

UNITED STATES N.M. Oil & Gas Lease - Dist. 2
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
1301 W. Grand Avenue

OMB NO. 1004-0136
 Expires: February 28, 1995

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK
 DRILL ☒ DEEPEN ☐

b. TYPE OF WELL
 OIL WELL ☐ GAS WELL ☒ OTHER ☐ SINGLE ZONE ☒ MULTIPLE ZONE ☐

2. NAME OF OPERATOR
 LATIGO PETROLEUM, INC. (JOE CLEMENTS 432-684-4293)

3. ADDRESS AND TELEPHONE NO.
 550 WEST TEXAS AVENUE SUITE 700 MIDLAND, TEXAS 79701

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)
 At surface 660' FSL & 1980' FEL SECTION 13 T23S-R28E EDDY CO. NM
 At proposed prod. zone SAME

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE
 Approximately 4 miles East of Loving New Mexico

15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 660'

16. NO. OF ACRES IN LEASE 320

17. NO. OF ACRES ASSIGNED TO THIS WELL 320

18. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. NA

19. PROPOSED DEPTH 12,000'

20. ROTARY OR CABLE TOOLS ROTARY

21. ELEVATIONS (Show whether DF, RT, GR, etc.) 2976' GR.

22. APPROX. DATE WORK WILL START WHEN APPROVED

LEASE DESIGNATION AND SERIAL NO.
 NM-106689

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME, WELL NO. NORTH BANK "13" FEDERAL # 1

9. API WELL NO. 30-015-34260

10. FIELD AND POOL, OR WILDCAT CULEBRA BLUFF ATOKA S.

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA SECTION 13 T23S-R28E

12. COUNTY OR PARISH EDDY CO.

13. STATE NEW MEXICO

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 OCU-ANTERNA

23. CARLSBAD CONTROLLED WATER BASIN PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
25"	Conductor 20"	NA	40'	Redi-mix to surface
17 1/2"	H-40 13 3/8"	48# WITNESS	500' 350-325	490 Sx. circulate to surface
12 1/2"	J-55 9 5/8"	36#	2640'	735 Sx. " " "
8 3/4"	N-80 7"	23 & 26#	10,800'	870 Sx. Estimate TOC 2300'
6 1/8"	P-110 4 1/2"	13.5#	10600-12000'	145 Sx. Cement to top liner.

1. Drill 25" hole to 40'. Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
2. Drill 17 1/2" hole to 500'. Run and set 500' of 13 3/8" 48# H-40 ST&C casing. Cement with 490 Sx. of Class "C" cement + 2% CaCl₂ + 1/2# Flocele/Sx. circulate cement to surface.
3. Drill 12 1/2" hole to 2640'. Run and set 2640' of 9 5/8" 36# J-55 ST&C casing. Cement with 735 Sx. of Class "C" cement + additives, circulate cement to surface.
4. Drill 8 3/4" hole to 10,800'. Run and set 10,800' of 7" 23 & 26# N-80 LT&C casing. Cement with 870 Sx. of Class "H" premium plus cement + additives, estimate top of cement 2300'± from surface.
5. Drill 6 1/8" hole to 12,000'. Run and set a 1500' 4 1/2" 13.5# P-110 LT&C liner from 12,000' back to 10,500'. Cement with 145 Sx. of Class "H" Premium Plus cement + additives. Cement back to top of liner hanger at 10,500'.

LATIGO PETROLEUM, INC. ACCEPTS RESPONSIBILITY FOR OPERATION OF THIS LEASE.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. Joe T. Garcia SIGNED Agent TITLE APPROVAL SUBJECT TO GENERAL REQUIREMENTS 07/07/05

(This is a) **Any new pit constructed must be permitted under Rule 50.**

AND SPECIAL STIPULATIONS ATTACHED
 APPROVAL DATE _____
 or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

APPROVED BY /s/ JOE G. Lara TITLE **ACTING FIELD MANAGER** DATE AUG 16 2005

DISTRICT I
1625 N. FRENCH DR., ROSES, 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 JUNE 10, 2003
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 75740	Pool Name CULEBRA BLUFF-ATOKA SOUTH (GAS)
Property Code	Property Name NORTH BANK 13 FEDERAL	Well Number 1
OGRID No. 227001	Operator Name LATIGO PETROLEUM, INC.	Elevation 2976'

Surface Location

UL or lot No. 0	Section 13	Township 23-S	Range 28-E	Lot Idn	Feet from the 660	North/South line SOUTH	Feet from the 1980	East/West line EAST	County EDDY
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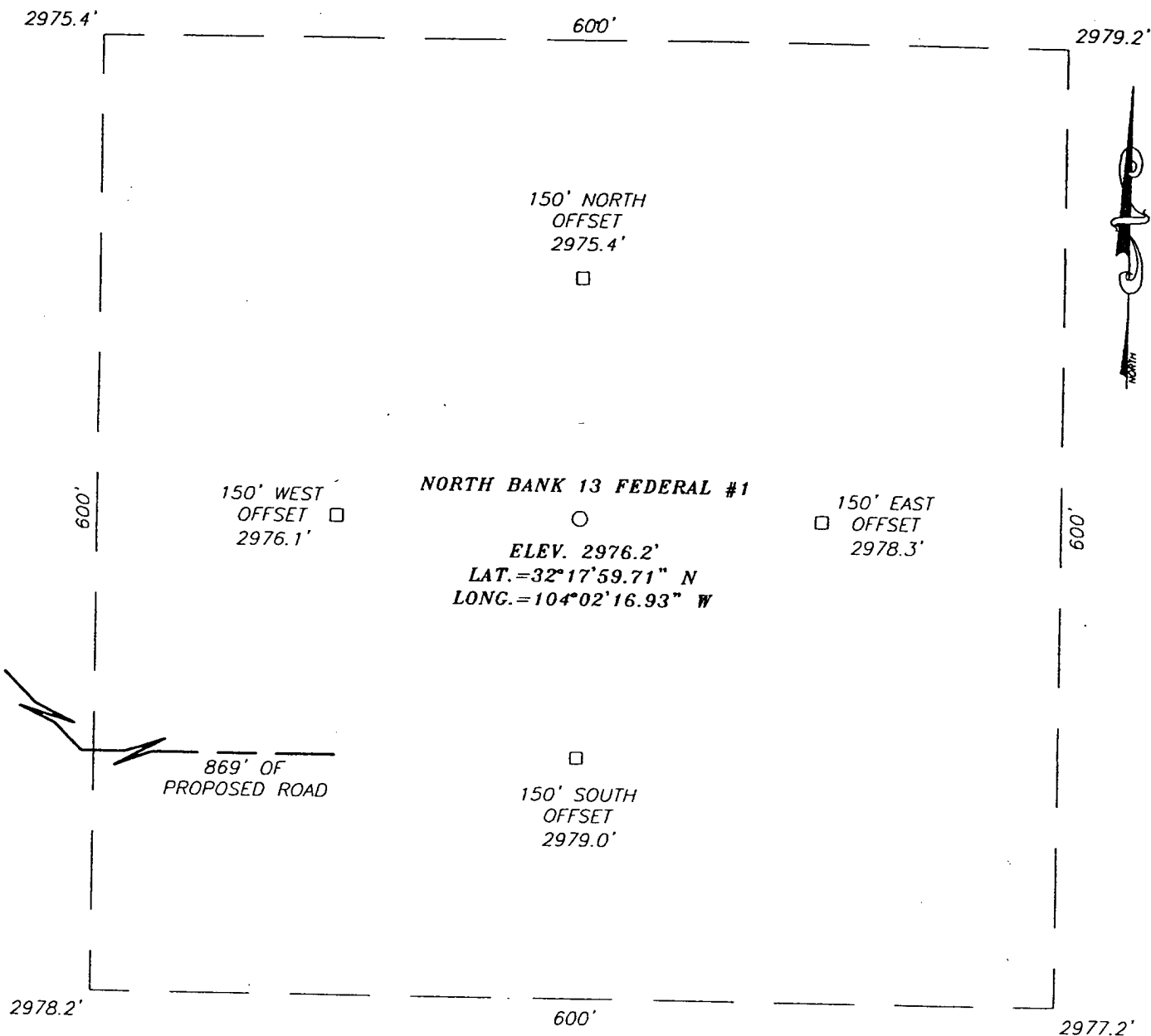
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 320	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

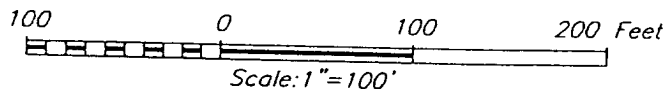
<p>GEODETIC COORDINATES NAD 27 NME Y=472953.7 N X=591241.2 E LAT.=32°17'59.71" N LONG.=104°02'16.93" W</p>		<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Joe T. Janica</i> Signature Joe T. Janica Printed Name Agent Title 07/07/05 Date</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>JUNE 1, 2005 Date Surveyed Signature of Seal Professional Surveyor GARY EDISON NEW MEXICO 6/15/05 05.11.0823 Certificate No. GARY EDISON 12641</p>
<p>2975.4' 2979.2' 600' 2978.2' 2977.2' 600' 1980'</p>		

SECTION 13, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

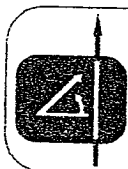
FROM THE INTERSECTION OF HWY. #31 AND FISHERMANS ROAD (CO. RD. #741). GO SOUTH ON CO. RD. #741 APPROX. 0.4 MILES TO A "Y" INTERSECTION AND TURN RIGHT (SOUTH) ACROSS R.R. TRACKS. GO APPROX. 0.8 MILES TO PROPOSED ROAD SURVEY ON THE LEFT (EAST). THIS LOCATION IS APPROX. 0.15 MILES EAST.



LATIGO PETROLEUM, INC.

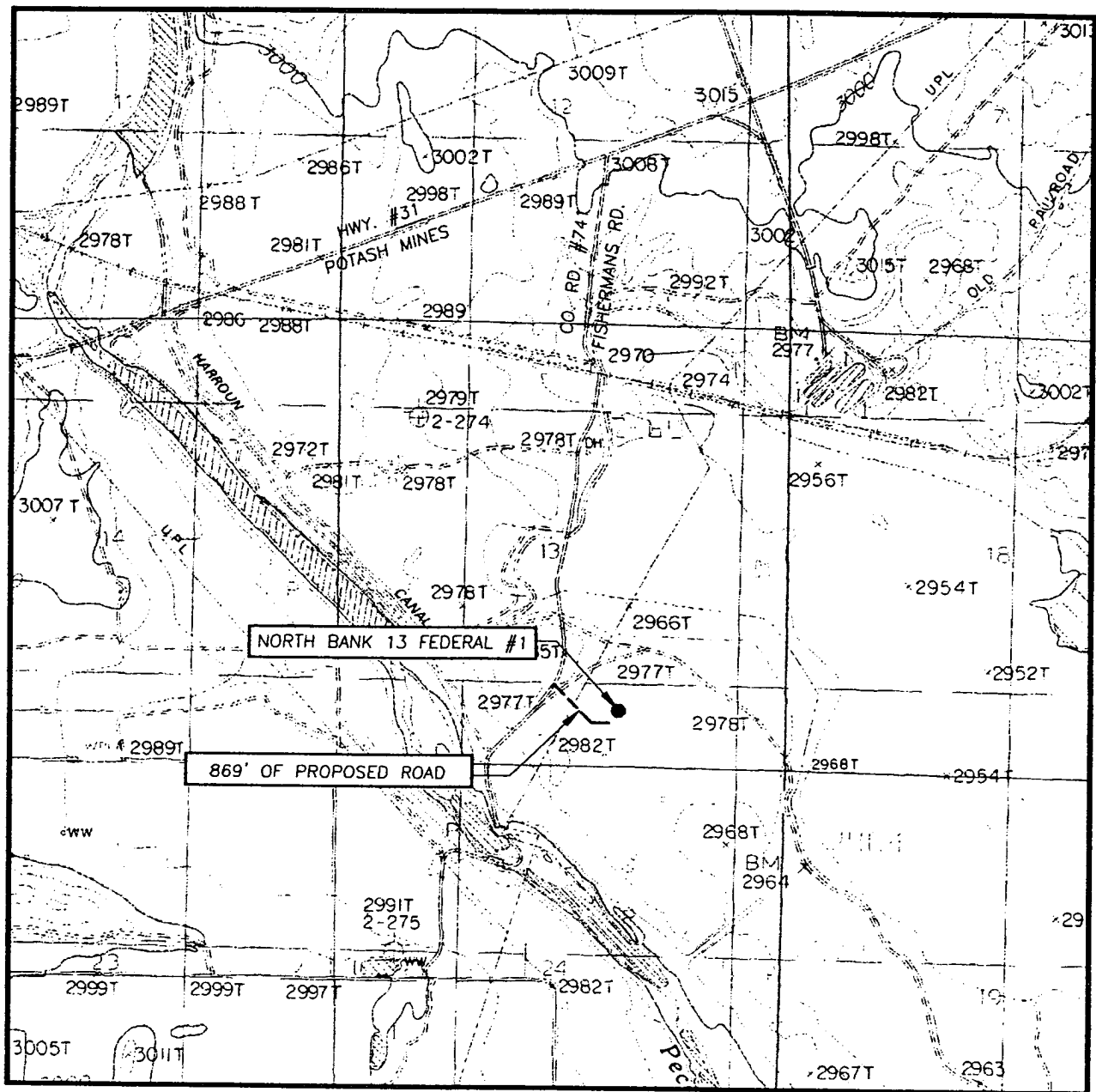
NORTH BANK 13 FEDERAL #1 WELL
 LOCATED 660 FEET FROM THE SOUTH LINE
 AND 1980 FEET FROM THE EAST LINE OF SECTION 13,
 TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.,
 EDDY COUNTY, NEW MEXICO.

Survey Date: 06/01/05	Sheet 1 of 1 Sheets
W.O. Number: 05.11.0823	Dr By: DEL
Date: 06/07/05	Disk: CD#4
05110823	Scale: 1"=100'



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:
LOVING, N.M. - 10'

SEC. 13 TWP. 23-S RGE. 28-E

SURVEY N.M.P.M.

COUNTY EDDY

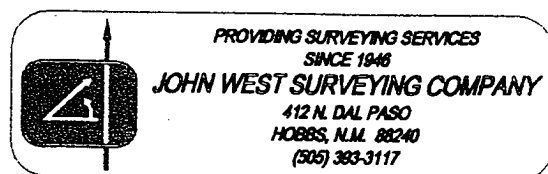
DESCRIPTION 660' FSL & 1980' FEL

ELEVATION 2976'

OPERATOR LATIGO PETROLEUM, INC.

LEASE NORTH BANK 13 FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
LOVING, N.M.



APPLICATION TO DRILL

LATIGO PETROLEUM, INC.
 NORTH BANK "13" FEDERAL # 1
 UNIT "0" SECTION 13
 T23S-R28E EDDY CO. NM

In response to questions asked under Section II of Bulletin NTL-6 the following information on the above well is provided for your consideration.

1. Location of well: 660' FSL & 1980' FEL SECTION 13 T23S-R28E EDDY CO. NM

2. Ground Elevation above Sea Level: 2976' GR.

3. Geological age of surface formation: Quaternary Deposits:

4. Drilling tools and associated equipment: Conventional rotary drilling rig using drilling mud as a circulating medium to remove solids from hole.

5. Proposed drilling depth: 12,000'

6. Estimated tops of geological markers:

Base of Salt	2400'	Wolfcamp	9600'
Delaware Sand	2650'	Strawn	11,460'
Basal Brushy Canyon	5900'	Atoka Clastics	11,700'
Bone Spring	6225'	Atoka Bank	11,820'

7. Possible mineral bearing formations:

Basal Brushy Canyon	Oil
Strawn	Gas
Atoka Clastics	Gas

8. Casing Program:

Hole Size	Interval	OD of Casing	Weight	Thread	Collar	Grade
26"	0-40'	20"	NA	NA	NA	Conductor

APPLICATION TO DRILL

LATIGO PETROLEUM, INC.
 NORTH BANK "13" FEDERAL # 1
 UNIT "O" SECTION 13
 T23S-R28E EDDY CO. NM

9. CASING CEMENTING AND SETTING DEPTHS:

20"	Conductor	Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
13 3/8"	Surface	Set 500' of 13 3/8" 48# H-40 ST&C casing. Cement with 490 Sx. of Class "C" cement + additives, circulate cement to surface.
	WITNESS	
9 5/8"	Intermediate	Set 2640' of 9 5/8" 36# J-55 ST&C casing. Cement with 735 Sx. of Class "C" cement. Circulate cement to surface.
7"	2nd Intermediate	Set 10,800' of 7" 23 & 26# N-80 LT&C casing. Cement with 870 Sx. of Class "H" Premium Plus cement + additives, estimate top of cement 2300'.
4 1/2"	Production Liner	Set 1500' of 4 1/2" 13.5# P-110 LT&C liner from 10,500' to 12,000'. Cement with 145 Sx. of Class "H" premium plus cement + additives top of cement to top of liner hanger.

10. PRESSURE CONTROL EQUIPMENT: Exhibit "E" shows a 1500 Series 5000 PSI working pressure B.O.P. consisting of an annular bag type preventor, middle blind rams and bottom pipe rams. The B.O.P. will be nipped up on the 13 3/8" casing and tested to API specifications. The B.O.P. will be operated at least once in each 24 hour period and the blind rams will be operated when drill pipe is out of hole on trips. Full opening stabbing valve and upper kelly cock will be utilized. Exhibit "E-1" shows a hydraulically operated closing unit and a 3" 5000 PSI choke manifold with dual adjustable chokes. No abnormal pressures or temperatures are expected.

11. PROPOSED MUD CIRCULATING SYSTEM:

DEPTH	MUD WT.	VISC.	FLUID LOSS	TYPE MUD SYSTEM
40-500' <i>see COA</i>	8.4-8.7	29-32	NC	Fresh water use paper to control seepage
500-2640'	10.0-10.2	29-38	NC	Brine water use paper to control seepage and high viscosity sweeps to clean hole.
2640-9500'	10.1-10.2	29-40	NC	Brine water use salt water Gel for viscosity control
9500-10,800	10.1-10.3	32-38	10 cc or less	Same as above use Dris-Pac system to control water loss.
10,800-12,000'	10.1-10.3	32-38	10 cc or less	Same as above.

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run DST's, open hole logs, and casing viscosity and/or water loss may have to be adjusted to meet these needs.

APPLICATION TO DRILL

LATIGO PETROLEUM, INC.
NORTH BANK "13" FEDERAL # 1
UNIT "O" SECTION 13
T23S-R28E EDDY CO. NM

12. LOGGING, COREING, & TESTING PROGRAM:

- A. Open hole logs: Dual Laterolog, SNP. LDT. CNL, MSFL, Gamma Ray, Caliper from TD back to 8 5/8" casing shoe. Gamma Ray, Neutron from 8 5/8" casing shoe back to surface.
- B. Mud logger will be rigged up on hole at 4700' or top of Brushy Canyon.
- C. Cores & DST's will be taken at the discretion of the Geologist.

13. POTENTIAL HAZARDS:

Possible high pressures may be encountered in the Wolfcamp and the Atoka, lost circulation may be encountered in the Delaware. There is no known presence of H₂S in this area, however if it is encountered the operator will comply with the provisions of Onshore Oil & Gas Order # 6. All personnel on the drilling crews will be familiar with all aspects of safe operations of equipment that that is used to operate safely. Estimated BHP 7900 PSI and estimated BHT 190°.

14. ANTICIPATED STARTING DATE & DURATION OF OPERATIONS:

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 become available. Move in operations and drilling of the well is expected to take 45 days. If production casing is run then an additional 30 days will be required 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 production casing, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to cover all possible productive zones. The Atoka formation will be perforated and stimulated in order to establish production. The well will be tested and potentialized as a Gas WELL.

1. All Company and Contract personnel admitted on location must be trained by a qualified H₂S safety instructor to the following:
 - A. Characteristics of H₂S
 - B. Physical effects and hazards
 - C. Proper use of safety equipment and life support systems.
 - D. Principle and operation of H₂S detectors, warning system and briefing areas.
 - E. Evacuation procedure, routes and first aid.
 - F. Proper use of 30 minute pressure demand air pack.
2. H₂S Detection and Alarm Systems
 - A. H₂S detectors and audio alarm system to be located at bell nipple, end of blooie line (mud pit) and on derrick floor or doghouse.
3. Windsack and/or wind streamers
 - A. Windsack at mudpit area should be high enough to be visible.
 - B. Windsack at briefing area should be high enough to be visible.
 - C. There should be a windsack at entrance to location.
4. Condition Flags and Signs
 - A. Warning sign on access road to location.
 - B. Flags to be displayed on sign at entrance to location. Green flag, normal safe condition. Yellow flag indicates potential pressure and danger. Red flag, danger, H₂S present in dangerous concentration. Only emergency personnel admitted to location.
5. Well control equipment
 - A. See exhibit "E" & "E-1"
6. Communication
 - A. While working under masks chalkboards will be used for communication.
 - B. Hand signals will be used where chalk board is inappropriate.
 - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephoned will be available at most drilling foreman's trailer or living quarters.
7. Drillstem Testing
 - A. Exhausts will be watered.
 - B. Flare line will be equipped with an electric ignitor or a propane pilot light in case gas reaches the surface.
 - C. If the location is near to a dwelling a closed DST will be performed.

8. Drilling contractor supervisor will be required to be familiar with the effects H₂S has on tubular goods and other mechanical equipment.
9. If H₂S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H₂S scavengers if necessary.

SURFACE USE PLAN

LATIGO PETROLEUM, INC.
NORTH BANK "13" FEDERAL #1
UNIT "0" SECTION 13
T23S-R28E EDDY CO. NM.

1. EXISTING AND PROPOSED ROADS: Area maps: Exhibit "B" is a reproduction of a County General Hi-way map showing access roads to the location. Exhibit "C" is a reproduction of a USGS Topographic map showing existing roads in close proximity to the location and the proposed access roads. All existing roads will be maintained in a condition equal to or better than their current conditions. All new roads will be constructed to BLM specifications.
 - A. Exhibit "A" shows the location of the proposed well site as staked.
 - B. From Hobbs New Mexico take U.S. Hi-way 62-180 West toward Carlsbad New Mexico go 39± miles to WIPP Road turn (South) go 13 miles to CR-802, turn West (Right) go 3.8± miles to State Hi-way 128, turn West (Right) go 10± miles to State Road 31, turn South (Left) go 2.8± miles to CR-741 (Fishermans Road) go 1.3± miles, location is 860' East of road.
 - C. Topographic map shows possible routes of pipelines to gas sales point.
2. PLANNED ACCESS ROADS: Approximately 900' of new road will be constructed.
 - A. The access road will be crowned and ditched to a 12' wide traveled surface with a 40' Right-Of-Way.
 - B. Gradient on all roads will be less than 5% if possible.
 - C. Turn-outs will be constructed where necessary.
 - D. If needed roads will be surfaced to the BLM requirements with material obtained from a local source.
 - E. Center line of new road will be flagged.
 - F. The new road will be constructed to utilize low water crossings where drainage currently exists, and culverts will be installed where necessary.
3. EXHIBIT "A-1" SHOWS THE BELOW LISTED TYPE WELLS WITHIN A 1 MILE RADIUS:
 - A. Water wells - Water wells in Section 12,13,14,
 - B. Disposal wells - None known
 - C. Drilling wells - None known
 - D. Producing wells - As shown on Exhibit "A-1"
 - E. Abandoned wells - As shown on Exhibit "A-1"

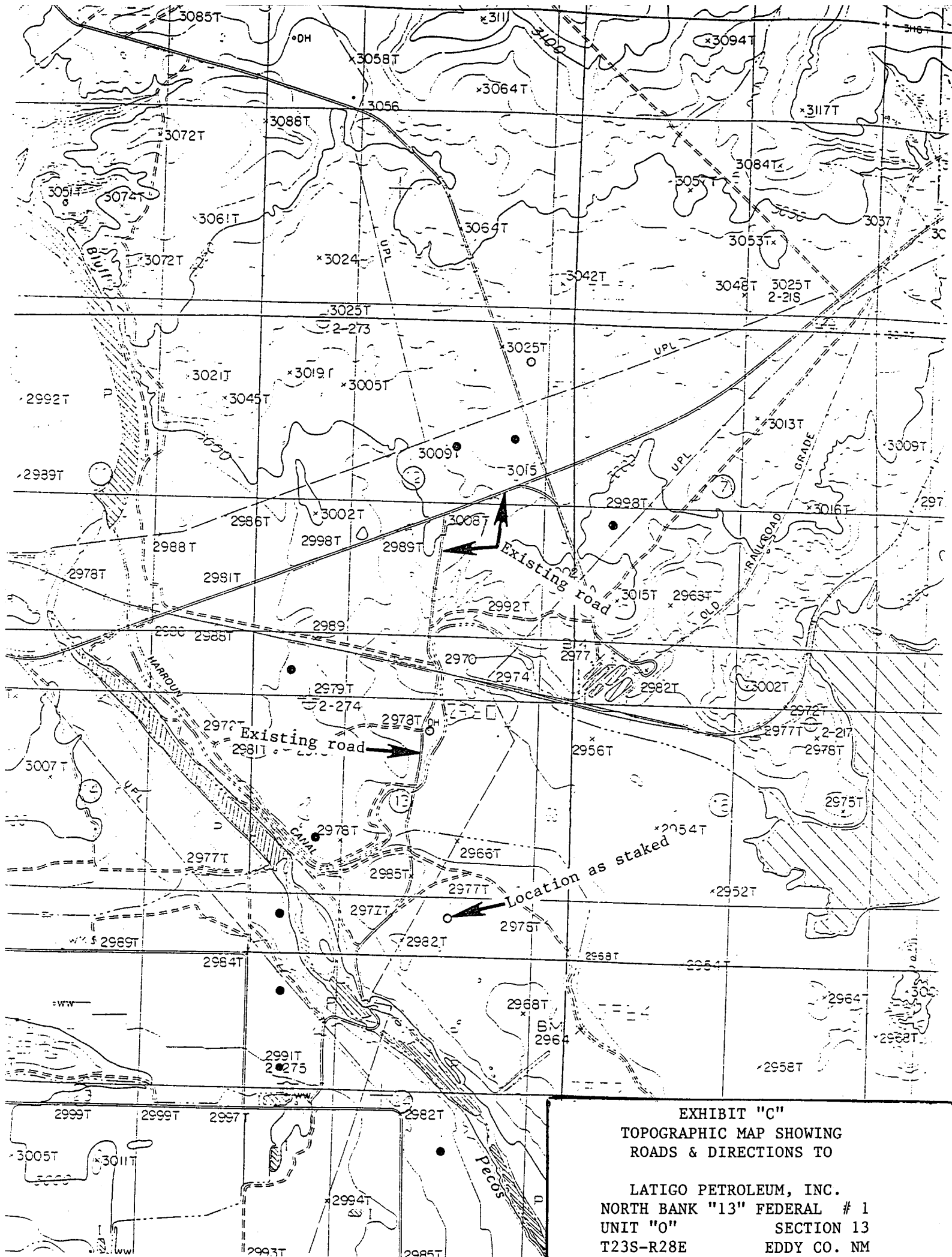
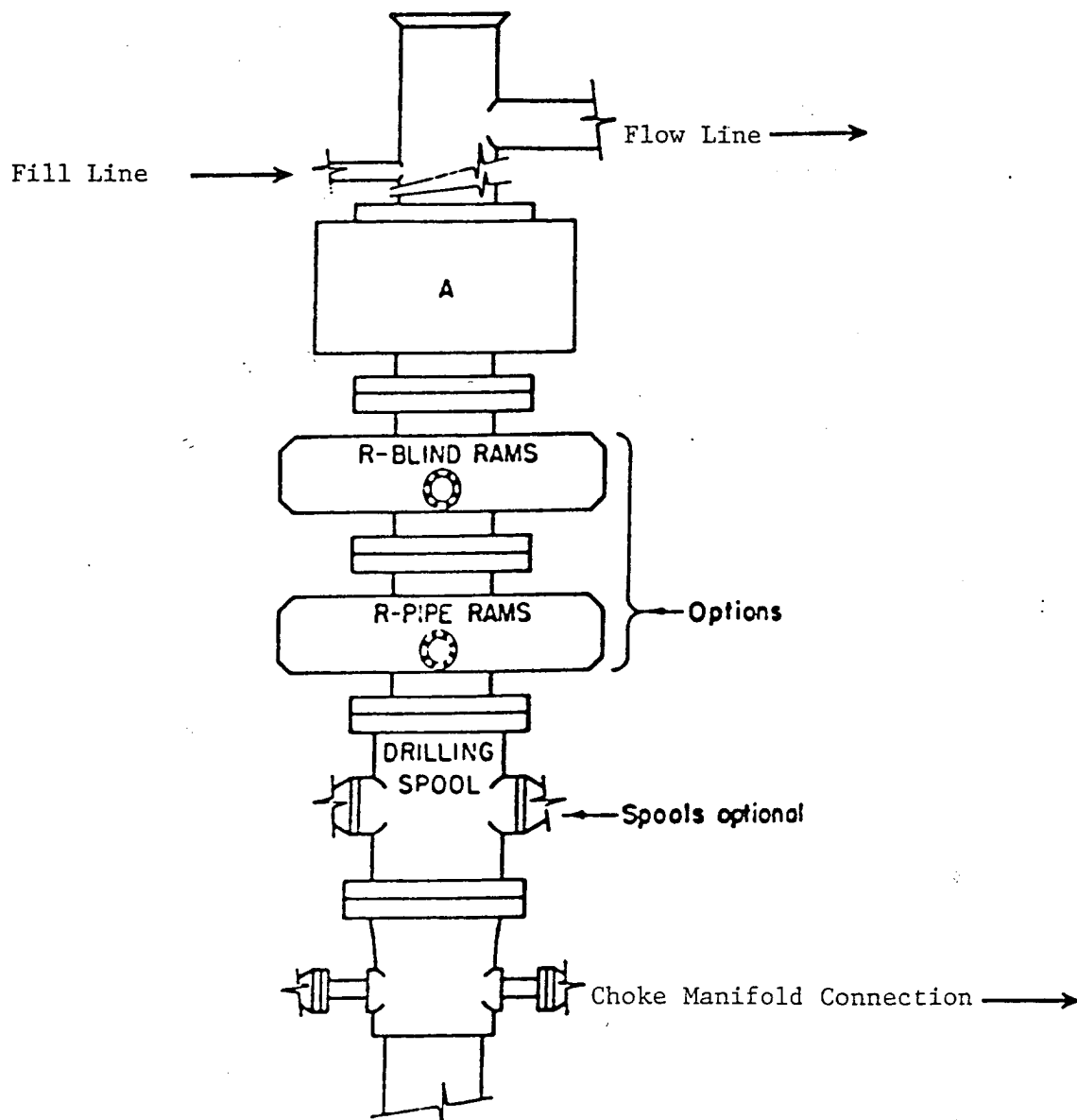


EXHIBIT "C"
TOPOGRAPHIC MAP SHOWING
ROADS & DIRECTIONS TO

LATIGO PETROLEUM, INC.
NORTH BANK "13" FEDERAL # 1
UNIT "O" SECTION 13
T23S-R28E EDDY CO. NM



ARRANGEMENT SRRA

1500 Series
5000 PSI WP

EXHIBIT "E"
SKETCH OF B.O.P. TO BE USED ON

LATIGO PETROLEUM, INC.
NORTH BANK "13" FEDERAL # 1
UNIT "O" SECTION 13
T23S-R28E EDDY CO. NM

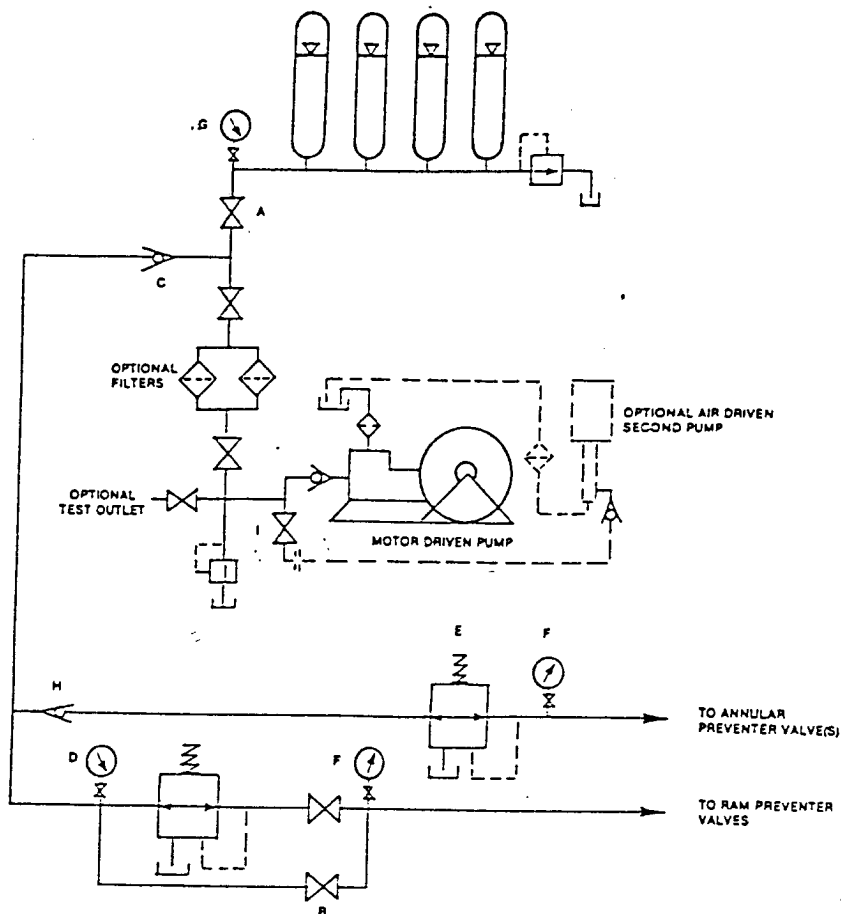


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

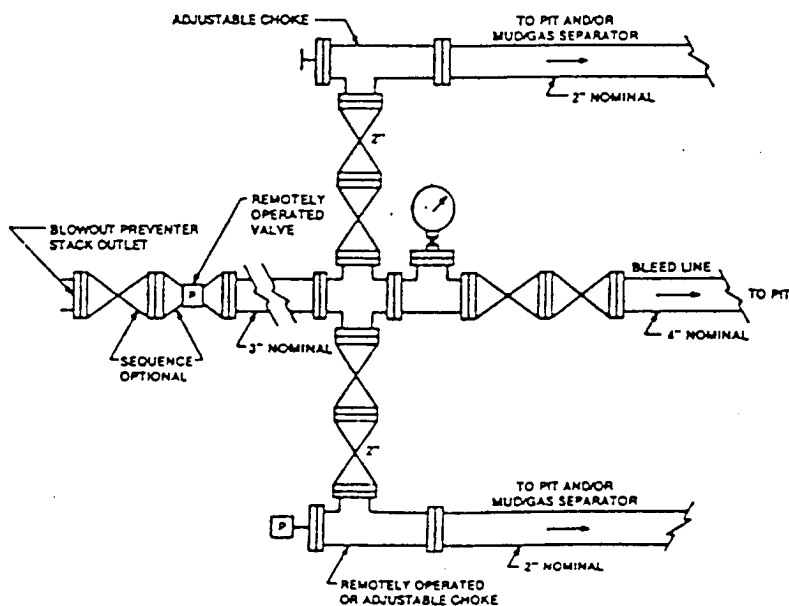
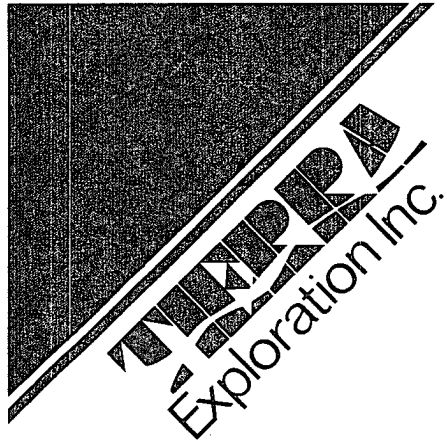


FIGURE K4-2. Typical choke manifold assembly for 5M rated working pressure service — surface installation.

EXHIBIT "E-1"
CHOKE MANIFOLD & CLOSING UNIT

LATIGO PETROLEUM, INC.
NORTH BANK "13" FEDERAL # 1
UNIT "O" SECTION 13
T23S-R28E EDDY CO. NM



RECEIVED

2005 AUG -9 AM 10:49

BUREAU OF LAND MANAGEMENT
ROSWELL OFFICE

08/08/05

BUREAU OF LAND MANAGEMENT
ROSWELL FIELD OFFICE
2909 WEST SECOND STREET
ROSWELL, NEW MEXOCO 88201-2019

Att: Ms. Askwig.

Re: Surface owner agreement for:
Latigo Petroleum, Inc.
North Bank "13" Federal # 1
E/2 of Section 13 T23S-R28E
Eddy Co. NM

Dear Ms. Askwig:

Latigo Petroleum, Inc. has made an agreement with IMC Potash Carlsbad, Inc. to compensate them for damages to the surface that may occur while drilling their North Bank "13" Federal # 1 well located in the E/2 of Section 13 T23S-R28E Eddy Co. New Mexico.

Sincerely,


Joe T. Janica

Agent for Latigo Petroleum, Inc.

CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Latigo Petroleum, Inc.
Well Name & No. North Bank 13 Federal #1
Location: 660' FSL, 1980' FEL, Section 13, T. 23 S., R. 28 E., Eddy County, New Mexico
Lease: NM-106689

I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 for wells in Eddy County in sufficient time for a representative to witness:
 - A. Well spud
 - B. Cementing casing: 13-3/8 inch 9-5/8 inch 7 inch 4-1/2 inch liner
 - C. BOP tests
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.
3. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15-day time frame.
4. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.
5. A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.

II. CASING:

1. The 13-3/8 inch surface casing shall be set at between 350 -375 feet and cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.
2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is to be circulated to the surface.
3. The minimum required fill of cement behind the 7 inch production casing is to reach at least 500 feet above the top of the uppermost hydrocarbon productive interval.
4. The minimum required fill of cement behind the 4-1/2 inch production liner is to be circulated to the top of the liner.

III. PRESSURE CONTROL:

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the 13-3/8 inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.
2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 5000 psi.

7/13/2005

acs

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.

- The tests shall be done by an independent service company.
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in a safe workman-like manner. Hard line connections shall be required.

IV. DRILLING MUD:

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented. Monitoring equipment shall consist of the following:

- Recording pit level indicator to indicate volume gains and losses.
- Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
- Flow-sensor on the flow-line to warn of abnormal mud returns from the well.

acs -7/13/05