Viscosity: 28 – 34 sec/qt pH: 9.0 – 9.5 Filtrate: NC	Spud with a Conventional Gel/Lime “Spud mud”. Use gel and native solids to maintain a sufficient viscosity to keep the hole clean. Mix Paper one-two sacks every 100 feet drilled to minimize wall cake build up on water sands and to control seepage loss. Every 500' sweep the hole with 50 bbls of pre-mixed freshwater, gel and lime having a viscosity of 45-50 sec/qt.
1400' – 6500'	Weight: 10 10.0 – 10.2 ppg Viscosity: 28 – 32 sec/qt pH: 9.5 -10 Filtrate: NC	Drill out from under the surface casing with Brine Water. Paper should be added at 2 bags after every 100' drilled to control seepage losses. Use Lime to maintain pH at 9-10. Mix one gallon of Anco Drill N at flowline every 250 feet drilled to promote solids settling
6500' – TD	Weight: 10.0 – 10.2 ppg Viscosity: 36 – 42 sec/qt pH: 9.5 -10 Filtrate: 8-10 cm/30 min	From 6500' to Total Depth, it is recommended the system be restricted to the working pits. Adjust and maintain pH with Caustic Soda. Treat system with WT-22 @ 0.1 ppb. Mix Starch (yellow) to control API filtrate at 8-10 cc. Sweep hole with Anco Drill N every 100'.

7. Auxiliary Equipment:

9” x 3000 psi double BOP/blind & pipe ram
41/2" x 3000 psi Kelly valve
9" x 3000 psi mud cross – H₂S detector on production hole
Gate-type safety valve 3" choke line from BOP to manifold
2" adjustable chokes – 3" blowdown line

8. Logging Program

The following logs may be run:

CNL, Litho Density, GR, CAL, Dual Laterolog/MSFL, Sonic from TD-1400'
CNL, GR from TD-Surface

Mudlogging Program:

There are no plans to utilize a mud logging service on this well.

9. Potential Hazards

No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered, however, the proposed mud program will be modified to increase the mud-weight. The estimated maximum bottom hole pressure is 3,080 psi., estimated BHT is 115°F. No H₂S is anticipated.

10. Anticipated Starting Date

March 2009 or when drilling rig becomes available.

CONTACTING AUTHORITIES **FOR EMERGENCY SITUATIONS**

APACHE 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 possible but no later than 4 hours. **Agencies will ask for information about the release such as: Type, Volume, Wind Direction, Location, etc. Be prepared with all information available.** The following call list of essential and potential responders has been prepared for use during a release. This response plan must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

<u>LOCATION</u>	<u>ENTITY</u>	<u>PHONE NUMBER:</u>
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Ambulance	Ambulance	911
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Eunice, NM	Apache Corporation	(575) 394-1503
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OR

Eunice, NM	Apache Corporation	(575) 394-2743
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Eunice, NM	Sheriff's Office	(575) 394-2020
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Hobbs, NM	State Police	(575) 392-5588
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Carlsbad, NM	Bureau of Land Management	(575) 887-6544
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Eunice, NM	Fire Department	(575) 394-3258
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Hobbs, NM	Fire Department	(575) 397-9308
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Hobbs, NM	Local Emergency Mgmt. Safety	(575) 397-9231
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Hobbs, NM	BBC International	(575) 393-6186
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Hobbs, NM	Schumbeager Technology	(575) 393-6186
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Hobbs, NM	Deliverance Protection	(575) 492-1234
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Apache Corporation's Representatives:

Senior Representative (Manager, Engineering & Production):

Ross Murphy
Apache Corporation
6120 South Yale Avenue
Suite 1500
Tulsa, Oklahoma 74136
(918) 491-4834

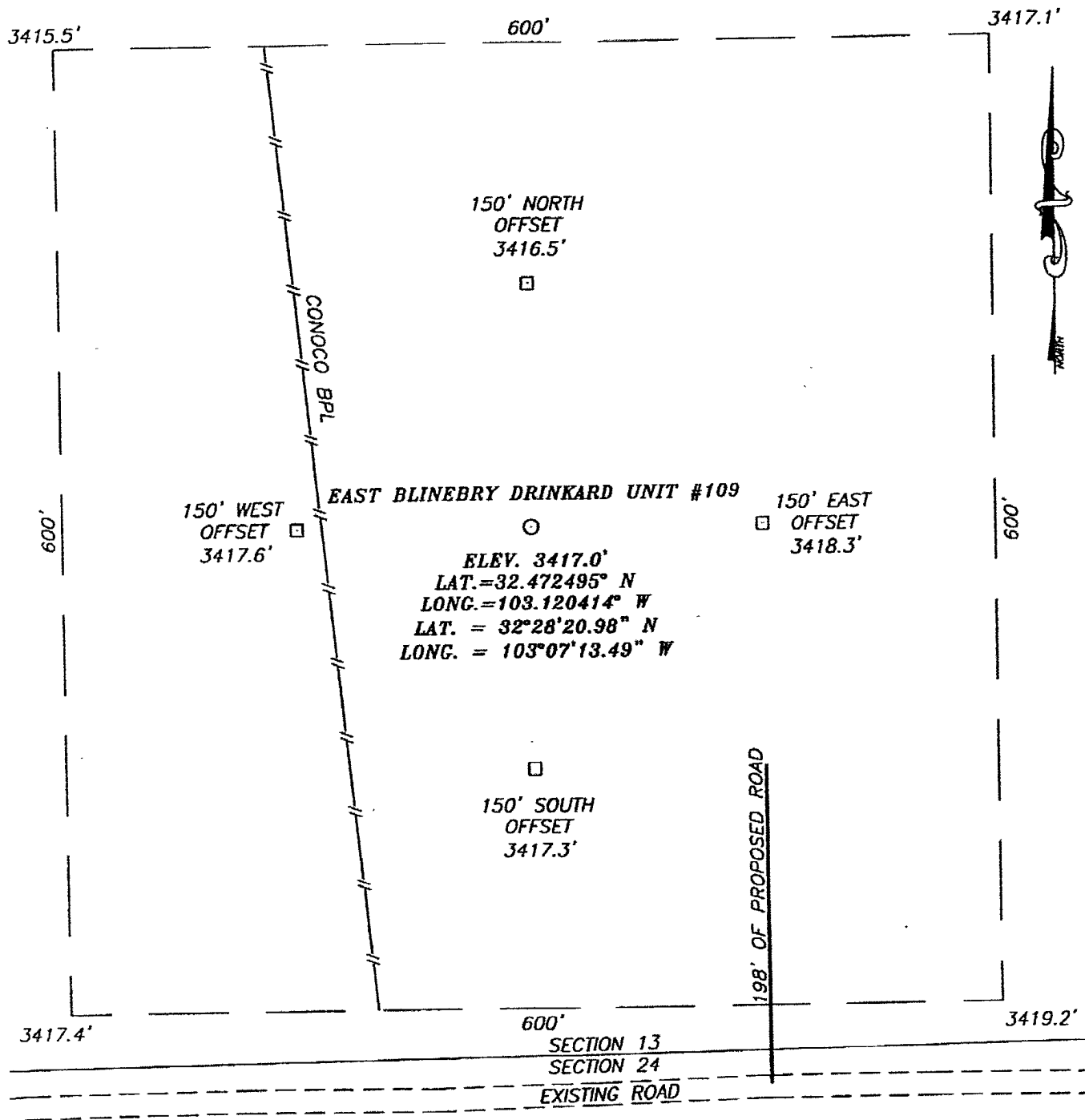
Project (Operations Engineer):

Kevin Mayes
Apache Corporation
6120 South Yale Avenue
Suite 1500
Tulsa, Oklahoma 74136
(918) 491-4972

Drilling Operations (Operations Engineer):

Sam Hampton
Apache Corporation
6120 South Yale Avenue
Suite 1500
Tulsa, Oklahoma 74136
(918) 491-4954

SECTION 13, TOWNSHIP 21 SOUTH, RANGE 37 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF STATE HWY. #18 AND
 CO. RD. E38 (JONES CITY), GO EAST ON A
 CALICHE LEASE ROAD 0.25 MILES. THIS LOCATION
 IS APPROX. 356 FEET NORTH OF LEASE ROAD.

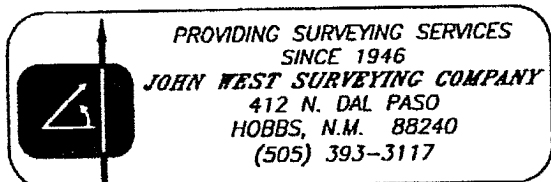
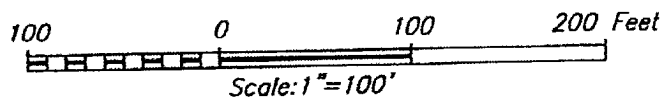


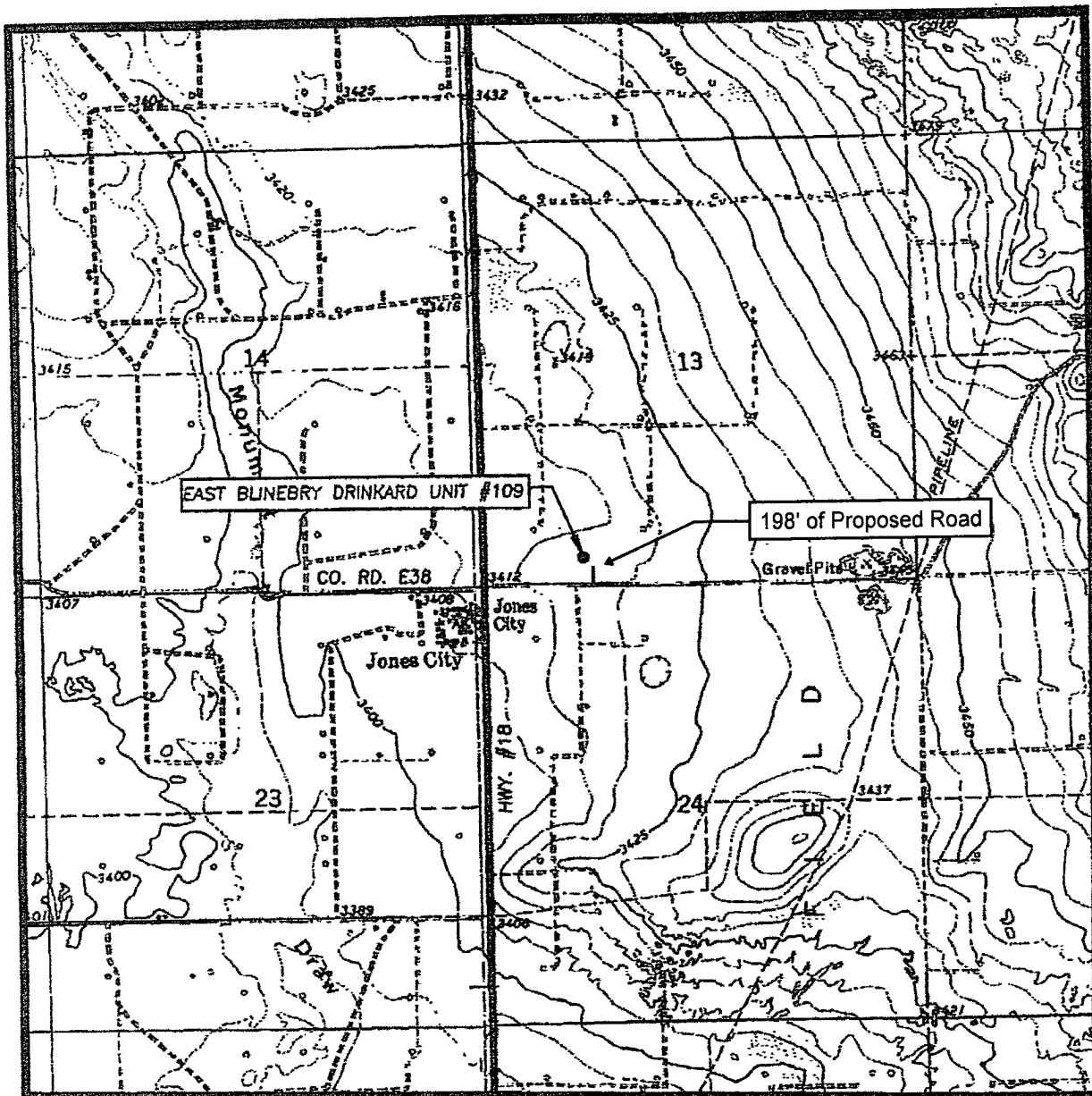
Exhibit B-2

APACHE CORPORATION

EAST BLINEBRY DRINKARD UNIT #109 WELL
 LOCATED 330 FEET FROM THE SOUTH LINE
 AND 1330 FEET FROM THE WEST LINE OF SECTION 13,
 TOWNSHIP 21 SOUTH, RANGE 37 EAST, N.M.P.M.,
 LEA COUNTY, NEW MEXICO.

Survey Date: 10/08/08	Sheet 1 of 1 Sheets
W.O. Number: 09.13.0181	Dr By: AR
Date: 2/17/09	09130181
	Scale: 1"=100'

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

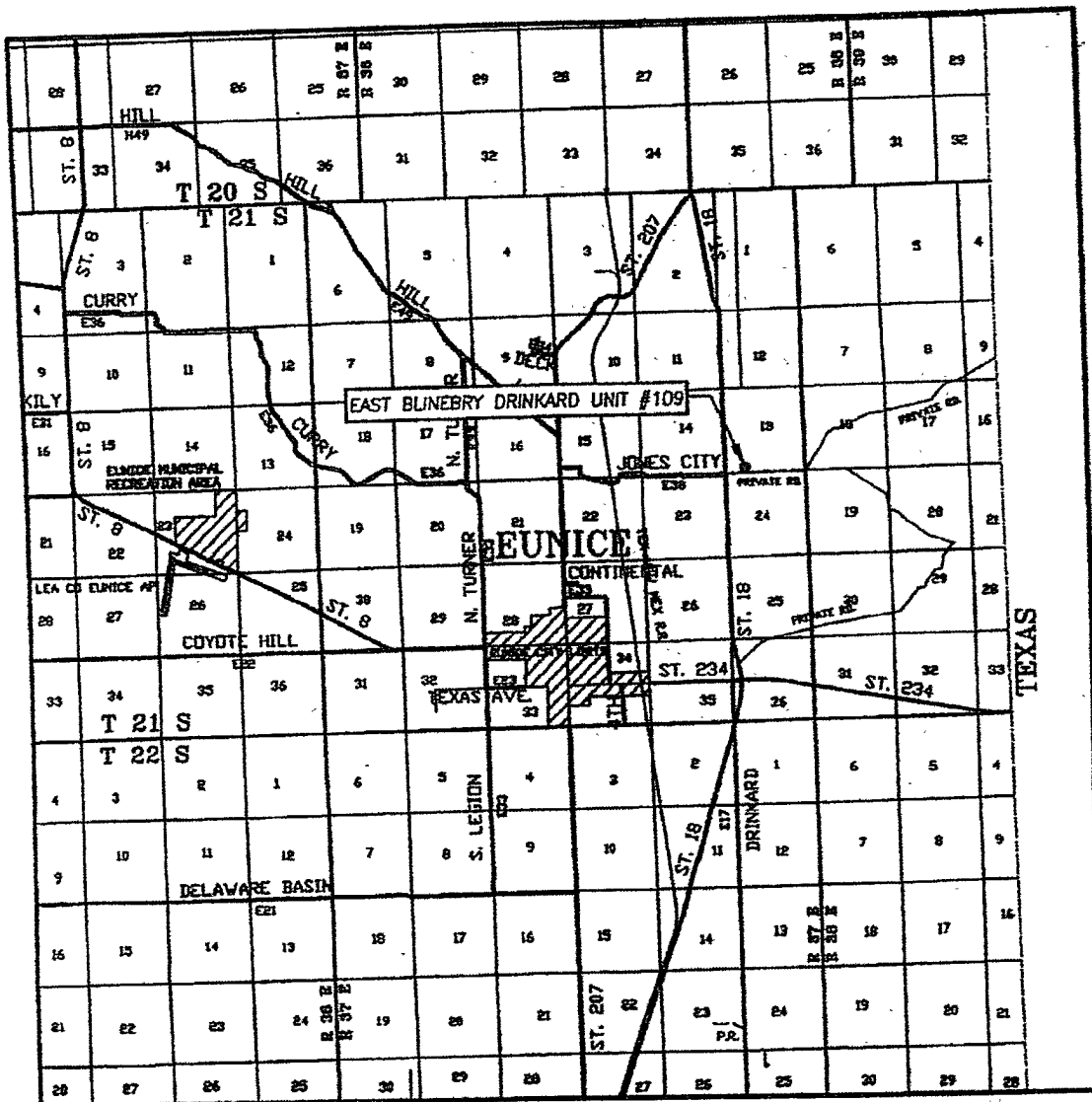
CONTOUR INTERVAL:
EUNICE NE, N.M. - 5'
EUNICE, N.M. - 10'

SEC. 13 TWP. 21-S RGE. 37-E
SURVEY N.M.P.M.
COUNTY LEA STATE NEW MEXICO
DESCRIPTION 330' FSL & 1330' FWL
ELEVATION 3417'

OPERATOR APACHE CORPORATION
LEASE EAST BLINEBRY DRINKARD UNIT
U.S.G.S. TOPOGRAPHIC MAP
EUNICE NE, N.M.

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

VICINITY MAP

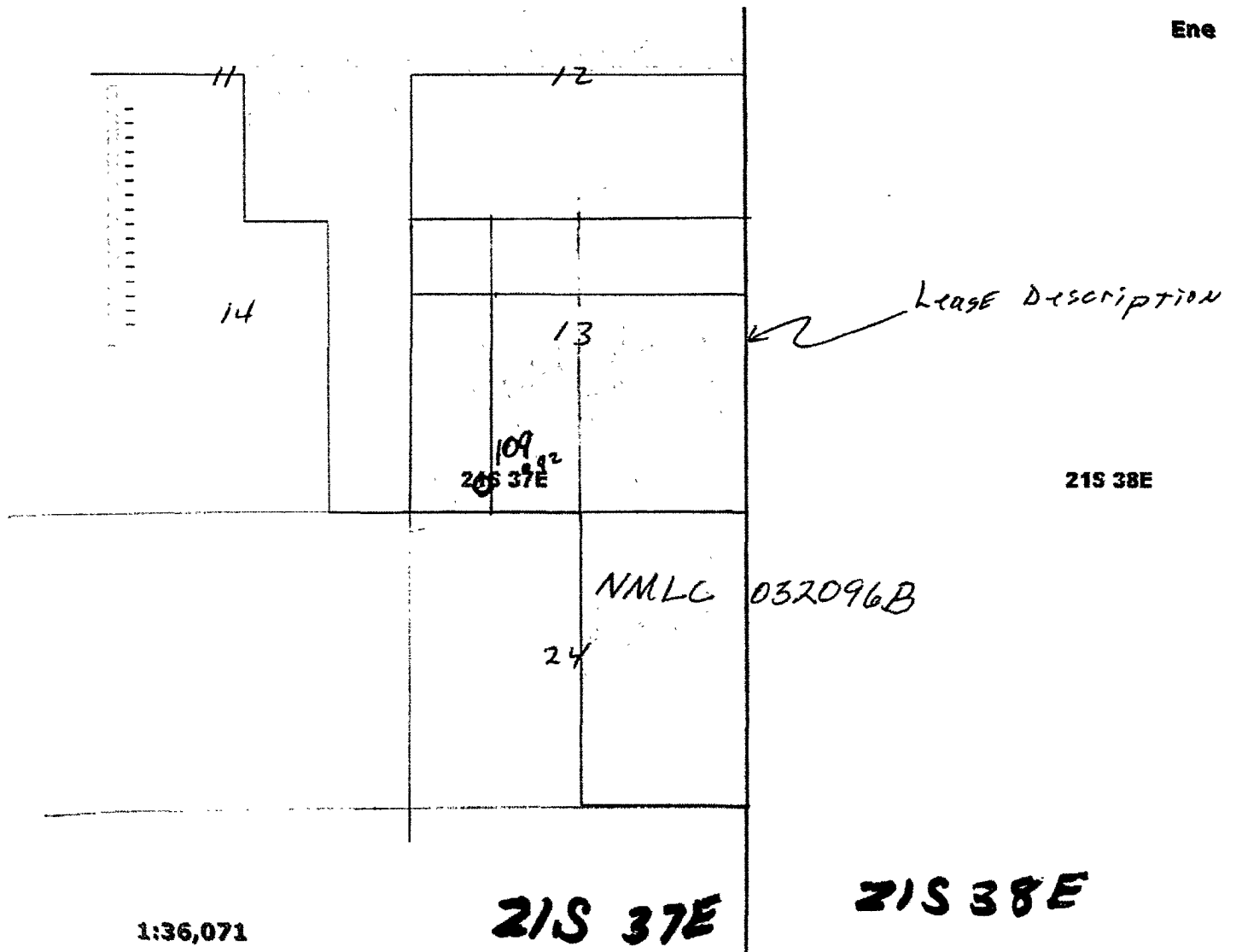


SCALE: 1" = 2 MILES

SEC. 13 TWP. 21-S RGE. 37-E
 SURVEY N.M.P.M.
 COUNTY LEA STATE NEW MEXICO
 DESCRIPTION 330' FSL & 1330' FWL
 ELEVATION 3417'
 OPERATOR APACHE CORPORATION
 LEASE EAST BLINEBRY DRINKARD UNIT

PROVIDING SURVEYING SERVICES
 SINCE 1946
JOHN WEST SURVEYING COMPANY
 412 N. DAL PASO
 HOBBS, N.M. 88240
 (505) 393-3117

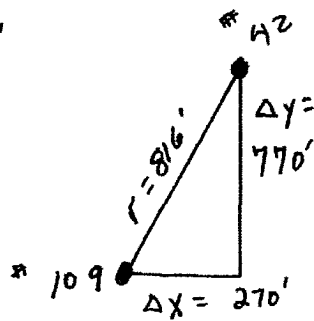
Exhibit C



#42 600'S 2100'W
 #109 330'S 1330'W

$$\Delta y = 270'$$

$$\Delta x = (2100 - 1330) = 770'$$



PUBLIC PROTECTION PLAN FOR HYDROGEN SULFIDE (H₂S)

Assumed 100 ppm Radius of Exposure (ROE) = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing 100 ppm H₂S, the first responder(s) must;

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H₂S monitors and air packs in order to safely conduct efforts to control the release.
- Use the "buddy system" to ensure no injuries during the response operations.
- Take precautions to avoid personal injury during the operation.
- Contact operator and/or local officials to aid in operations. See list of phone numbers attached.
- Have received training in the
 - a. Detection of H₂S
 - b. Measures for protection against H₂S gas
 - c. Equipment used for protection and emergency response to H₂S gas

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the New Mexico State Police may be involved. The New Mexico State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of gas.

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air = 1.0	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air = 1.0	2 ppm	N/A	1000 ppm

Contacting Authorities

Apache Corporation's personnel must liaison with local and state agencies to ensure 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 after the release. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Apache Corporation's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

(Note: Apache Corporation's Central Region Well Control Emergency Response Team should have already been notified. See Central Region Well Control Emergency Response Plan with drilling prognosis)

PUBLIC PROTECTION PLAN FOR H₂S - EMERGENCY CONTACTS

LOCATION	ENTITIY	PHONE NUMBER
	Ambulance	911
Eunice, NM	Apache Corp	(575) 394-1503
Eunice, NM	Apache Corp	(575) 394-2743
Eunice, NM	Sheriff's Office	(575) 394-2020
Hobbs, NM	State Police	(575) 392-5588
Eunice, NM	Fire Department	(575) 394-3258
Hobbs, NM	Fire Department	(575) 397-9308
Hobbs, NM	Local Emergency Mgmt. Safety	(575) 397-9231
Hobbs, NM	NM Oil Conservation Division	(575) 393-6161
Carlsbad, NM	Bureau of Land Management	(575) 887-6544
Santa Fe, NM	NM Emergency Response Commission	(505) 476-9600 24 hr, (505) 827-9126
Washington, DC	Nat'l Emergency Response Center	(800) 424-8802
Other Services		
Well Control	GSM Engineering	(806) 358-6894
Snubbing	Cudd Pressure Control	(915) 699-0139
Pumping	BJ Services	(575) 392-5556

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Apache Corporation
LEASE NO.:	LC-032096B
WELL NAME & NO.:	East Blinebry Drinkard Unit #109
SURFACE HOLE FOOTAGE:	330' FSL & 1330' FWL
BOTTOM HOLE FOOTAGE:	' F L & ' F L
LOCATION:	Section 13, T. 21 S., R 37 E., NMPM
COUNTY:	Lea 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
 - Reserve Pit – Closed-loop mud system
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - Onshore Order 6 – H2S requirements
- ☐ **Production (Post Drilling)**
- ☐ **Reserve Pit Closure/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. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Hobbs Field Station at (575) 393-3612 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

There is no measurable soil on this well pad to stockpile. No topsoil stockpile is required.

C. RESERVE PITS

The operator has applied for a closed-loop system. The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. 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. 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 thirty (30) 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

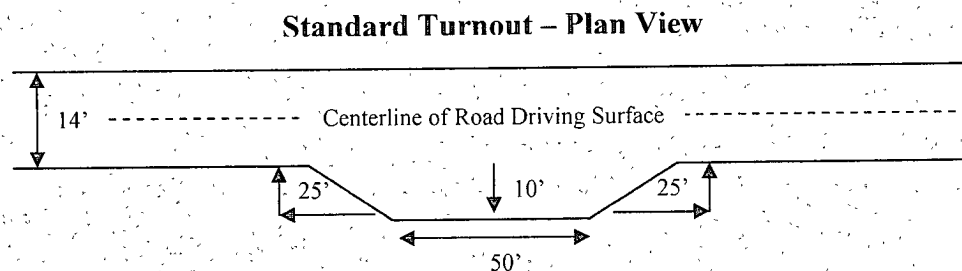
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

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 be constructed on all blind curves. Turnouts shall conform to the following diagram:

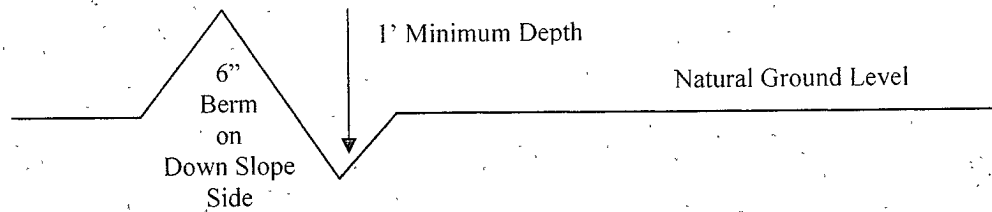


Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and inslaping, 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:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road 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 cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

Fence Requirement

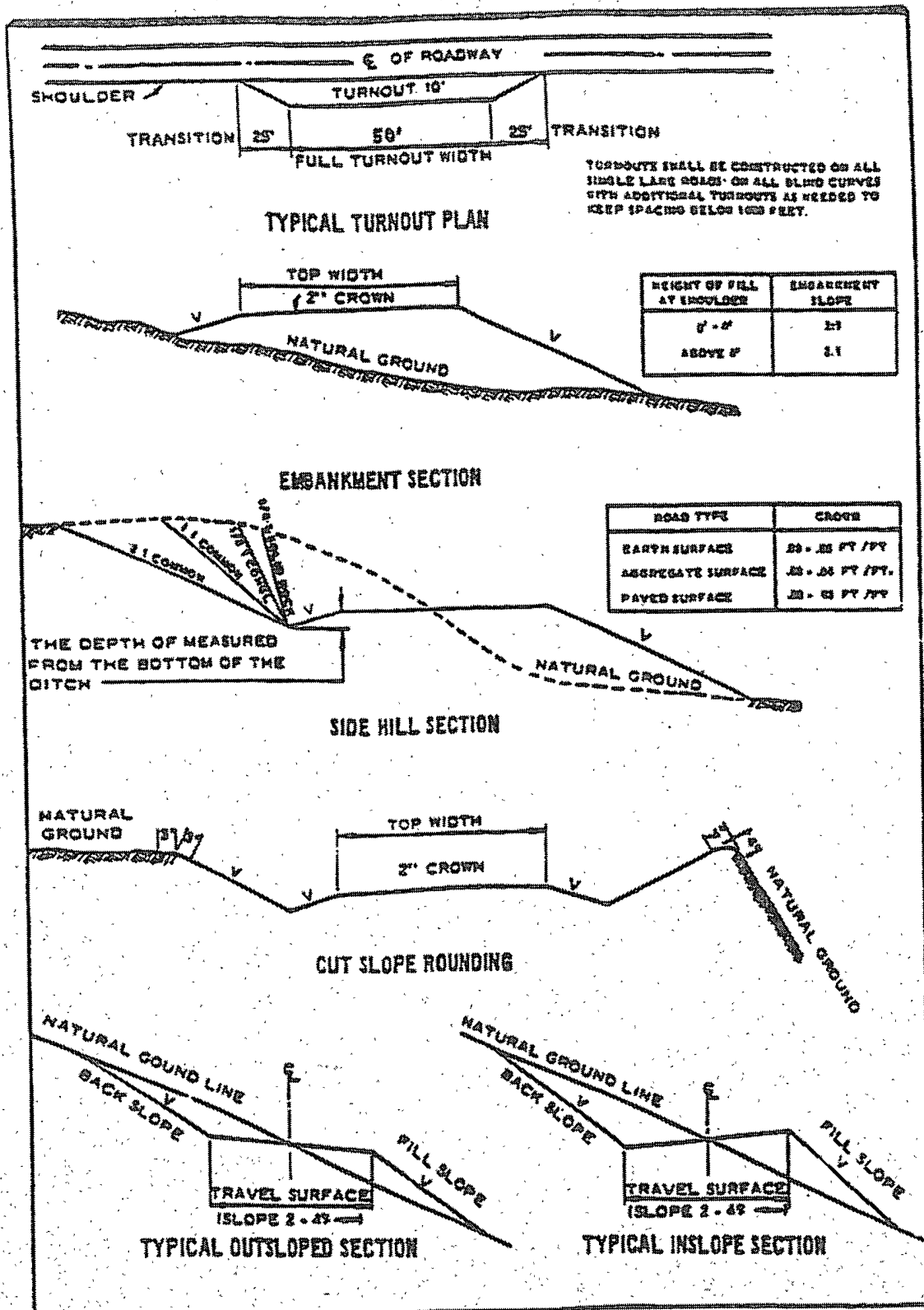
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access

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

Figure 1 – Cross Sections and Plans For Typical Road Sections



VI. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

☒ **Lea County**

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 393-3612

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

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

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

Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

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

Possible lost circulation in the Glorietta formation.

1. The **8-5/8** inch surface casing shall be **set at approximately 1400 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface.
 - 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 a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
 - 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, a remedial cement job will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.
3. 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. Operator is installing a 3M system and testing as a 2M based on bottom hole pressure gradient. 2M system approved.**
3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. The tests shall be done by an independent service company.

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

D. DRILL STEM TEST

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

RGH 040709

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.

Containment Structures

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

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, Munsell Soil Color Chart # 5Y 4/2

VIII. INTERIM RECLAMATION & RESERVE PIT CLOSURE

A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting 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.

Operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions 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 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.

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:

<u>Species</u>	<u>lb/acre</u>
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sand love grass (<i>Eragrostis trichodes</i>)	1.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

*Pounds of pure live seed:

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

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.