AFS-10-557

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Split Estate

Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No. NMLC 032096B	
6 If Indian, Allotee or Tribe Name N/A	
1a Type of work ☑ DRILL ☐ REENTER	7 If Unit or CA Agreement, Name and No EBDU
1b. Type of Well. ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☑ Multiple Zone	8 Lease Name and Well No EBDU #104 <35023>
2. Name of Operator Apache Corporation <873>	9 API Well No. 30-025-39844
3a Address 6120 S. Yale, Ste 1500, Tulsa, OK 74136 / 3b. Phone No. (include area code) 918-491-4900	10. Field and Pool, or Exploratory North Eunice, BTD <22900>
4 Location of Well (Report location clearly and in accordance with any State requirements.*) At surface 2630' ~~FNL~~ FSL 2630' ~~FWL~~ FEL SEC 13 T21S R37E UL J At proposed prod zone Same	11 Sec., T. R. M. or Blk and Survey or Area SEC 13 T21S R37E UL J
14 Distance in miles and direction from nearest town or post-office* Approx. 3.5 mi NE of Eunice, NM	12 County or Parish Lea / 13 State NM
15 Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg unit line, if any) 2630'	16 No. of acres in lease 1920 / 17 Spacing Unit dedicated to this well 20 acres
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 979' +/-	19 Proposed Depth 7200' / 20. BLM/BIA Bond No. on file CO-1463 Nation Wide
21 Elevations (Show whether DF, KDB, RT, GL, etc.) 3431' GL	22 Approximate date work will start* 08/18/2010 / 23. Estimated duration 7 days

24. Attachments

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

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

25 Signature	Name (Printed Typed)	Date
Sam Shoun	SAMUEL SHOUN	4/26/2010

Title: Drilling Engineer

Approved by (Signature)	Name (Printed/Typed)	Date
/S/ Jeannette A. Martinez		
Title: for 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

*(Instructions on page 2)

KZ

CAPITAN CONTROLLED WATER BASIN

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

RECEIVED

JUL 26 2010

HOBBSOCD

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

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

State of New Mexico
Energy, Minerals and Natural Resources Department

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 – 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
30-025-39844	22900	Eunice Blinebry-Tubb-Drinkard, North

Property Code	Property Name	Well Number
35023	EAST BLINEBRY DRINKARD UNIT	104

OGRID No.	Operator Name	Elevation
873	APACHE CORPORATION	3431'

Surface Location

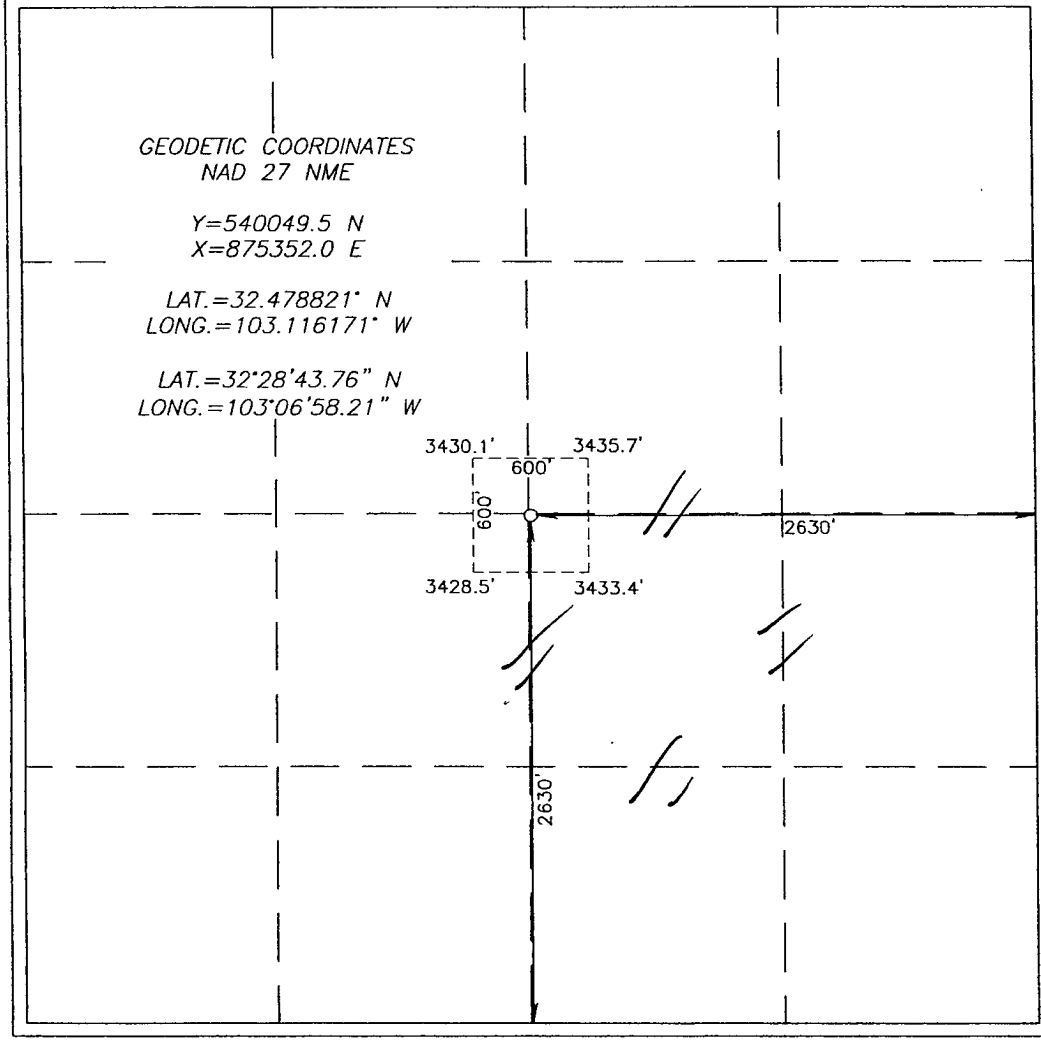
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	13	21-S	37-E		2630	SOUTH	2630	EAST	LEA

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

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

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



OPERATOR CERTIFICATION

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.

Signature 4/26/2010 Date

Samuel Shoun
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

FEBRUARY 17, 2010
Date Surveyed

Signature & Seal of Professional Surveyor

GARY G. EIDSON
NEW MEXICO
12641
REGISTERED PROFESSIONAL SURVEYOR

2/25/10

10.11.0226

Certificate No. GARY EIDSON 12641
RONALD J. EIDSON 3239

East Blinebry Drinkard Unit 104
DRILLING PLAN

Surface Location

2630' FSL, 2630' FEL
SE 1/4 of Section 13, Township 21 South, Range 37 East, UL J
Lea County, New Mexico

DRILLING PROGRAM

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

2. **Estimated Tops of Geological Markers:**

FORMATION	DEPTH
Quaternary alluvials	Surface
Rustler	1438'
Yates	2750'
Seven Rivers	3010'
Queen	3500'
Grayburg	3888'
San Andres	4121'
Glorieta	5368'
Blinebry	5800'
Tubb	6265'
Drinkard	6565'
ABO	6884'
TD	7200'

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

SUBSTANCE	DEPTH
Oil	Blinebry @ 5800'
	Tubb @ 6265'
	Drinkard @ 6565'
Gas	Seven Rivers @ 3010'
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:**

HOLE SIZE	CASING SIZE OD / ID	GRADE	WEIGHT PER FOOT	DEPTH LENGTH	SACKS CEMENT	ESTIMATED TOC - REMARKS
12 ¼"	8 5/8" 8.097"	J55 STC	24#	1,490'	700	TOC – Surface Float collar at 1,447
		Safety Factors	Clps.- 1.99 Brst - 4.28 Ten.J- 6.82			8.9 ppg Water-based Mud; 89 ° F Est. Static Temp; 83 ° F Est. Circ. Temp.
7 7/8"	5 ½" 4.892"	J-55 LTC	17#	1000-7,200'	1235	Included with above.
		L-80	17#	1000		TOC-Surface
		17 #J-55 LTC Safety Factors	Clps.-1.30 Brst.-1.41 Ten.J-2.34			Float collar @ 7,157 Brine mud 10.1 ppg 111° F est Static Temp 100° F est Circ Temp
		17 #L-80* LTC Safety Factors	Clps.- 11.98 Brst.- 3.12 Ten.J- 2.76			

All casing will be new and API approved. * L-80 Run on top for possible completion pressures.

4. **Proposed Cement Program:**

CASING	LEAD SLURRY	TAIL SLURRY	DISPLACEMENT
8 5/8"	500 sacks 35:65 Poz C Cmt + 3% bwoc CaCl + 0.25 lbs/sack Cello Flake + 6% bwoc Bentonite Gel	200 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake	98 bbls Fresh Water @ 8.33 ppg
	Slurry Weight 12.7 ppg	Slurry Weight (ppg) 14.8	
	Slurry yield 1.88 cf/sack	Slurry Yield (cf/sack) 1.35	
	Mix Water 10.7 gps	Mix Water (gps) 6.35	
	846 cuft or 150.7 bbls	270 cuft or 48.1 bbls	
	Estimated Pumping Time – 70 BC (HH:MM) 5:00	Estimated Pumping Time – 70 BC (HH:MM)-3:15	

8 5/8" Casing: Volume Calculations:

1,490 ft	x	0.4127 cf/ft	with 100% excess	=	1229.8 cf
43 ft	x	0.3576 cf/ft	with 0% excess	=	15.4cf (inside pipe)
		TOTAL SLURRY VOLUME		=	1245.2 cf
				=	221.8 bbls
			Plan	=	225.0 bbls

Spacer 20.0 bbls Water @ 8.33 ppg

CASING	LEAD SLURRY	TAIL SLURRY	DISPLACEMENT
5 ½"	925 sacks (35:65) Poz: Class	310 sacks (50:50) Poz :Class C	167 bbls 2% Kcl

C Cement + 5% bwow Sodium Chloride + 0.13 lbs/sack Cello Flake + 3 lbs/sk LCM-1 + 6% bwoc Bentonite + 0.5% bwoc BA-10A + 0.5% bwoc FL-52A	Cement + 5% bwow Sodium Chloride + 0.13 lb/sk Cello Flake +3 lbs/sk LCM-1 + 2% bwoc Bentonite + 0.2%bwoc Sodium Metasilicate + 0.45% bwoc FL-52A	Water @ 8.43 ppg
Slurry Weight (ppg) 12.8	Slurry Weight (ppg) 14.2	
Slurry Yield (cf/sack) 1.90	Slurry Yield (cf/sack) 1.30	
Mix Water (gps) 9.83;	Mix Water (gps) 5.59;	
1,710 cuft or 304.5 bbls	390 cuft or 69.5 bbls	
Estimated Pumping Time 70 BC (HH:MM) 4:34	Estimated Pumping Time – 70 BC (HH:MM)-3:41	

5 ½" Casing: Volume Calculations:

1,490 ft	x	0.1926 cf/ft	with	0% excess	=	287.0 cf
4,210 ft	x	0.1733 cf/ft	with	100% excess	=	1459.2 cf
1,500 ft	x	0.1733 cf/ft	with	40% excess	=	363.9 cf
43 ft	x	0.1305 cf/ft	with	0% excess	=	5.6 cf(inside pipe)
	TOTAL SLURRY VOLUME				=	2115.7 cf
					=	376.8 bbls
				Plan	=	385 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:**

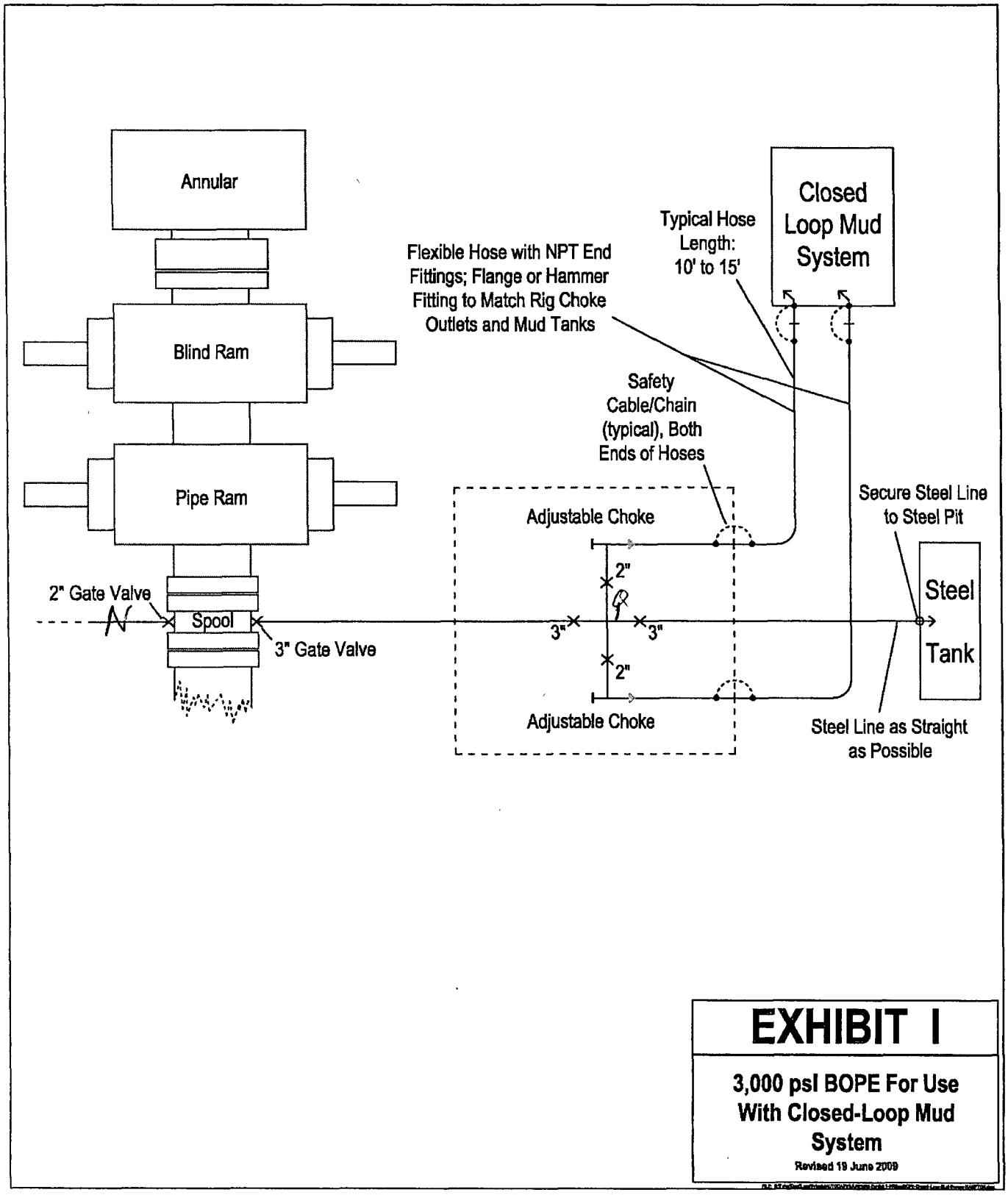
Will install on the 8 5/8" surface casing a 9" x 3000 psi WP Double Ram BOP with Annular, and will test using a 3rd party tester before drilling out of surface casing. **As maximum anticipated surface pressures do not exceed 2,000 psi, we will test the BOPE as a 2,000 psi system.** Bottom hole pressure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

Bottom Hole Pressure Calculations

The maximum anticipated bottom hole pressure is calculated by multiplying the depth of the well by 0.44 psi/ft. The maximum anticipated surface pressure is calculated assuming a partially evacuated hole with a pressure gradient of 0.22 psi/ft.

For the EBDU #104 the maximum anticipated bottom hole pressure is 7200 x 0.44 psi/ft=3168 psi.

The maximum anticipated surface pressure for the EBDU #104 assuming a partially evacuated hole is 7,200' x 0.22 psi/ft = 1584 psi.


Annular
Blind Ram
Pipe Ram
2" Gate Valve
Spool
3" Gate Valve
Flexible Hose with NPT End Fittings; Flange or Hammer Fitting to Match Rig Choke Outlets and Mud Tanks
Typical Hose Length: 10' to 15'
Closed Loop Mud System
Safety Cable/Chain (typical), Both Ends of Hoses
Adjustable Choke
2"
3"
3"
2"
Adjustable Choke
Secure Steel Line to Steel Pit
Steel Tank
Steel Line as Straight as Possible
EXHIBIT I
3,000 psi BOPE For Use With Closed-Loop Mud System
Revised 19 June 2009

6. **Proposed Mud Program**

DEPTH	MUD PROPERTIES	REMARKS
0 – 1,490'	Weight: 8.6 – 9.2 ppg Viscosity: 34 – 36 sec/qt pH: NC Filtrate: NC	Spud with a Conventional New Gel/Lime "Spud mud". Use NewGel 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. At TD of interval, mix in pre-mix pit, 100 barrels of system fluid, NewGel viscosity of 60 sec/100cc, add 0.25 ppb of Super Sweep.
1,490' – 7,000'	Weight: 9.0 – 10.4 ppg Viscosity: 32 – 34 sec/qt pH: NC 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. Mix one gallon of New-55 at flowline every 250 feet drilled to promote solids settling. Sweep hole with 3-ppb of Super Sweep every 500 feet.
7,000' – TD	Weight: 10.0 – 10.4 ppg Viscosity: 34 – 36 sec/qt pH: 9-10 Filtrate: 15-20 cm/30 min	From 7,000' to Total Depth, it is recommended the system be restricted to the working pits. Adjust and maintain pH with Caustic Soda. Treat system with Newcide to prevent bacterial degradation of organic materials. Mix Starch (yellow) to control API filtrate at <15cc-20cc.

7. **Auxiliary Well Control and Monitoring Equipment:**

a. 4 1/2" x 3000 psi Kelly valve
b. H_2S detection equipment will be rigged up and functional and breathing apparatus will be on location before drilling out of 8 5/8" surface casing.

8. **Evaluation Program:** See COA

Open Hole Logging:

The following logs may be run:

CNL, Litho Density, GR, CAL, Dual Laterolog/MSFL, Sonic from TD-1490'
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 3,168 psi, estimated BHT is 111°F. No H_2S is anticipated. See Public Protection Plan for Hydrogen Sulfide (H_2S) attached.

Sundry

10. **Anticipated Starting Date:**

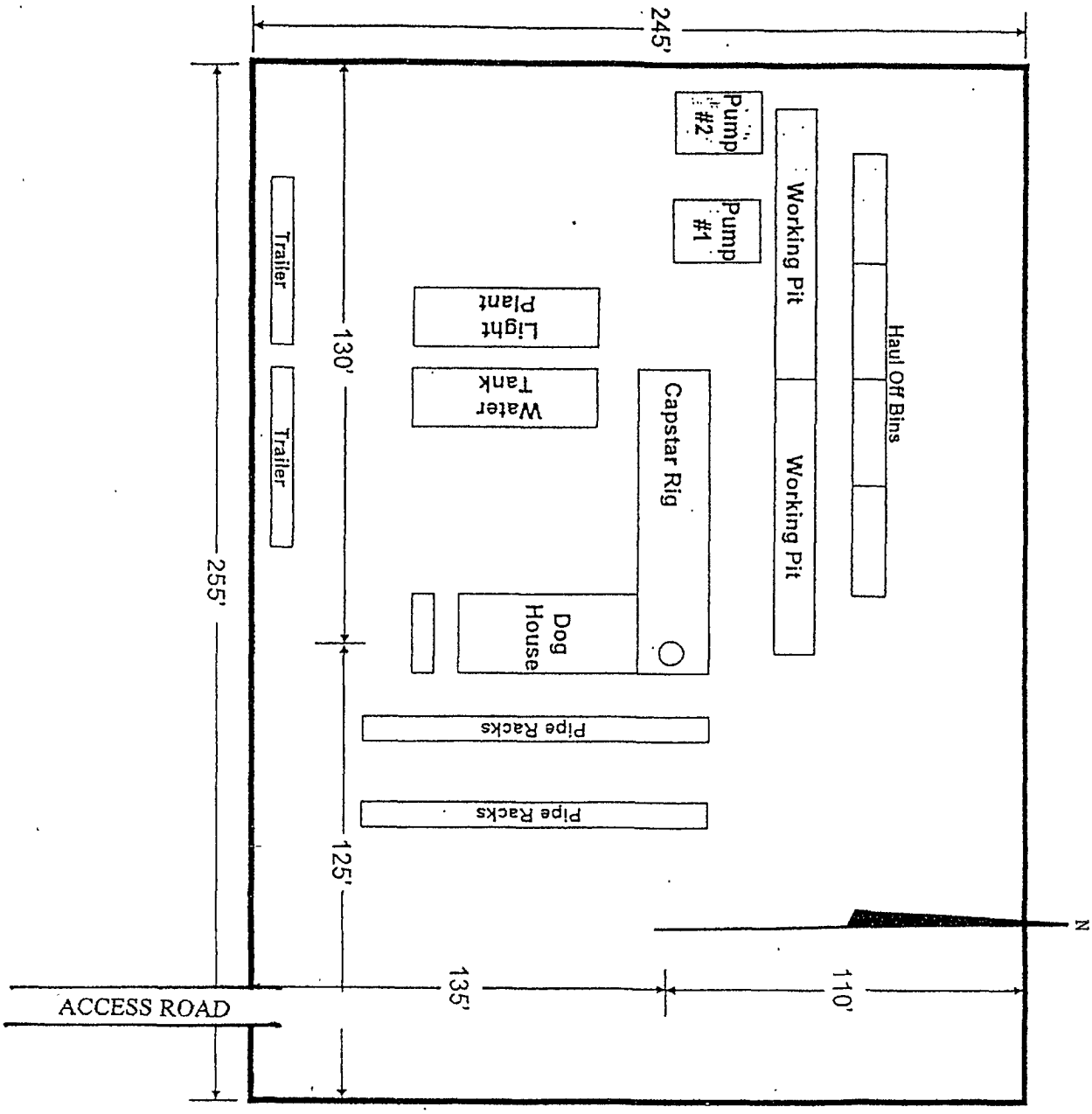
Road and location construction will begin after the BLM has approved the APD, the NMOCD has issued a drilling permit, and Apache Corporation management determines the well to be economically advantageous to drill. Drilling will begin when a rig becomes available following completion of the location construction and access roads.

Representative and Emergency Contacts

Senior Representative (Manager, Engineering & Production):
Ross Murphy
Apache Corporation
6120 South Yale Avenue
Suite 1500
Tulsa, Oklahoma 74136
(918) 491-4834

Project (Operations Engineer):
Darrin Steed
Apache Corporation
6120 South Yale Avenue
Suite 1500
Tulsa, Oklahoma 74136
(918) 491-4842

Drilling Operations (Operations Engineer):
Samuel Shoun
Apache Corporation
6120 South Yale Avenue
Suite 1500
Tulsa, Oklahoma 74136
(918) 491-4865



RIG LAY OUT PLAT

APACHE CORPORATION

EXHIBIT 'E'