HJ-01-216

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Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Split Estate

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. LC-031741-A

6. If Indian, Allotee or Tribe Name ----------

1a. Type of work: [X] DRILL [ ] REENTER

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

1b. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other [X] Single Zone [ ] Multiple Zone

8. Lease Name and Well No. (31036) HAWK "A-5" # 4

2. Name of Operator APACHE CORPORATION (LANA WILLIAMS (873) 918-491-4980)

9. API Well No. 30-025-39390

3a. Address 6120 SOUTH YALE SUITE 1500 TULSA, OKLAHOMA 74136-4224

3b. Phone No. (include area code) 918-491-4980

10. Field and Pool, or Exploratory BLINEBRY OIL & GAS

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

At surface 450' FSL & 450' FEL SECTION 5 T21S-R37E LEA CO.

At proposed prod. zone Same Unit P

11. Sec., T. R. M. or Blk. and Survey or Area SECTION 5 T21S-R37E

14. Distance in miles and direction from nearest town or post office* Approximately 3 miles Northwest of Eunice New Mexico

12. County or Parish LEA CO.

13. State NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 450'

16. No. of acres in lease 560

17. Spacing Unit dedicated to this well 40

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1100'

19. Proposed Depth 7025'

20. BLM/BIA Bond No. on file BLM-CO-1463 NATION WIDE

21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3494' GL

22. Approximate date work will start* WHEN APPROVED

23. Estimated duration 28 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 Joe T. Janica — Name (Printed/Typed) Joe T. Janica — Date 02/27/09

Title Permit Engineer

Approved by (Signature) /s/ James Stovall — Name (Printed/Typed) /s/ James Stovall — Date APR 13 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.

*(Instructions on page 2)

KZ

Capitan Controlled Water Basin

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

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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
30-025-39390	6660	BLINEBRY OIL & GAS

Property Code	Property Name	Well Number
31036	HAWK A-5	4

OGRID No.	Operator Name	Elevation
873	APACHE CORPORATION	3494'

Surface Location

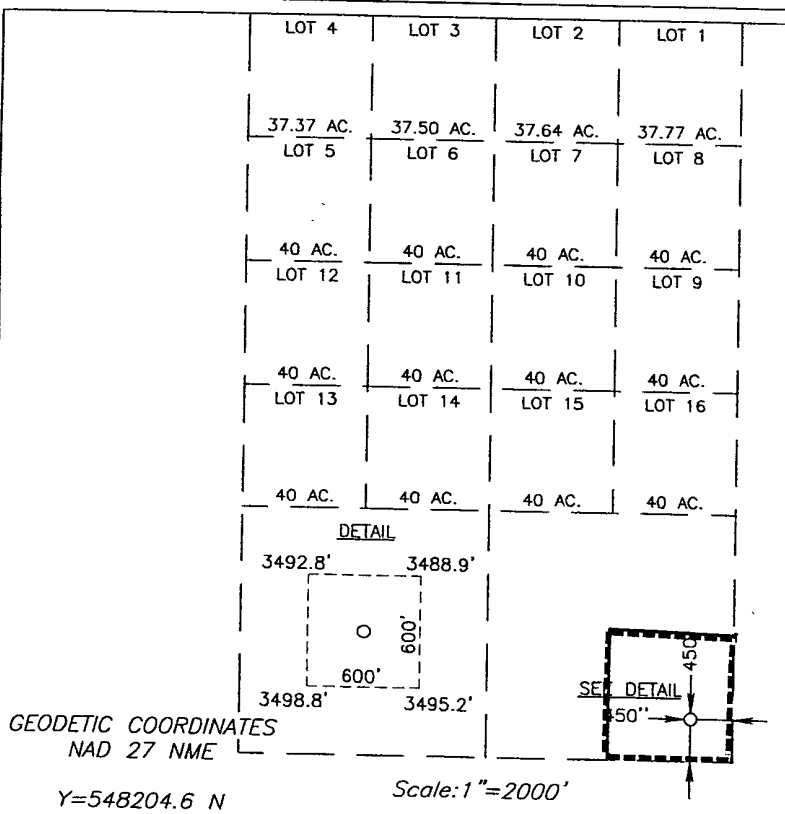
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	5	21-S	37-E		450	SOUTH	450	EAST	LEA

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



GEODETIC COORDINATES
NAD 27 NME

Y=548204.6 N
X=856325.0 E

LAT.=32.501816° N
LONG.=103.177572° W

LAT.=32°30'06.54" N
LONG.=103°10'39.26" W

Scale: 1"=2000'

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 — Date

Joe T. Janica — 02/27/09

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.

RONALD J. EIDSON
OCTOBER 10, 2008

Date Surveyed

Signature & Seal of Professional Surveyor

Ronald J. Eidson 10/17/08

08.11.1569

Certificate No. GARY EIDSON 12641
RONALD J. EIDSON 3239

EXHIBIT "A"

RECEIVED
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WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
30-025-39390	19190	DRINKARD

Property Code	Property Name	Well Number
31036	HAWK A-5	4

OGRID No.	Operator Name	Elevation
873	APACHE CORPORATION	3494'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	5	21-S	37-E		450	SOUTH	450	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			

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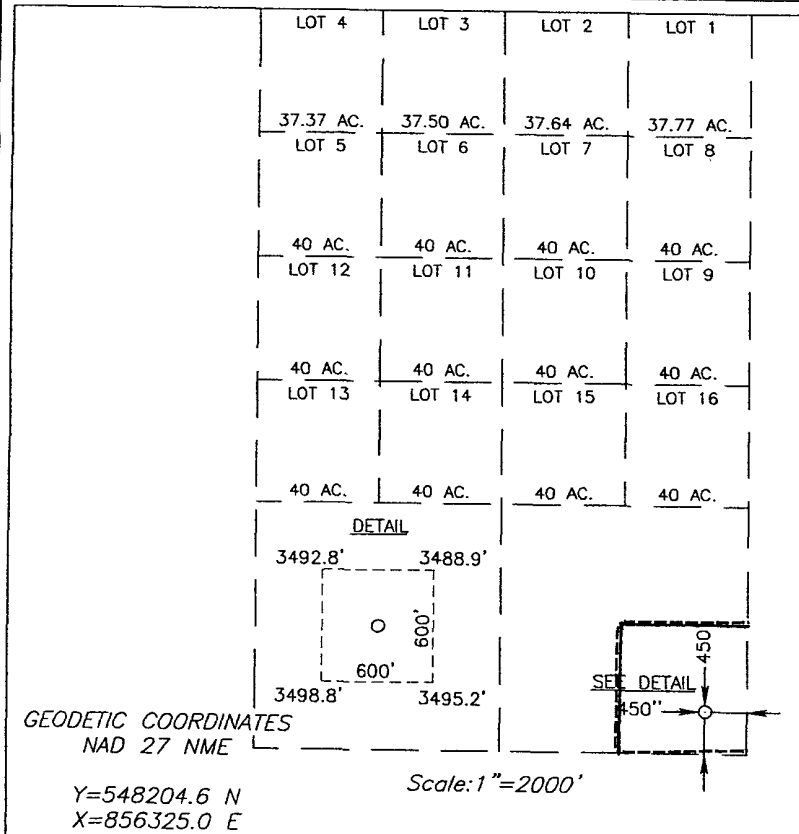

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Signature Date

Joe T. Janica 02/27/09

Printed Name

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OCTOBER 10, 2008

Date Surveyed AR

Signature & Seal of Professional Surveyor

Ronald J. Eidson 10/17/08

NEW MEXICO 3239 REGISTERED PROFESSIONAL SURVEYOR

08.11.1569

Certificate No. GARY EIDSON 12641
RONALD J. EIDSON 3239

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WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
30-025-39390	60240	TUBB OIL & GAS

Property Code	Property Name	Well Number
31036	HAWK A-5	4

OGRID No.	Operator Name	Elevation
873	APACHE CORPORATION	3494'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	5	21-S	37-E		450	SOUTH	450	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			

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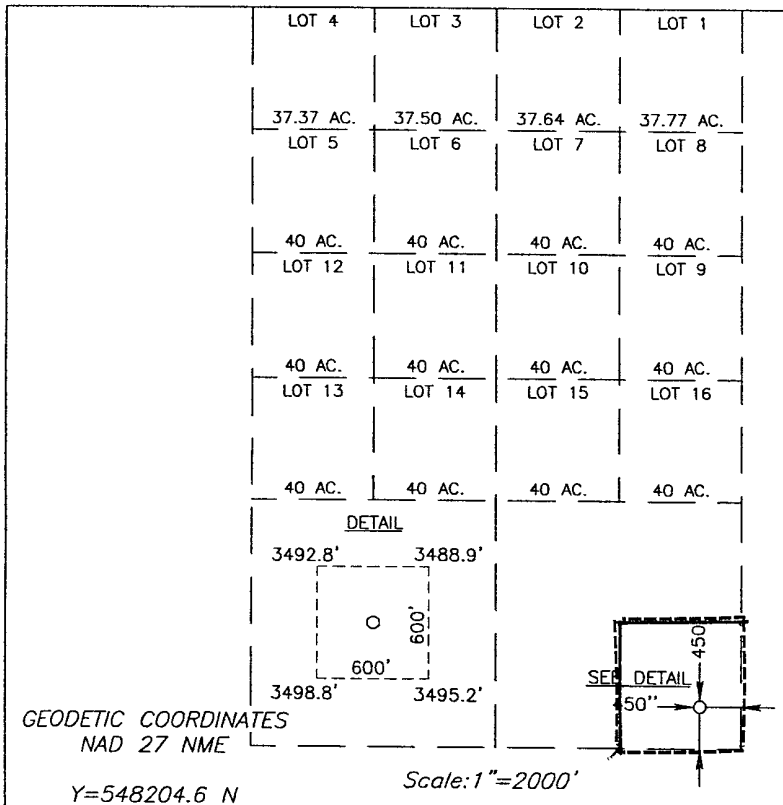

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Joe T Janica
Signature

02/27/09
Date

Joe T Janica
Printed Name

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OCTOBER 10, 2008
Date Surveyed

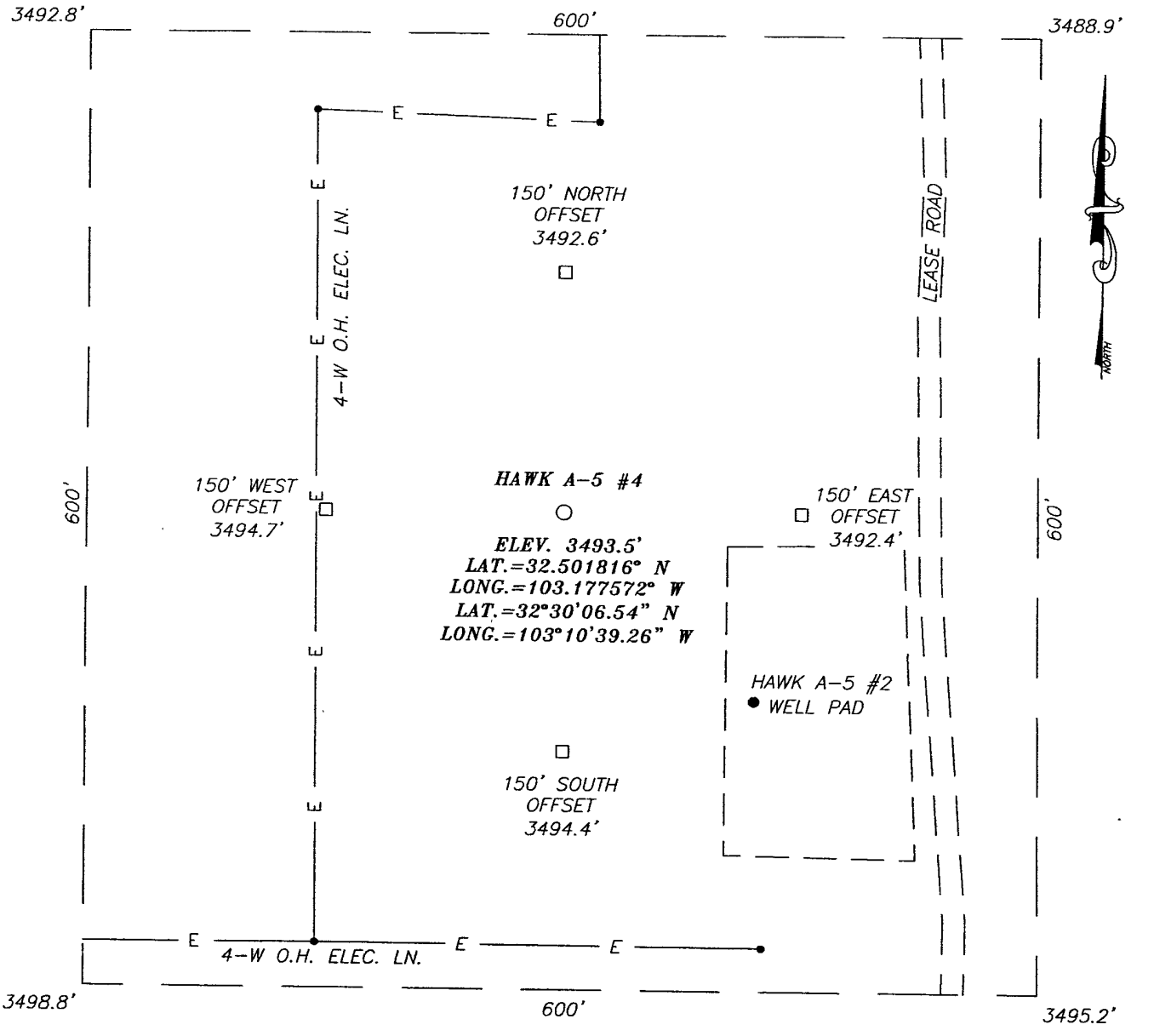
Signature & Seal of Professional Surveyor

Ronald J. Eidson 10/17/08

Certificate No. GARY EIDSON 12641
RONALD J. EIDSON 3239

SECTION 5, TOWNSHIP 21 SOUTH, RANGE 37 EAST, N.M.P.M.,

LEA COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF CO. RD. #E-33 (TURNER ROAD) AND CO. RD. #E-49 (HILL ROAD), GO NORTHWEST ON HILL ROAD APPROX. 0.6 MILES. TURN RIGHT AND GO EAST APPROX. 0.45 MILES. TURN LEFT AND GO NORTH APPROX. 0.1 MILE. THIS LOCATION IS WEST OF ROAD APPROX. 216 FEET.

100 0 100 200 Feet

Scale:1"=100'

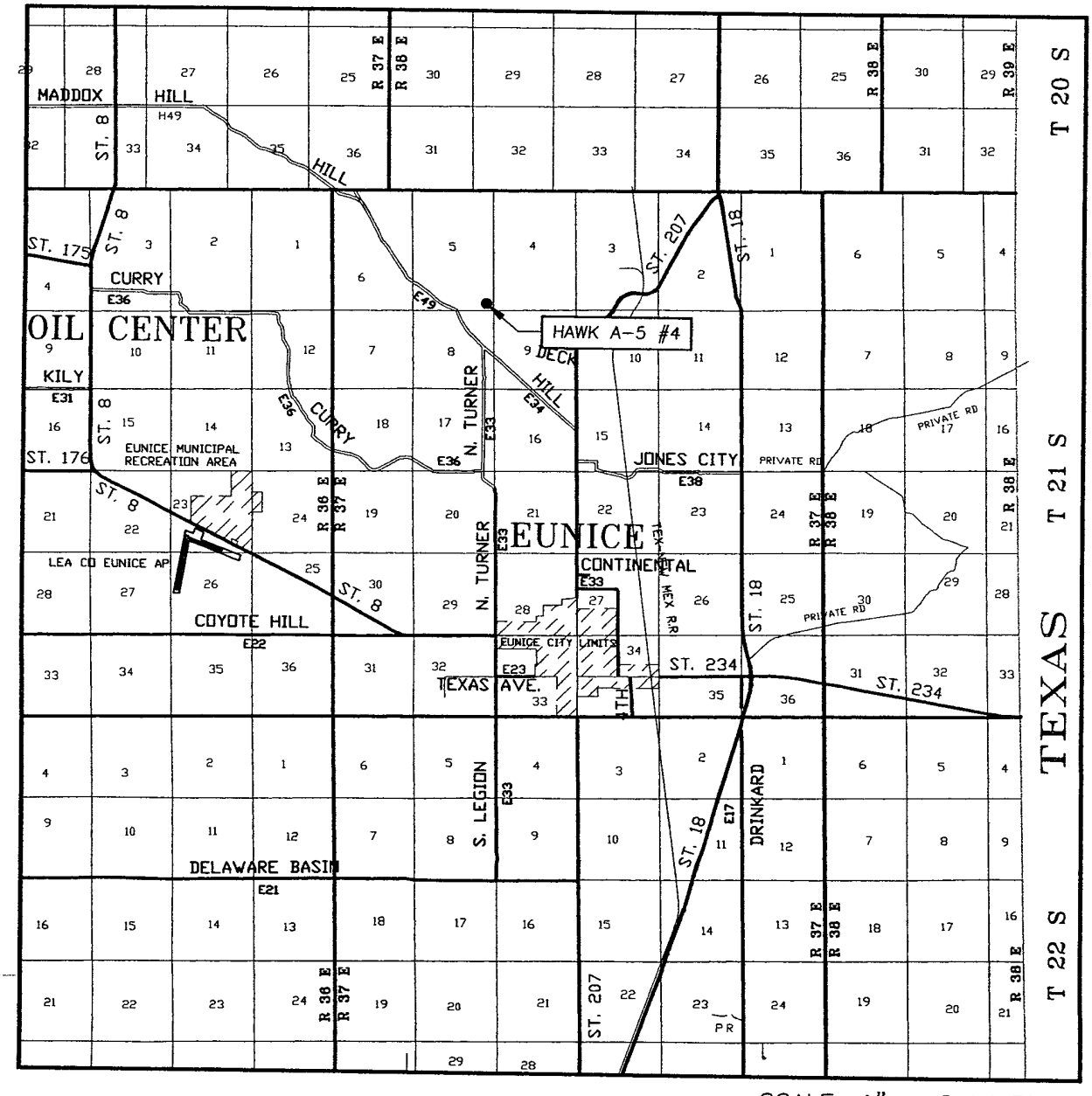
PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

APACHE CORPORATION

HAWK A-5 #4 WELL
LOCATED 450 FEET FROM THE SOUTH LINE
AND 450 FEET FROM THE EAST LINE OF SECTION 5,
TOWNSHIP 21 SOUTH, RANGE 37 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.

Survey Date: 10/10/08	Sheet 1 of 1 Sheets		
W.O. Number: 08.11.1569	Dr By: AR		Rev 1:N/A
Date: 10/15/08	Disk:	08111569	Scale:1"=100'

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 5 TWP. 21-S RGE. 37-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 450' FSL & 450' FEL

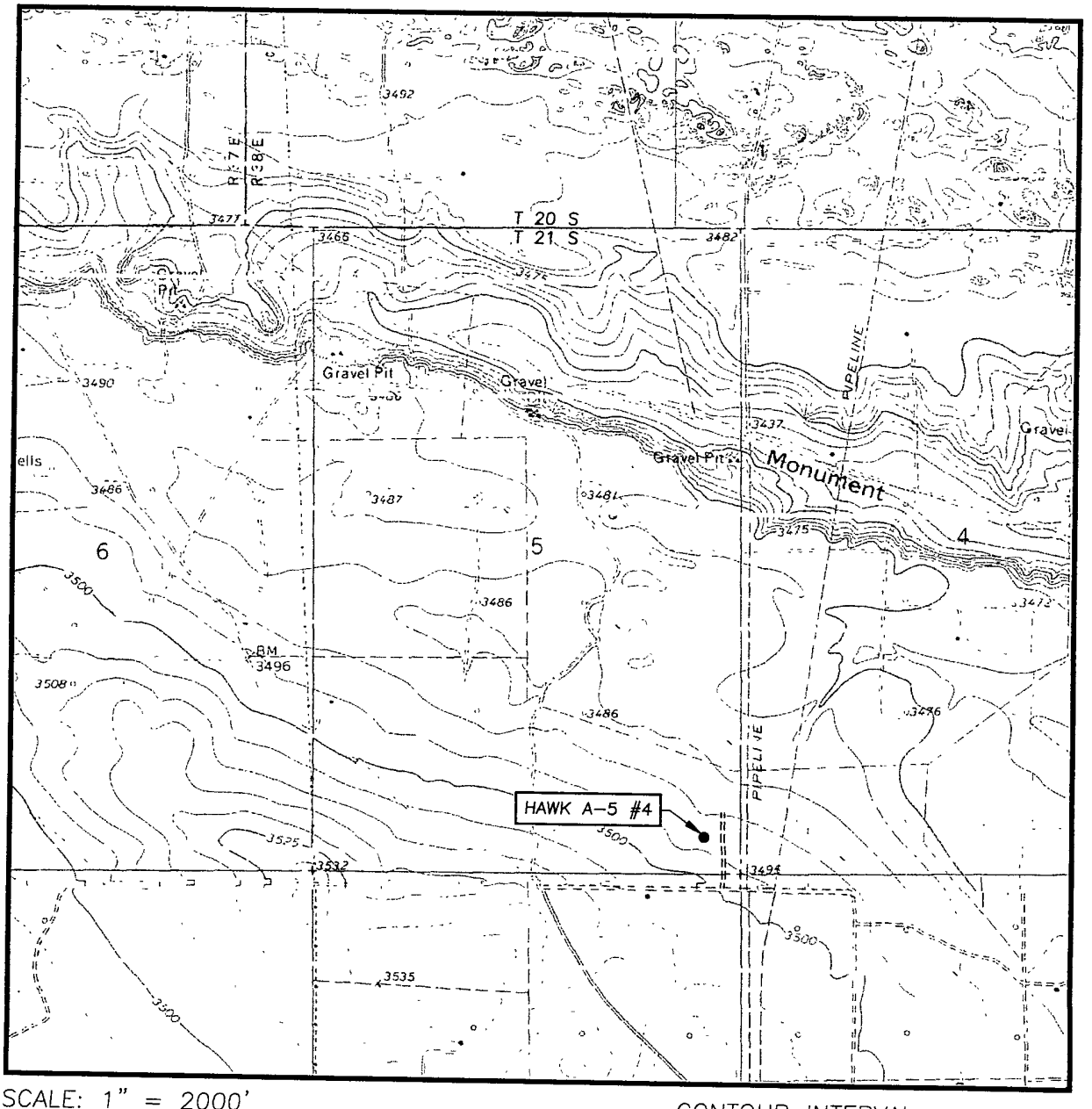
ELEVATION 3494'

OPERATOR APACHE CORPORATION

LEASE HAWK A-5

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

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
EUNICE, N.M. – 10'
HOBBS SW, N.M. – 5'

SEC. 5 TWP. 21-S RGE. 37-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 450' FSL & 450' FEL

ELEVATION 3494'

OPERATOR APACHE CORPORATION

LEASE HAWK A-5

U.S.G.S. TOPOGRAPHIC MAP
HOBBS SW, N.M.

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

APPLICATION TO DRILL

APACHE CORPORATION
HAWK "A-5" # 4
UNIT "P" SECTION 5
T21S-R37E LEA CO. NM

In response to questions asked under Section II of Bulliten NTL-6, the following information on the above will be provided.

1. LOCATION: 450' FSL & 450' FEL SECTION 5 T21S- R37E LEA CO. NM

2. ELEVATION ABOVE SEA LEVEL: 3494' GL

3. GEOLOGICAL NAME OF SURFACE FORMATION: Quaternery Aeolian Deposits.

4. DRILLING TOOLS AND ASSOCIATED EQUIPMENT: Conventional rotary drilling rig using drilling mud as a circulating medium for solids removal from hole.

5. PROPOSED DRILLING DEPTH: 7025'

6. ESTIMATED TOPS OF GEOLOGICAL FORMATIONS:

Rustler Anhydrite	1306'	San Andres	4080'	Drinkard	6601'
Yates	2723'	Glorieta	5259'	Abo	6854'
Queen	3497'	Blinebry	5724'	TD	7025'
Grayburg	3793'	Tubb	6241'		

7. POSSIBLE MINERAL BEARING FORMATIONS:

Blinebry	oil
Tubb	oil
Drinkard	oil

8. CASING PROGRAM:

HOLE SIZE	INTERVAL	OD OF CASING	WEIGHT	THREAD	COLLAR	GRADE	CONDITION
26"	0-40'	20"	NA	NA	NA	Conductor	New
12¼"	0-1350'	8 5/8"	24#	8-R	ST&C	J-55	New
7 7/8"	0-7025'	5½"	17#	8-R	LT&C	J-55	New

Casign design factors:

Collapse	1.125	Burst	1.0	Body Yield	1.5	Joint Strength 8-R	1.8
						Buttress	1.6

9. CASING SETTING DEPTHS AND CEMENTING:

20"	Conductor	Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
8 5/8"	Surface	Run and set 1350' of 8 5/8" 24# J-55 ST&C casing. Cement with 450 Sx. of Premium Plus Class "C" cement + 3% Salt, + 0.25# Cello Flakes/Sx., + 3#/Sx LCM-1, + 0.005% gps FP-6L., + 4% Bentonite,Yield 1.7, tail in with 200 Sx. of Premium Plus Class "C" cement + 2% CaCl, + 0.25# Cello Flakes/Sx, + 0.005% FP-L6, Yield 1.3, circulate cement to surface.
5½"	Production	Run and set 7025' of 5½" 17# J-55 LT&C casing. Cement with 950 Sx. of 50/50 Class "C" POZ cement + 5% Salt, + 0.125#/Sx. of Cello Flakes, + 0.0035 FP-6L, + 10% Bentonite, Yield 2.66, tail in with 450 Sx. of 50/50 Class "C" POZ, + 5% Salt, + 0.003% FP-6L, + Yield 1.84, circulate cement to surface.

10. PRESSURE CONTROL EQUIPMENT:

Exhibit "I" shows a 900 Series 3000 PSI working pressure B.O.P. consisting of an annular bag type preventor, middle blind rams, bottom pipe rams. This B.O.P. will be nippled up on the 8 5/8" casing. The B.O.P. will be tested by a third party at 2000 PSI, maxium surface pressure is not expected to exceed 2000 PSI, BHP is calculated to be approximately 3080 PSI. The B.O.P. will be worked at least once in each 24 hout period and the blind rams will be worked when the drill pipe is out of the hole on trips. Exhibit "I" also shows a 3000 PSI choke manifold with a 3" blowdown line. Full opening stabbing valve and kelly cock will be on derrick floor in case of need. No abnormal pressures of temperatures are expected in this well no nearby wells have encountered any problems.

APPLICATION TO DRILL

APACHE CORPORATION
HAWK "A-5" # 4
UNIT "P" SECTION 5
T21S-R37E LEA CO. NM

11. PROPOSED MUD CIRCULATING SYSTEM:

DEPTH	MUD WT.	VISC.	FLUID LOSS	TYPE SYSTEM
40-1350'	8.6-9.4	34-36	NC	Fresh water Spud Mud, add paper to control seepage, high viscosity sweeps to clean hole pH 9.0-9.5
1350-6800'	9.9-10.1	28-32	NC	Brine water add paper to control seepage and high viscosity sweeps to clean hole, pH 9.5-10.
6800-TD	9.9-10.1	30-40	8-10 cc or less	Same as above but add starch to water loss, add caustic soda to pH at 9.5-10

THIS WILL BE A CLOSED MUD SYSTEM

Sufficient mud materilas will be kept on location at all times in order to combat last circulation, or unexpected kicks. In order to run open hole logs and casing the above mud properties may have to be altered to meet these needs.

12. LOGGING, CORING, AND TESTING PROGRAM:

A. OPen hole logs: Dual Laterolog, CNL, LDT, MSFL, NTG, Sonic, Gamma RAy, Caliperfrom TD back to the 8 5/8" casing shoe.

B. Cased hole logs: Gamma Ray, CNL fron 8 5/8" Casing shoe back to surface.

C. Mud logger on hole from 5000' to TD. Mud logger to catch samples

D. No cores or DST's are planned at this time.

13. POTENTIAL HAZARDS:

No abnormal pressures or temperatures are expected. There is no known presence of H^2S in this area. If H^2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 3091 Max. PSI, and Estimated BHT 120°.

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operation and drilling is expected to take 28 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flowlines in order to place well on production.

15. OTHER FACETS OF OPERATIONS:

After running casing, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The Blin.Tubb, Drinkformation will be perforated and stimulated in order to establish production. The well will be swab tested and potentialed as an oil well.

HAWK A 5 # 4
DRILLING PROGRAM

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

Estimated Tops of Geological Markers:

FORMATION	DEPTH
Quaternary alluvials	Surface
Rustler	1306'
Yates	2723'
Queen	3497'
Grayburg	3793'
San Andres	4080'
Glorieta	5259'
Blinebury	5724'
Tubb	6241'
Drinkard	6601'
Abo	6854'
TD	7025'

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

SUBSTANCE	DEPTH
Oil	Blinebry@5724' Tubb@6241' Drinkard@ 6601'
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.

Proposed Casing Program:

HOLE SIZE	CASING SIZE OD / ID	GRADE	WEIGHT PER FOOT	DEPTH	SACKS CEMENT	ESTIMATED TOC - REMARKS
12 ¼"	8 5/8" 8.097"	J55 STC	24#	1350'	650	TOC - Surface 8.9 ppg Water-based Mud; 89 ° F Est. Static Temp; 83 ° F Est. Circ.

7 7/8"	5 ½" 4.892"	J55 LTC	17#	7,025'	1,200	Temp. TOC – Surface Float Collar set @ 6980"/ 10.10 ppg Brine Mud; 141 ° F Est. Static Temp; 117 ° F Est. Circ. Temp.

Proposed Cement Program

CASING	LEAD SLURRY	TAIL SLURRY	DISPLACEMENT
8 5/8"	450 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 796 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;	200 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 270 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;	83 bbls Fresh Water @ 8.33 ppg

8 5/8" Casing: Volume Calculations:

1350 ft	x	0.4127 cf/ft	with	80% excess	=	1002.4 cf
40 ft	x	0.3576 cf/ft	with	0% excess	=	14.3 cf (inside pipe)
		TOTAL SLURRY VOLUME			=	1016.7 cf
					=	181.1 bbls

Spacer 20.0 bbls Water @ 8.33 ppg

CASING	LEAD SLURRY	TAIL SLURRY	DISPLACEMENT
5 ½"	950 sacks (50:50) Poz (Fly Ash): Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.003 gps FP-6L + 10% bwoc Bentonite 2318 Vol. Cu Ft 2.66 Vol. Factor Slurry Weight (ppg) 11.8	450 sacks (50:50) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride +0.003 gps FP-6L 581 Vol. Cu Ft 1.84 Vol. Factor Slurry Weight (ppg) 14.2 Slurry Yield (cf/sack) 1.29 Amount of Mix Water (gps)	160 bbls 2% Kcl Water @ 8.43 ppg

Slurry Yield (cf/sack) 2.44 5.91; Amount of Mix Water (gps) 14.07; Amount of Mix Fluid (gps) 14.07 Estimated Pumping Time – 70 BC (HH:MM)-4:00;				Amount of Mix Fluid(gps) 5.91; Estimated Pumping Time – 70 BC (HH:MM)-3:00;		

5 ½" Casing: Volume Calculations:

1350 ft	x	0.1926 cf/ft	with	0% excess	=	259.9 cf
3850 ft	x	0.1733 cf/ft	with	120% excess	=	1466.7 cf
1825 ft	x	0.1733 cf/ft	with	80% excess	=	568.9 cf
40 ft	x	0.1305 cf/ft	with	0% excess	=	5.2 cf(inside pipe)
	TOTAL SLURRY VOLUME			=		2300.7 cf
				=		409.7 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.

Proposed Mud Program

DEPTH	MUD PROPERTIES	REMARKS
0 – 1,350'	Weight: 8.6 – 9.4 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.
1350' – 6800'	Weight: 9.9 – 10.1 ppg Viscosity: 28 – 29 sec/qt pH: 9-10 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 New-55 at flowline every 250 feet drilled to promote solids settling. Sweep hole with 5-ppb of Super Sweep every 500 feet.
6800' – TD	Weight: 9.9 – 10.1 ppg Viscosity: 30 – 40 sec/qt pH: 9-10 Filtrate: 8-15 cm/30 min	From 5600' 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.

Proposed 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 y 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 Hawk A-5 #4 the maximum anticipated bottom hole pressure is 7,025' x 0.44 psi/ft. = 3,091 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 3,091 psi – (3,091 psi/2) – 1,546 psi.

Auxiliary Equipment

9" x 3000 psi double BOP/blind & pipe ram
41/2" x 3000 psi Kelly valve
9" x 3000 psi mud cross – H_2S detector on production hole
Gate-type safety valve 3" choke line from BOP to manifold
2" adjustable chokes – 3" blowdown line

Logging Program: The following logs may be run:
CNL, LDT, GR, CAL, DLL, MSFL, NGT, Sonic from TD-1300'
CNL, GR from TD-Surface

Mudlogging Program

It is planned for mud loggers to catch samples from 5,000' to TD.

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 3091 psi.

EXHIBIT I

Hydrogen Sulfide Drilling Operations Plan

No H_2S is anticipated.

Surface Location

SE ¼ of Section 5, Township 21 South, Range 37 East, N.M.P.M.
Lea County, New Mexico
450' FSL, 450' FEL, Lot No. P

Bottom Hole Location

SE ¼ of Section 5, Township 21 South, Range 37 East, N.M.P.M.
Lea County, New Mexico
450' FSL, 450' FEL, Lot No. P

Leases Issued: LC 031741(a)

Operating Rights

Apache Corporation	50%
BP America	25%
Chevron USA	25%

Acres in Lease

Township 21 South, Range 37 East
Section 4: W/2SW/4
Section 5: SE/4
Section 8: NE/4, N/2NW/4
Section 9: W/2NW/4

Total Acres: 560.00

Acres Dedicated to Well

There are 40.00 acres dedicated to this well, which takes in the UL P of Section 5, Township 21 South, Range 37 East, N.M.P.M., Lea County, New Mexico.

Driving Directions

From the intersection of State Hwy 207 and County Road # E-49 (Hill Road), go northwest on Hill Road approximately 2.0 miles. Turn right and go North approximately 100 feet. Turn right and go East approximately 0.3 mile. Turn left and go North approx. 0.1 miles. Go North into location.

Location and Type of Water Supply

Apache Corporation plans to drill the proposed well with fresh and brine water which will be transported by truck over proposed and existing access roads.

Method of Handling Waste Material

We will be utilizing a closed-loop mud system, all drill cuttings and fluids will be hauled off to a licensed disposal location.
Water produced during operations will be collected in tanks until hauled to an approved disposal system.
Oil produced during operation will be stored in tanks until sold.
Apache Corporation will comply with current laws and regulations pertaining to the disposal of human waste.
All waste materials will be contained to prevent scattering by the wind and will be removed from the well site within 30 days after drilling and/or completion operations are finished.

Surface Ownership

The surface is owned by the Millard Deck Estate, c/o Bank of America NA, attention Tim Wolters, PO Box 270, Midland, TX 79701, 432-685-2064. We have a signed surface damage agreement. Minerals are owned by the U S Department of Interior and is administered by The Bureau of Land Management.

Archaeological, Historical, and Other Cultural Sites

Boone Archeological Services, LLC, Carlsbad, New Mexico will be conducting an archaeological survey of the proposed well which covers the drilling location, production facilities, and access road, including a corridor along said access road for power and flow lines. His report will be filed under separate cover.

Lessee's or Operator's Representative and Certification.

I hereby certify that I, or persons under my direct supervision, have

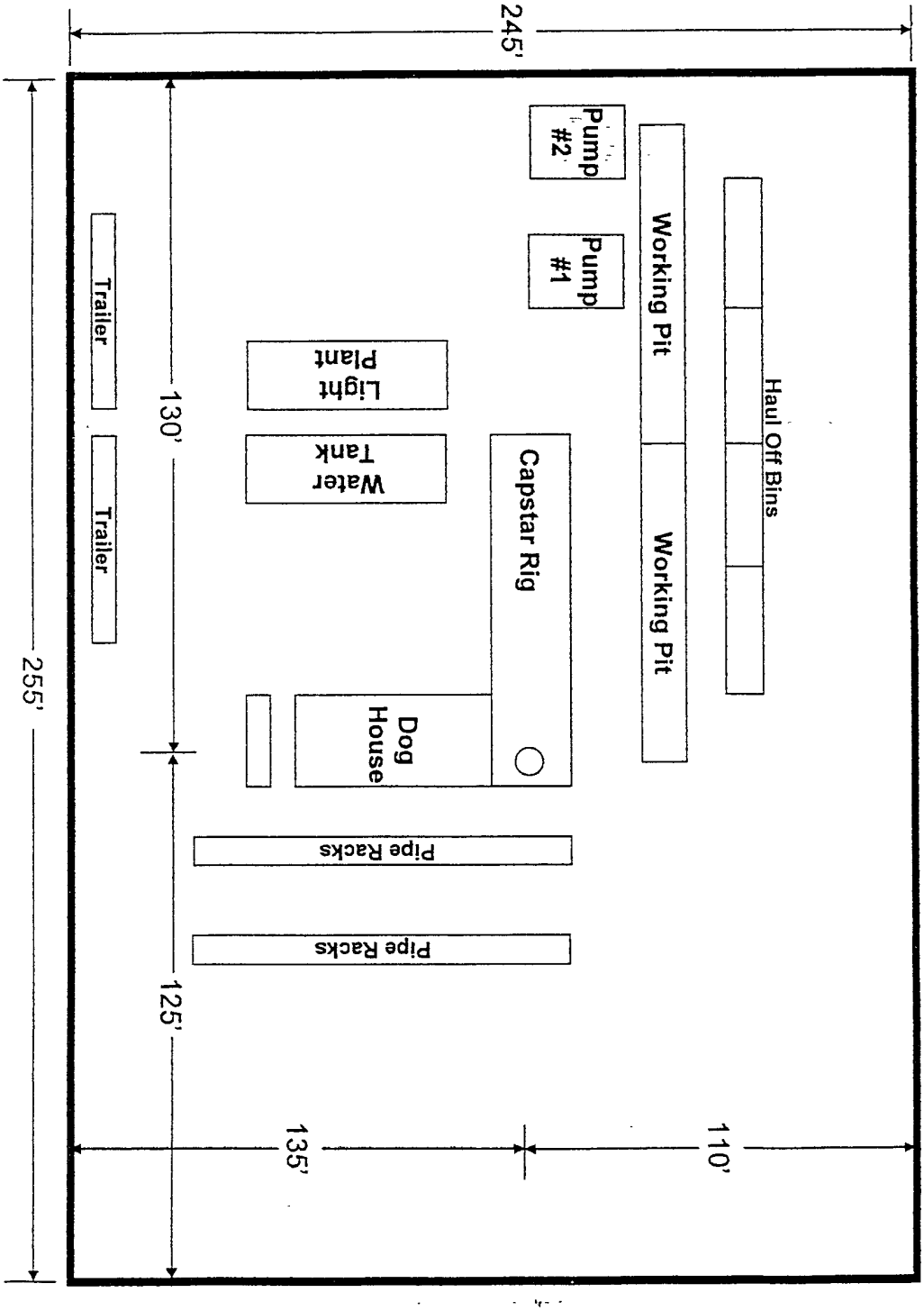


EXHIBIT "G"
RIG LAYOUT PLAT

APACHE CORPORATION
HAWK "A-5" # 4
UNIT "P" SECTION 5
T21S-R37E LEA CO. NM

EXHIBIT I

3000psi
BOPE

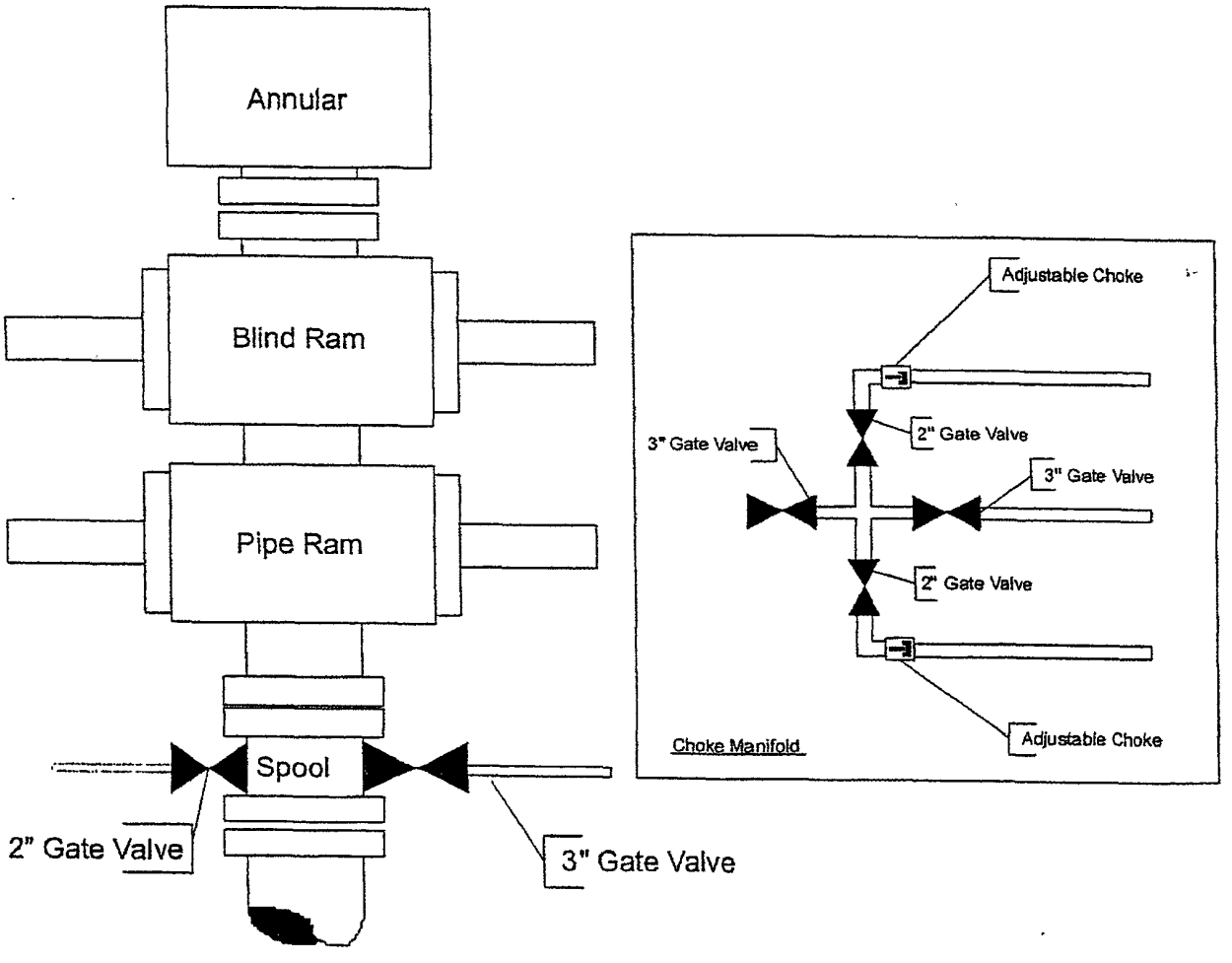


EXHIBIT "I"
SKETCH OF BOP & CHOKE MANIFOLD

APACHE CORPORATION
HAWK "A-5" # 4
UNIT "P" SECTION 5
T21S-R37E LEA CO. NM

Hydrogen Sulfide Contingency Plan
For Drilling/Workover/Facility

If at this time the supervising person determines the release of H2S cannot be contained to the site location and the general public is in harms way he will take the necessary steps to protect the workers and the public.
EMERGENCY CALL LIST: (Start and continue until ONE of these people has been contacted)

	OFFICE	MOBILE	HOME
Harold Swain	432-527-3311	575-390-4368	
Danny Chaney	405-574-4249		
Sam Hampton	918-491-4954	918-978-0121	

EMERGENCY RESPONSE NUMBERS:

State Police	Eddy County		575 -748-9718
State Police	Lea County		575-392-5588
Sheriff	Eddy County		575-746-2701
Sheriff	Lea County		
Emergency Medical Service (Ambulance)	Eddy County		911 or 505-746-2701
	Lea County	Eunice	911 or 505-394-3258
Emergency Response	Eddy County SERC		575-476-9620
	Lea County		
Artesia Police Dept			575-746-5001
Artesia Fire Dept			575-746-5001
Carlsbad Police Dept			575-885-2111
Carlsbad Fire Dept			575-885-3125

EMERGENCY CALL LIST (CONT.)

Loco Hills Police Dept		575-677-2349
Jal Police Dept		575-395-2501
Jal Fire Dept		575-395-2221
Jal Ambulance		575-395-2221
Eunice Police Dept		575-394-0112
Eunice Fire Dept		575-394-3258
Eunice Ambulance		575-394-3258
Hobbs Police Dept		575-397-3365
Hobbs Fire Dept		575-397-9308
NMOCD	District 1 (Lea, Roosevelt, Curry)	575-393-6161
	District 2 (Eddy, Chavez)	575-748-1283
Lea County Information		575-393-8203
Callaway Safety	Eddy/Lea Counties	575-392-2973
BJ Services	Artesia	575-746-3140
	Hobbs	575-392-5556
Halliburton	Artesia	1-800-523-2482
	Hobbs	1-800-523-2482
Wild Well Control	Midland	432-550-6202
	Mobile	432-553-1166

WELL CONTROL EMERGENCY RESPONSE PLAN

I. GENERAL PHILOSOPHY

Our objective is to ensure that during an emergency, a predetermined procedure is followed so that prompt decisions can be made based on accurate information.

The best way to handle an emergency is with an experienced organization set up for the sole purpose of solving the problem. The **Well Control Emergency Response Team** was organized to handle dangerous and expensive well control problems. The team is structured such that each individual can contribute the most from his area of expertise. Key decision-makers are determined prior to an emergency to avoid confusion about who is in charge.

If the well is flowing uncontrolled at the surface or subsurface, the **Emergency Response Team** will be mobilized. The Team is customized for the people currently on the Apache staff. Staff changes may require a change in the plan.

II. EMERGENCY PROCEDURE ON DRILLING OR COMPLETION OPERATIONS

A. In event of an emergency the Drilling Foreman or Tool-pusher will immediately contact only one of the following starting with the first name listed.

	Office	Home	Mobile
Danny Chaney	(405) 222-5040		(405)574-2107
Ross Murphy	(918) 491-4834	(918) 749-9454	(918) 691-9493
Tom Voytovich	(918) 491-4901	(918) 299-8820	(918) 381-0882

Emergency Telephone Conference Room: (888) 896-4185 and input code: 344855

This one phone call will free the Drilling Foreman to devote his full time to securing the safety of personnel and equipment. This call will initiate the process to mobilize the Well Control Emergency Response Team. Apache maintains an Emergency Telephone Conference Room in the Houston office. This room is available for use by the Mid-Continent Region. The room has 50 separate telephone lines.

B. The Apache employee contacted by the Drilling Foreman will begin contacting the rest of the team. If Ross Murphy is out of contact, Tom Voytovich will be notified.

C. If a member of the Emergency Response Team is away from the job, he must be available for call back. Telephone numbers should be left with secretaries or a key decision-maker.

D. Apache's reporting procedure for spills or releases of oil or hazardous materials will be implemented when spills or releases have occurred or are probable.

HYDROGEN SULFIDE DRILLING OPERATIONS 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 (H_2S).
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H_2S 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 H_2S on metal components. If high tensile tubulars are to be used, personnel will 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 H_2S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

II. H_2S Safety Equipment and Systems

1. Well Control Equipment that will be available and installed if H2S is encountered:
   - A. Flare line with electronic igniter or continuous pilot.
   - B. Choke manifold with a minimum of one remote choke.
   - C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
   - D. Auxiliary equipment to include annular preventer, mud-gas separator, rotating head, and flare gun with flares.
2. Protective equipment for essential personnel:
   - A. Mark II Surviveair 30-minute units located in the dog house and at briefing areas.
3. H_2S detection and monitoring equipment:
   - A. Two portable H_2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H_2S levels of 20 ppm are reached.
   - B. One portable S02 monitor positioned near flare line.
4. Visual warning systems:
   - A. Wind direction indicators.
   - B. Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used when appropriate.
5. Mud program:
   - A. The mud program has been designed to minimize the volume of H_2S circulated to the surface. Proper mud weight, safe drilling practices, and the use of H_2S scavengers will minimize hazards when penetrating H_2S-bearing zones.
   - B. A mud-gas separator and an H_2S gas buster will be utilized if H2S is encountered.
6. Metallurgy:
   - A. All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H_2S service.
   - B. All elastomers used for packing and seals shall be H_2S trim.
7. Communication:
   - A. Radio communications in company vehicles including cellular telephone and 2-way radio.

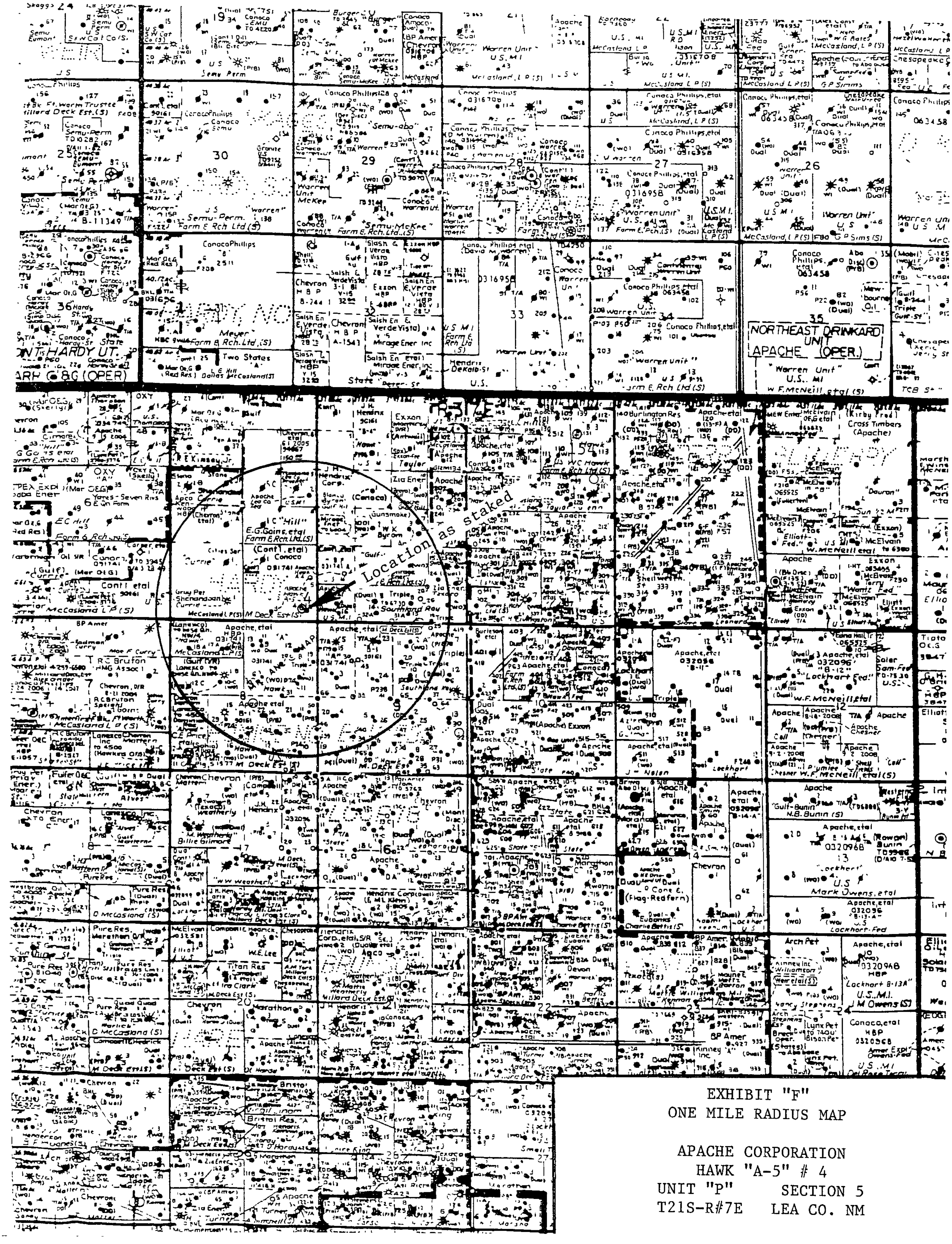


EXHIBIT "F"
ONE MILE RADIUS MAP

APACHE CORPORATION
HAWK "A-5" # 4
UNIT "P" SECTION 5
T21S-R#7E LEA CO. NM

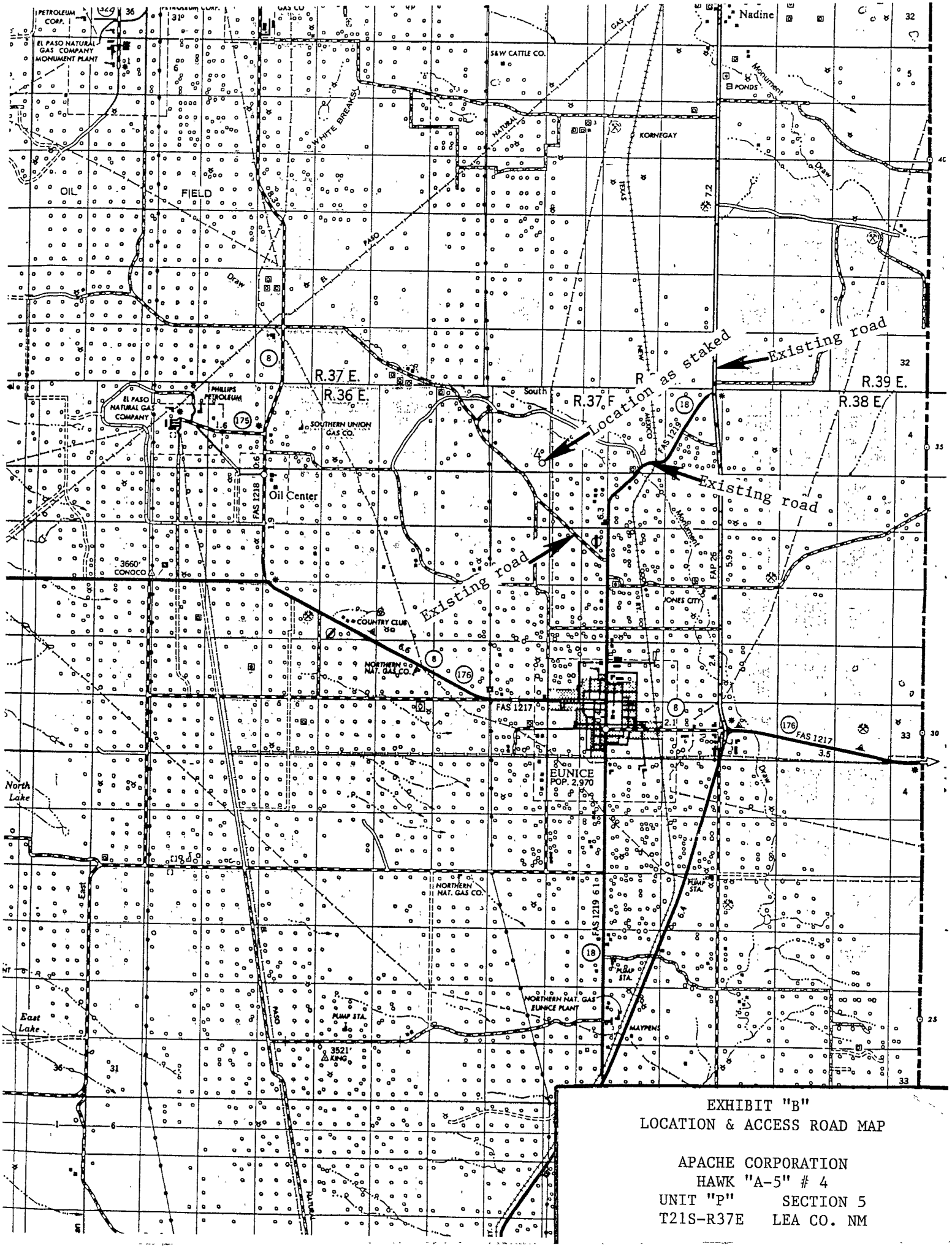


EXHIBIT "B"
LOCATION & ACCESS ROAD MAP

APACHE CORPORATION
HAWK "A-5" # 4
UNIT "P" SECTION 5
T21S-R37E LEA CO. NM

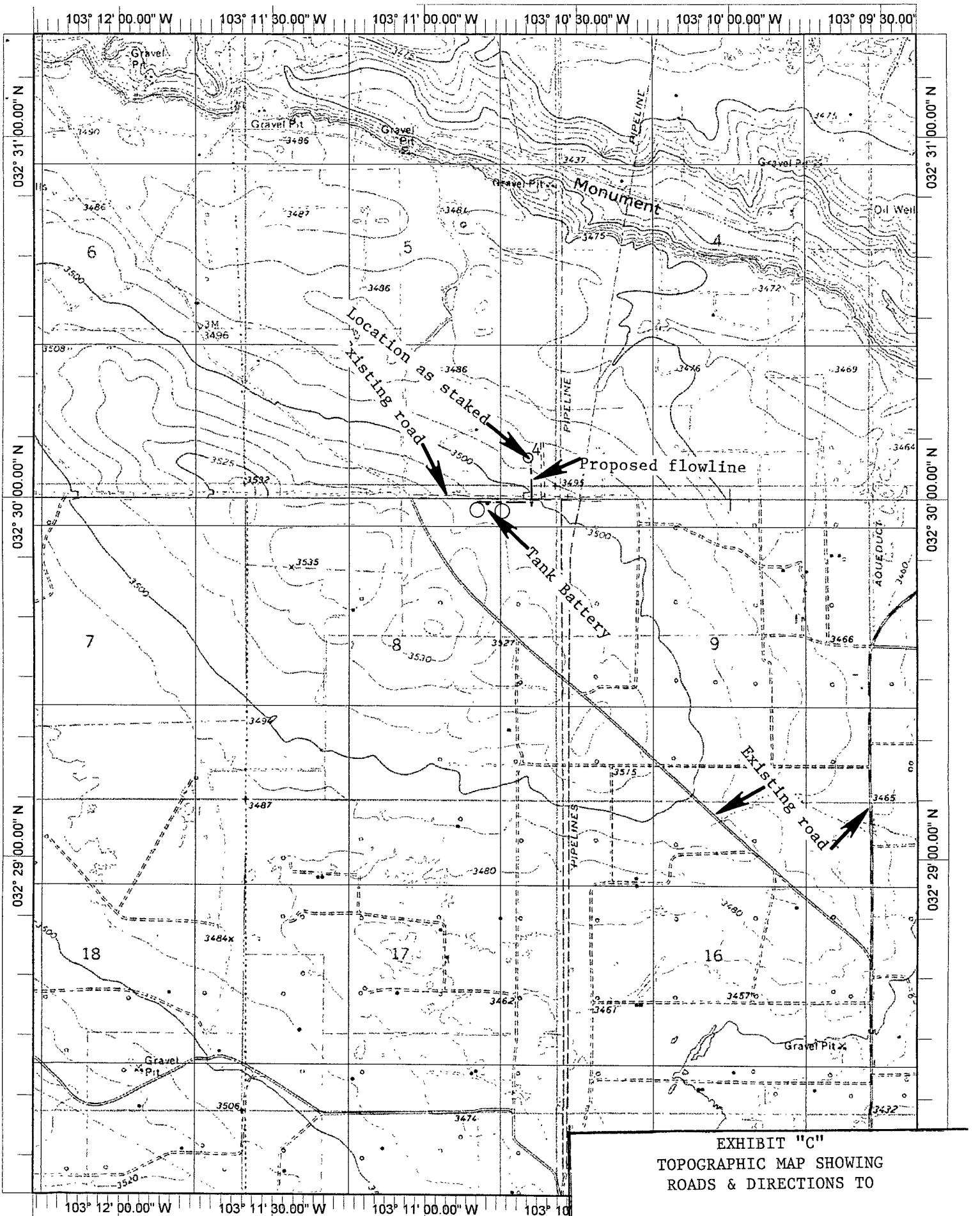


EXHIBIT "C"
TOPOGRAPHIC MAP SHOWING
ROADS & DIRECTIONS TO

APACHE CORPORATION
HAWK "A-5" # 4
UNIT "P" SECTION 5
T21S-R37E LEA CO. NM

APACHE CORPORATION

CLOSED-LOOP SYSTEM DESIGN, OPERATION, MAINTENANCE AND CLOSURE PLAN – revised 7/16/2008
TYPICAL FOR NEW MEXICO WELLS

This document is intended to provide design requirements as well as operating, maintenance and closure instructions for closed-loop (drilling fluid) systems, ensuring compliance with the New Mexico Title 19, Chapter 15, Part 17 rules and regulations. Drilling units operating for Apache Corporation in New Mexico should be rigged up with a closed-loop system consistent with this design and should be operated, maintained and closed in a manner consistent with this document.

Design
The closed-loop system shall be designed and construct to ensure the confinement of oil, gas or water and to prevent uncontrolled releases. We will utilize cuttings bins to contain drilled solids for transport and disposal off site at a New Mexico licensed disposal facility. Figure 1. – New Mexico Typical Closed Loop System is attached for reference when reviewing the following design specifications.

The minimum solids removal equipment shall include a high speed shaker and a centrifuge.

- The shale shaker(s) shall be placed to receive all of the fluid and cuttings as they return from the well bore. Entry from the flow line shall be such that splash is minimized. It shall be placed such that the drilled solids that are removed by the screen are easily conveyed to the cuttings bin(s). If a slide is required it should be designed with as much slope as possible to minimize maintenance while drilling.

- The centrifuge shall be fed by a dedicated centrifugal pump from the first active mud tank. It shall be placed such that the drilled solids removed dump directly into the cuttings bin(s). The liquid recovered should be gravity returned to the active mud system, down stream of the feed pump suction.

The minimum active mud system volume shall be 500 barrels. Tank(s) shall be of steel construction and in a condition such that no leaks or uncontrolled releases would be expected.

- The tanks shall be equipped with a jetting system to allow emptying of the tanks into an above ground container.

- Any dump valves shall be in good condition and left closed at all times during regular drilling operations.

- Tank bottoms shall be sloped to facilitate clean out.

In addition to the active mud tank(s) the closed-loop system shall include at a minimum two additional steel tanks for fluid containment. Both tanks shall be placed such that fluid can easily be drawn out of them on an as needed basis with vacuum trucks.

- One steel tank shall be placed such that it can receive fluid from the choke manifold. This same tank shall be placed where returns from the well bore during cementing operations can be directed into it, diverting cement returns from the active mud system.

- Another steel tank shall be placed such that the active mud system can be jetted into it when dilution is required.

All drilled solids removed from the well bore and recovered from the drilling fluid shall be collected in steel "haul-off" bins. These temporary pits for solids management shall comply with any applicable requirements for temporary pits specified in 19.15.17 NMAC.

- Cuttings bins shall be of steel construction and be capable of being closed during transport to prevent spillage.

- Cuttings bins shall be constructed and placed in a manner to facilitate removal of full bins and placement of empty bins with out disrupting the drilling operations.

The entire closed-loop system as described above, with the exception of the active mud tanks, shall be placed on a 20 mil nylon reinforced liner for splash containment.

- The liner shall be of size and installed in a manner that splash from normal operations such as fluid transfer, jetting of tanks, washing down of shaker slide, etc of the closed-loop system does not reach the soil on the location.

- The liner shall be installed in a manner such that run on of surface water does not occur, and run off of splash fluids does not occur.

Operation and Maintenance
The closed-loop system shall be operated and maintained at all times in such a manner as to prevent contamination of fresh water and protect the public health and the environment. While Apache Corp relies on various third party vendors to provide, operate and maintain the closed-loop system, in the end it is the Apache Corp on-site representative who must take responsibility for the effective operation of the system. At the end of the well, all drilling fluids and drilled solids should be disposed of in a licensed disposal facility in New Mexico.

Know which licensed and approved disposal facility is closest to your location and verify they are capable and prepared to receive the cuttings and fluids from your well. Track all loads sent during the drilling of the well and up to the time the rig is moved off of the location.

Current approved facilities are;

- Controlled Recovery Inc. (877) 505-4274
- Sundance Incorporated (575) 394-2511

Ensure that the closed-loop system meets the design criteria listed above and is properly installed and fully functional prior to spud.

The shale shaker(s) must be run at all times while drilling unless the use of lost circulation material (LCM) prevents it. The shaker(s) should also be run as required while tripping to ensure that any displacement from the well bore is returned to the active system and does not run over the (stopped) shale shaker screens.

- The finest mesh screens that will not cause excessive fluid discharge shall be used at all times. Torn screens should be replaced as soon as possible.

- The shale slide shall be inspected regularly through out a tour and kept clean such that drilled solids do not build up and spill over the sides, missing the cuttings bins.

The centrifuge should be run at all times while drilling fluid is maintained in the active mud system. Continual use will reduce dilution requirements.

- The centrifuge and associated feed pump should be checked regularly through out a tour to ensure they are running properly. Call for a service man as soon as possible if they are found not to be working properly or at all.

- Check for and correct immediately any leaks in the feed pump suction and discharge lines.

Inspect the active system tanks at least every tour to ensure no drilling fluid is leaking onto the location. Check any dump valves and interconnecting pipes for leaks. Correct any leaks as soon as possible upon detection.

- Jet active mud system as required to maintain desired mud weight. Be sure the jetting lines are secure and do not cause excessive splash at the steel holding tank.

Monitor and know/plan the fluid level in the steel fluid containment pits. Call for vacuum trucks with enough lead time to allow for possible delays.

- Plan for displaced fluid during cement jobs. Ensure enough vacuum trucks are on hand as required before beginning your cementing job.

- Do not mix fresh water and brine water if possible. Completely empty fresh water from the steel tanks before converting the mud system to brine water.

Inspect cuttings bins at least once per tour, noting their level, any spills and any damage to the containers that could result in loss of cutting containment.

- Ensure that you have enough empty volume to handle the high rates of penetration expected on surface holes and other portions of the wells.

- Ensure cuttings bin tops are closed before leaving location en route to the disposal site.

Check the condition of the splash containment liner daily. Look for any leaks and splash accumulation that needs to be cleaned up. Repair any leaks in the liner immediately.

- Clean up any splash accumulation on the liner using diaphragm pumps, vacuum trucks and other means as necessary.

Make every effort to operate and maintain the closed-loop system in a manner that puts no drilling fluid or well bore discharge/cuttings in contact with the location or surrounding area.

In the event of an oil spill that reaches water, or an oil spill to land over five (5) barrels take immediate action to contain the spill and make to following notifications;

- EHS Apache Hotline; 800 874-3262
- NMOCD

In the event of oil reaching water include the following notification;

- Environmental Protection Agency (EPA) National Response Center

Closure

The "closure" of the closed-loop system must be completed within six months of the date the drilling rig is released from the location. A Closure Report must be filed with the New Mexico Oil Conservation Division within 60 days of completing the closure.

"Closure" of a closed-loop system begins with the proper disposal of all liquid mud and cuttings that are on location upon rig release. The cuttings and liquid should be transported to an approved disposal facility. This includes any fluid or solids that may be on the surface of the splash containment liner. See operating instructions above.

Next all of the equipment associated with the closed-loop system must be removed. This includes steel tanks, cuttings bins and rails. Ensure that equipment being removed and transported to the next location or other facility is clean and in such a state that no waste will be discharged during transportation.

Once all of the equipment has been removed the splash containment liner material must be gathered up and disposed of in an approved disposal facility. Ensure the liner is recovered in such a manner that any contamination is "folded in" and no discharge will

occur during transportation to the disposal facility. Visually search for any wet areas, discoloration or other evidence of a mud or cuttings release to the surface. If there is no evidence of any release proceed with filing the closure report.

If there is evidence of a release of mud or cuttings to the surface collect individual grab samples from the potentially contaminated area and analyze for benzene, total BTEX, THP, the GRO and DRO combined fraction and chlorides to demonstrate that benzene, as determined by EPA SW-846 method 8021B or 8260B or other EPA method that the division approves, does not exceed 0.2 mg/kg; total BTEX, as determined by EPA SW-846 method 8021B or 8260B or other EPA methods that the division approves, does not exceed 50 mg/kg; TPH, as determined by EPA SW-846 method 418.1 or other EPA method that the division approves does not exceed 2500 mg/kg; the GRO and DRO combined fraction determined by EPA SW-846 method 8015M, does not exceed 500 mg/kg; and chlorides as determined by EPA method 300.1 do not exceed 500 mg/kg or the background concentration, whichever is greater.

When closure is completed a closure report must be filed with the NMOCD within 60 days. The filing consists of printing a copy of the C-144 that was approved previously, completing the Closure Report on page 4 and submitting it to the NMOCD.

For our closed-loop systems in the Closure Report area of the form we will provide the closure completion date and check the "Closure Completion Date" box found approx. 2/3 of the way down the page. In the Closure Method area, check the "Waste Excavation and Removal" box. In the Closure Report Attachment Checklist put a check mark in the "Disposal Facilities Name and Permit Number". In the space to the right of the checklist write in the name(s) of the disposal facility or facilities used during both the drilling and the closure phase of the closed-loop operation. If there was no evidence of liner leakage of splashed mud or cuttings then complete the Operator Closure Certification box at the bottom of page 4 of Form C-144, sign and date it and submit it to the NMOCD.

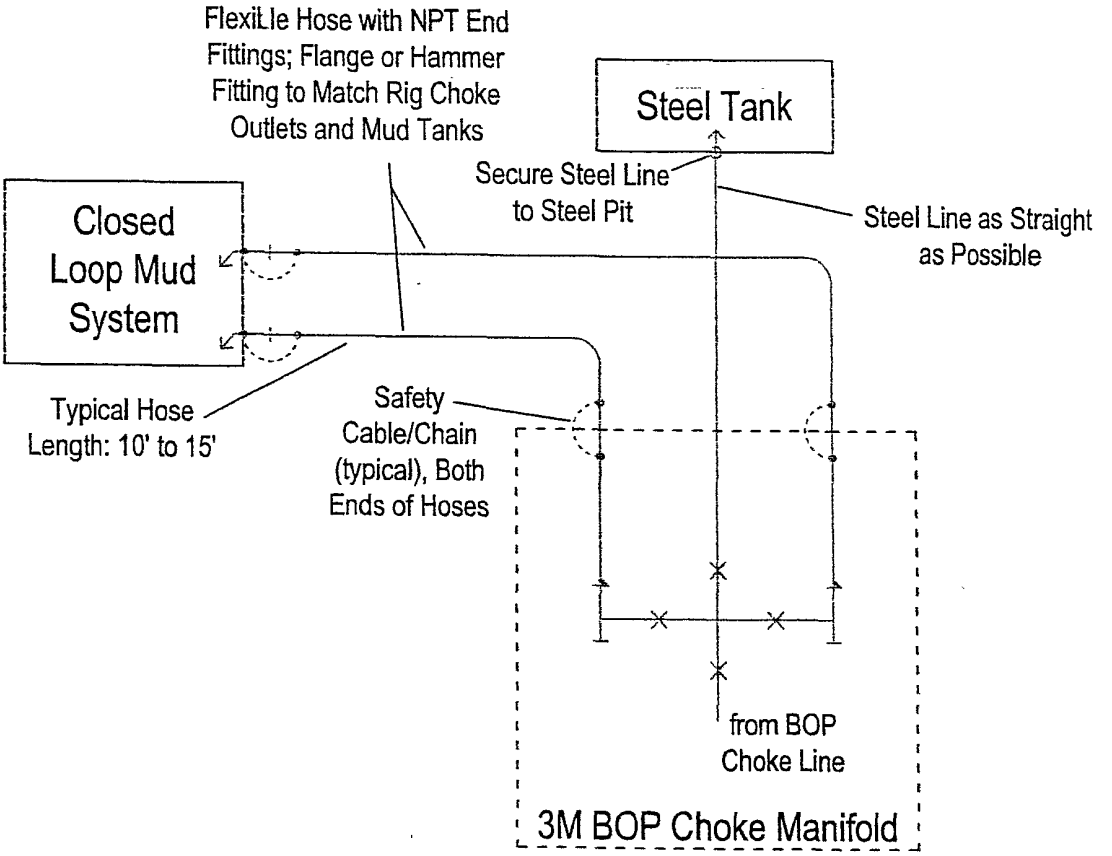
If there was evidence of liner leakage requiring samples and analysis, in addition to the instructions for completing Form C-144 listed above, check the "Confirmation Sampling Analytical Results" box in the Closure Report Attachment Checklist and attach a copy of the soil analysis report.

Prepared by

July 2, 2008

Sam Hampton, P.E.
Drilling Engineer

Attachment:
Figure 1. – New Mexico Typical Closed-Loop System



TWO WARREN PLACE, SUITE 1500
6120 SOUTH YALE
TULSA, OKLAHOMA 74136-4224

Typical Choke Manifold Schematic for Closed-Loop Mud System

PDD: SAM HAMPTON | SCALE: NTS | DATE: 2 MARCH 2009

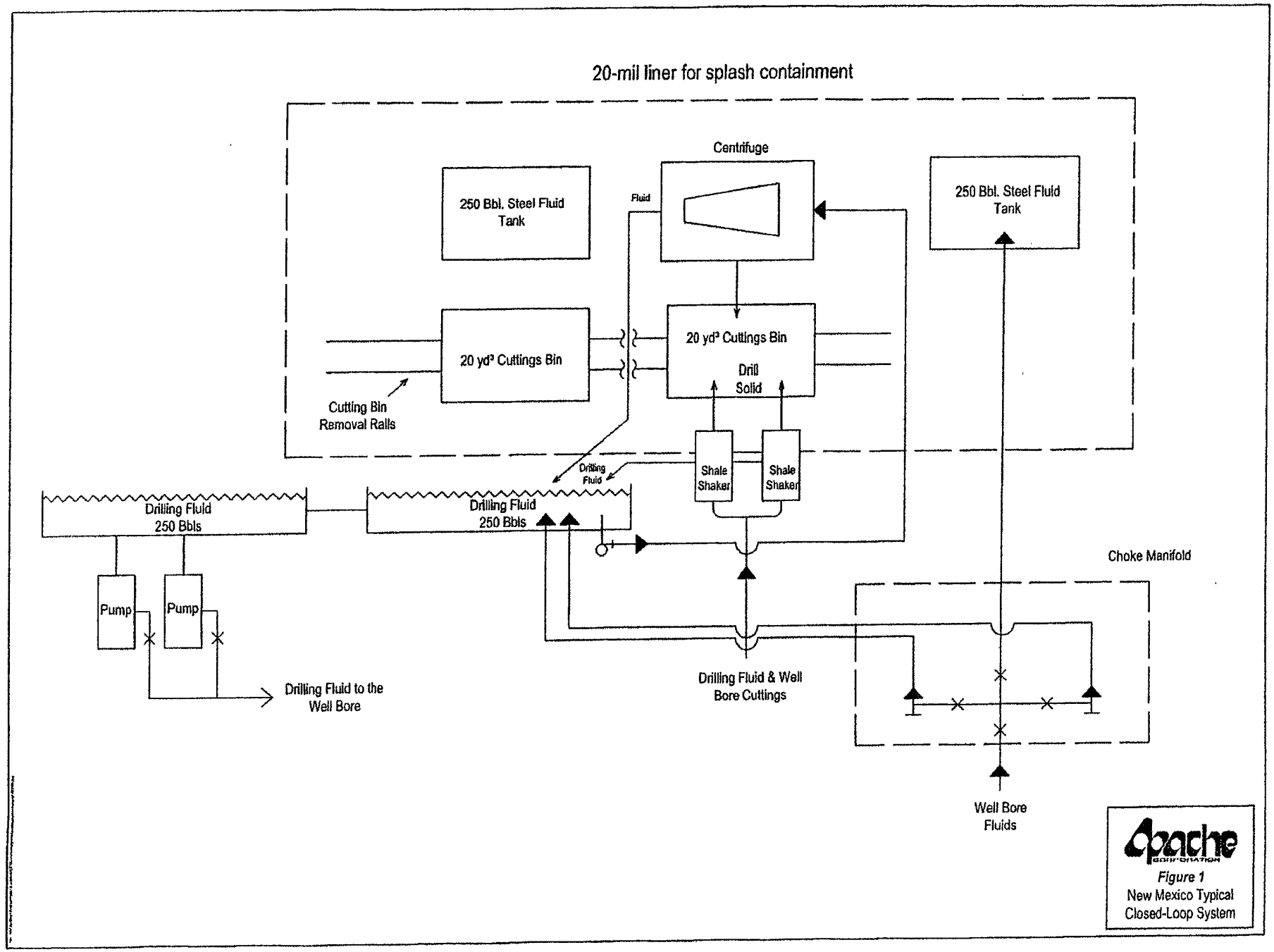


Figure 1
New Mexico Typical
Closed-Loop System

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Apache Corporation
LEASE NO.:	LC-031741A
WELL NAME & NO.:	Hawk A-5 #4
SURFACE HOLE FOOTAGE:	450' FSL & 450' FEL
BOTTOM HOLE FOOTAGE	' F L & ' F L
LOCATION:	Section 05, 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.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1 through June 15 annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

VI. 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.

VII. 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 **Blinebry** 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 Glorieta formation.

1. The **8-5/8** inch surface casing shall be **set at approximately 1350 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 040609

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.

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

B. PIPELINES

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the

Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.

b. Activities of other parties including, but not limited to:

(1) Land clearing.
(2) Earth-disturbing and earth-moving work.
(3) Blasting.
(4) Vandalism and sabotage.

c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of **25** feet.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline will be "snaked" around hummocks and dunes rather then suspended across these features.

9. The pipeline shall be buried with a minimum of **24** inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object)

discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder 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 will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

(March 1989)

IX. 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 for LPC Sand/Shinnery Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A
**Four-winged Saltbush	5lbs/A

* This can be used around well pads and other areas where caliche cannot be removed.

*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.