

Resubmit APD

Previous approval: April 5, 2004

Form 3160-3
(August 1999)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM-0559539
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Harvard Petroleum Corp.		7. If Unit or CA Agreement, Name and No.
3a. Address P.O. Box 936 Roswell, NM 88202		8. Lease Name and Well No. <5073> James Federal, Well No. 8
3b. Phone No. (include area code) 505 523-1581		9. API Well No. 30-025-38024
4. Location of Well (Report location clearly and in accordance with State requirements. *) At surface 330' FSL & 2310' FEL At proposed prod. zone same		10. Field and Pool, or Exploratory Sand Dune Se. Delaware west
11. Sec., T., R., M., or Blk. and Survey or Area Sec. 29-T23S-R32E		11. Sec., T., R., M., or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office* 36.5 miles east of Carlsbad, NM		12. County or Parish Lea
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330'		13. State NM
16. No. of Acres in lease 1440		17. Spacing Unit dedicated to this well 40
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 679		20. BLM/BIA Bond No. on file NM-1109
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3672' GL		22. Approximate date work will start* August 14, 2006
23. Estimated duration 3 - 4 weeks		24. Attachments Carlsbad Controlled Water Bank

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

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

25. Signature <i>George R. Smith</i>	Name (Printed/Typed) George R. Smith	Date 6/19/06
Title Agent for: Harvard Petroleum Corp.		
Approved by (Signature) <i>/s/ James Stovall</i>	Name (Printed/Typed) James Stovall	Date AUG 09 2006
Title ACTING 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 1 YEAR

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 reverse)

Lease Responsibility Statement: Harvard Petroleum Corp. accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof.

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED*George R. Smith*
George R. Smith, agent

Witness Surface Casing

District I
1825 N. French Dr. Hobbs, NM 88240

District II
811 South First, Artesia, NM 88210

District III
1000 Rio Brazos Rd., Aztec NM 87410

District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources

OIL CONSERVATION DIVISION

2040 South Pacheco
Santa Fe, N M 87505

Form C-102

Revised March 17, 1999
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025-38064	Pool Code 53818 59945	Pool Name Triste Draw Sand Dunes So., Delaware West
Property Code 5013	Property Name JAMES FEDERAL	Well Number 8
OGRID No. 10155	Operation Name HARVARD PETROLEUM CORP.	Elevation 3681

Surface Location

UL or Lot No. 0	Section 29	Township 23-S	Range 32-E	Lot Idn.	Feet from the 330	North/South line SOUTH	Feet from the 2310	East/West line EAST	County LEA
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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 40	Joint or Infill	Consolidation Code	Order No.						

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

	OPERATOR CERTIFICATION I HEREBY CERTIFY THAT THE INFORMATION HEREIN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.
	Signature <i>George R. Smith</i>
	Printed Name George R. Smith
	Title agent
	Date 6/19/06
	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 KNOWLEDGE AND BELIEF.
	Date of Survey JUNE 21, 2002
	Signature and Seal of Professional Surveyor

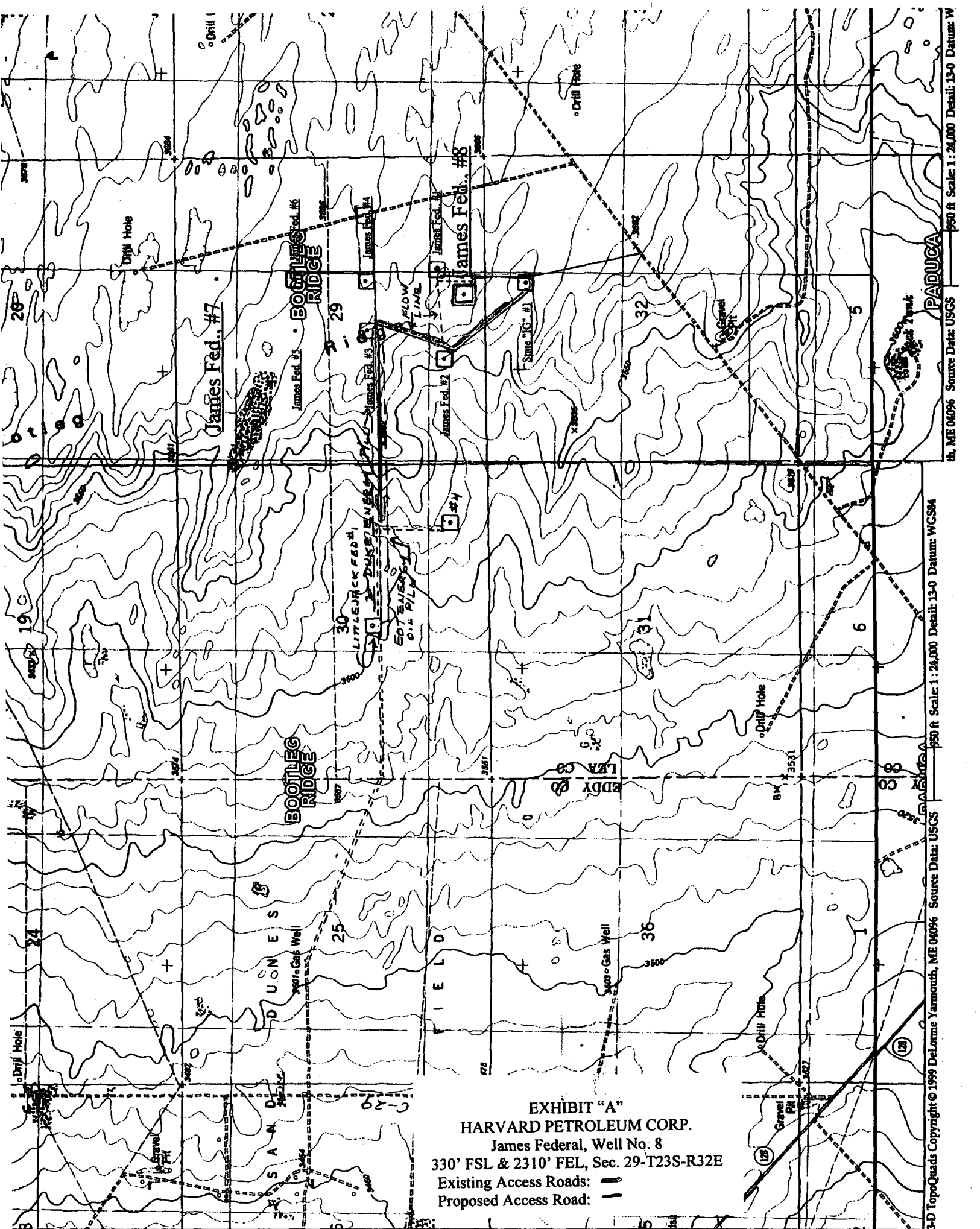
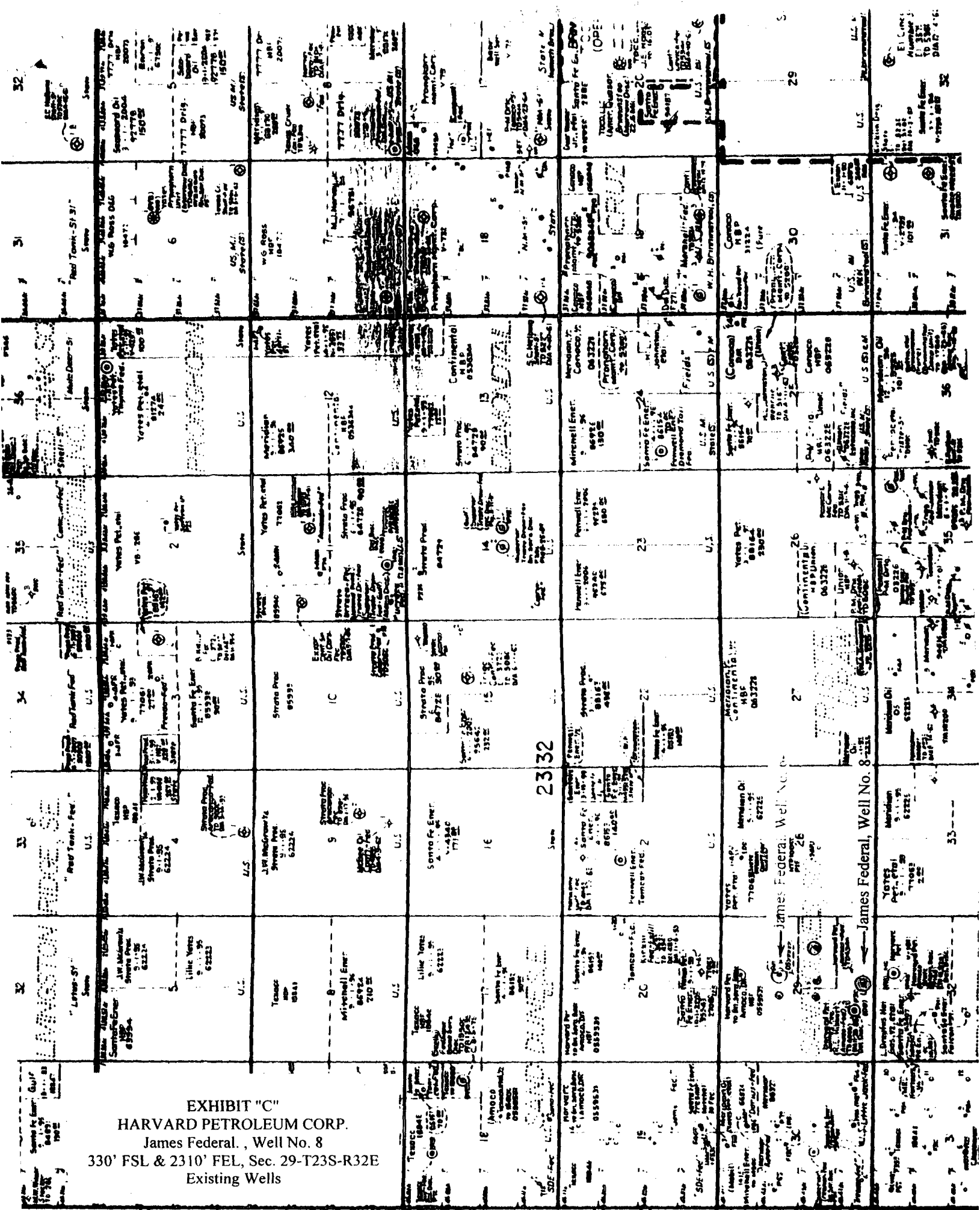


EXHIBIT "A"
 HARVARD PETROLEUM CORP.
 James Federal, Well No. 8
 330' FSL & 2310' FEL, Sec. 29-T23S-R32E
 Existing Access Roads: ———
 Proposed Access Road: ———

EXHIBIT "C" HARVARD PETROLEUM CORP.

James Federal, Well No. 8
330' FSL & 2310' FEL, Sec. 29-T23S-R32E
Existing Wells



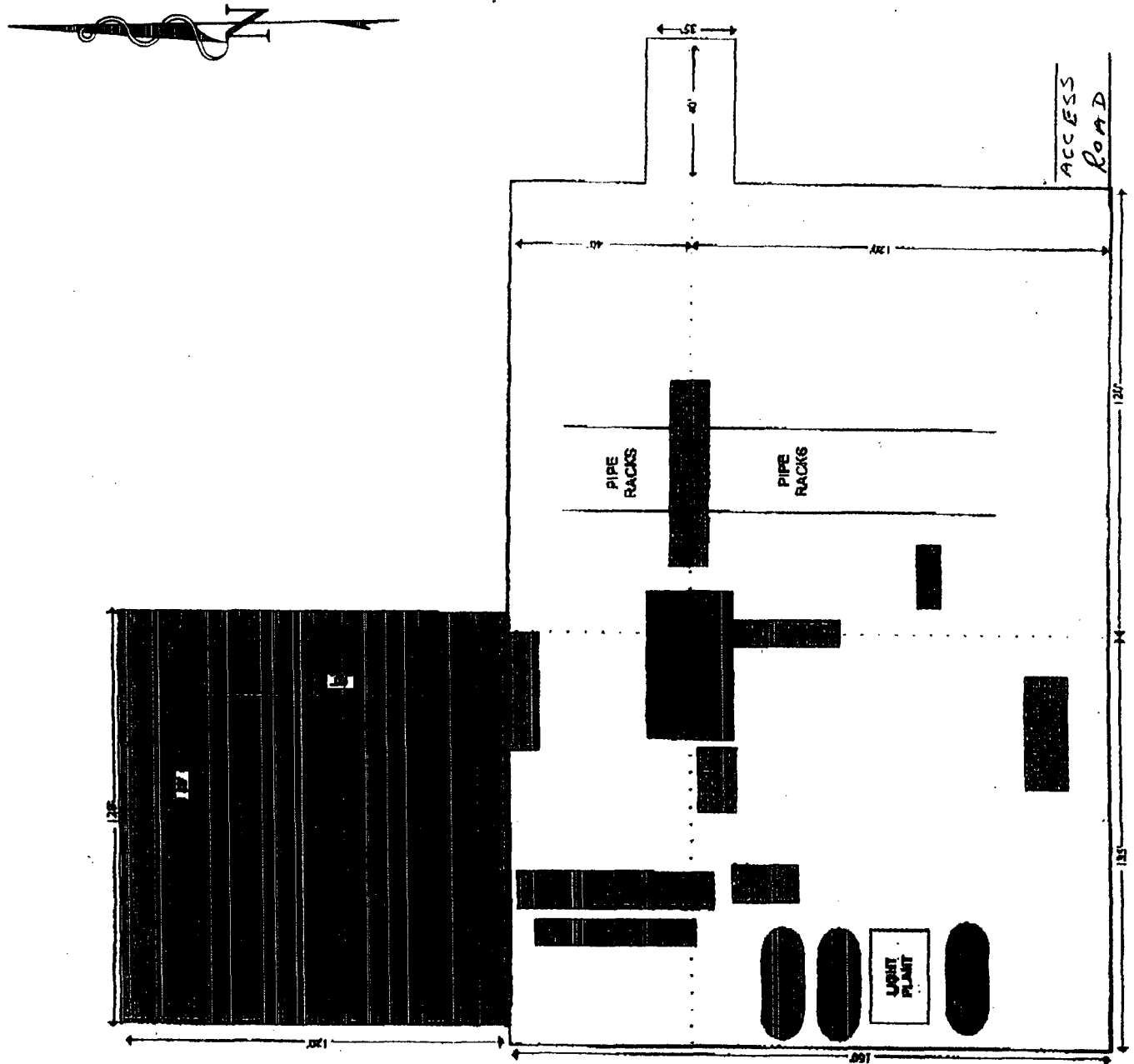


EXHIBIT "D"
HARVARD PETROLEUM CORP.
James Federal, Well No. 8
Pad & Pit Layout

RIG #

BLOWOUT PREVENTOR ARRANGEMENT

2M SYSTEM

10" SHAFFER TYPE "E", 3000 psi WP

80 GALLON, 4 STATION KOOMEY ACCUMULATOR

3000 psi WP CHOKE MANIFOLD

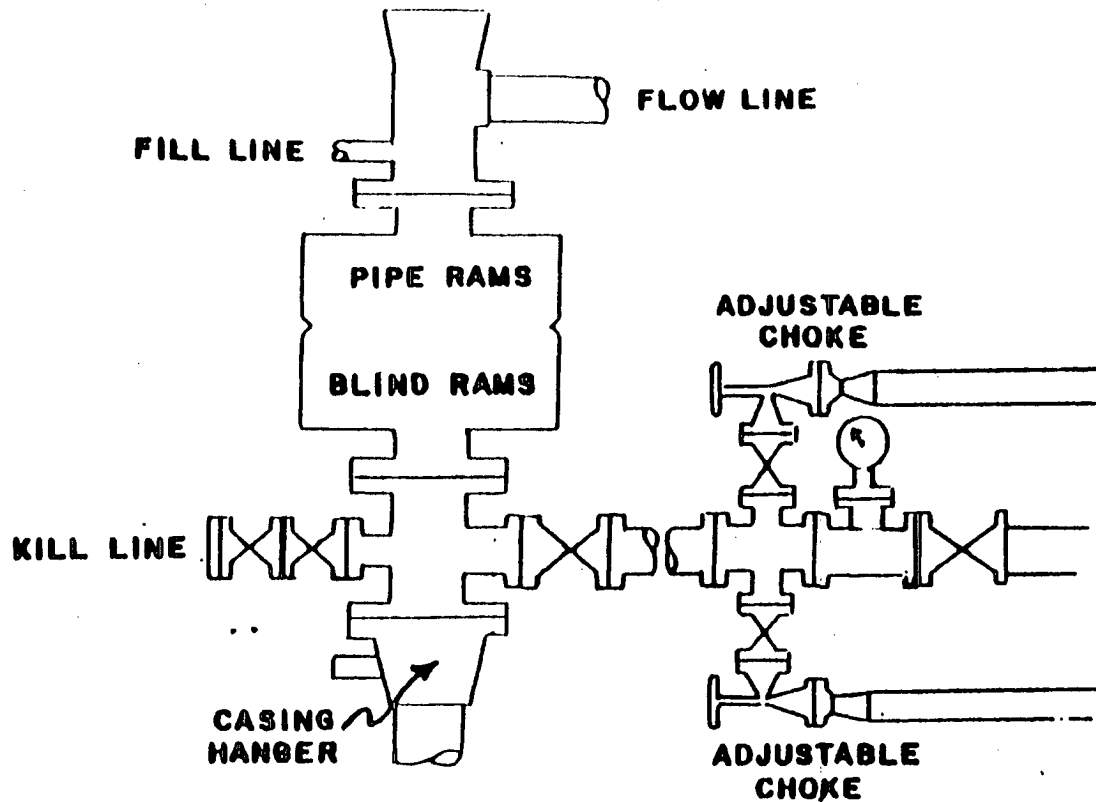


EXHIBIT "E"
HARVARD PETROLEUM CORP.
James Federal, Well No. 8
BOP Specifications

APPLICATION FOR DRILLING

HARVARD PETROLEUM CORP.

James Federal, Well No. 8
330' FSL & 2310' FEL, Sec. 29-T23S-R32E
Lea County, New Mexico
Lease No.: NM-0559539
(Development Well)

In conjunction with Form 3160-3, Application for Permit to Drill subject well, Harvard Petroleum Corp. submits the following items of pertinent information in accordance with BLM requirements:

1. The geologic surface formation is recent Permian with quaternary alluvium and other surficial deposits.
2. The estimated tops of geologic markers are as follows:

Rustler	1120'	Lower Brushy Canyon	8220'
Salt	1470'	Bone Spring	8470'
Delaware	4640'	Bone Spring Sand	8560'
Cherry Canyon	5660'	T.D.	8700'
Brushy Canyon	7300'		

3. The estimated depths at which water, oil or gas formations are anticipated to be encountered:

Water: Surface water between 100' - 300'.

Oil: Possible in the Delaware 4640 - 8500' and the Bone Spring below 8500'.

Gas: None expected.

4. Proposed Casing Program:

HOLE SIZE	CASING SIZE	WEIGHT	GRADE	JOINT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8"	54.5#	J-55	ST&C	555'	Circ. 400 sx "C"
12"	8 5/8"	24.0#	J-55	ST&C	2,500'	
12"	8 5/8"	32.0#	J-55	ST&C	4,500'	Circ. 1200 sx 35/65 Poz + 100 sx "H"
7 7/8"	5 1/2"	15.5#	K-55	LT&C	6,850'	450 sx 35/65/ Poz + 100 sx "C" neat
7 7/8"	5 1/2"	15.5#	K-55	LT&C	8,700'	400 sx 15/61/11 Poz-C-CSE

5. **Proposed Control Equipment:** A 12" 3000 psi wp Shaffer Type "E" BOP will be installed on the 13 3/8" casing. Casing and BOP will be tested before drilling out with 7 7/8", according to Onshore Oil & Gas Order No. 2 and will be tested weekly. Request variance in testing to the maximum expected surface pressure of 1914 psi.

6. **MUD PROGRAM:** 1171' JSS

		MUD WEIGHT	VIS.	W/L CONTROL
0' - 550'	Fresh water w/gel spud mud:	8.4 - 9.0 ppg	32 - 38	No W/L control
550' - 4500'	Cut Brine w/gel & lime:	9.0 - 10.0 ppg	28 - 30	No W/L control
4500' - 8700'	Fresh Wtr w/gel & starch:	8.4 - 8.8 ppg	29 - 31	W/L control 12-15 cc +/-

7. **Auxiliary Equipment:** Blowout Preventer, Kelly cock, flow sensors and stabbing valve.

8. Testing, Logging, and Coring Program:

Drill Stem Tests: None unless conditions warrant.

Logging: T.D. to 4500': GR-CNL-LDT-DLL

T.D. to Surface: GR-Neutron

Coring: Rotary sidewall as dictated by logs.

HARVARD PETROLEUM CORP.

James Federal, Well No. 8

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9. No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered the proposed mud program will be modified to increase the mud weight. Estimated evacuated BHP = 3480 psi and a surface pressure of 1914 psi with a temperature of 147°.
10. H₂S: None expected. None in previous wells.
11. Anticipated starting date: August 14 2006
Anticipated completion of drilling operations: Approximately 4 – 5 weeks.

CONDITIONS OF APPROVAL - DRILLING

Well Name & No. 8 – JAMES FEDERAL
Operator's Name: HARVARD PETROLEUM CORP.
Location: 330' FSL & 2310' FEL – SEC 29 – T23S – R32E – LEA COUNTY
Lease: NM-0559539

I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Roswell Field Office, 2909 West Second St., Roswell NM 88201, (505) 627-0272 for wells in Chaves and Roosevelt Counties; the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 234-5909 or (505) 361-2822 (After hours) - for wells in Eddy County; and the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612 for wells in Lea County, in sufficient time for a representative to witness:

A. Spudding

B. Cementing casing: 13-3/8 inch 8-5/8 inch 5-1/2 inch

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.

II. CASING:

1. The 13-3/8 inch surface casing shall be set at 555 feet, below usable water 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. **Note: The operator will use the Alternative Conditions of Approval – Drilling (attached).**

2. The minimum required fill of cement behind the 8-5/8 inch intermediate casing is **circulate cement to the surface.**

3. The minimum required fill of cement behind the 5-1/2 inch production casing is **cement shall extend upward a minimum of 500 feet above the uppermost hydrocarbon bearing interval.**

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) is 2000 psi.

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.

ALTERNATIVE CONDITIONS OF APPROVAL - DRILLING

Drilling Fluids, Casing and Cementing Requirements for Most of Lea County:

Casing and Cementing

Surface casing is to be set at a sufficient depth to protect useable water zones and cement circulated to surface. In areas where the salt section (Salado) is present, surface casing should be set at least 25 feet into the top of the Rustler Anhydrite and cement circulated to the surface.

As an alternative, surface casing may be set through the Santa Rosa Formation or other potable water bearing zones and circulate cement to surface. For wells requiring an intermediate casing string, such string shall be cemented to the ground surface. In the case where intermediate casing is not required the operator shall case and cement the production hole to the ground surface.

While drilling from the surface casing to the Rustler formation it is recommended that operators periodically sweep the hole with viscous low water loss pills to help build a filter cake across useable water zones in the redbeds.

Drilling Fluid

Fresh water or fresh water spud mud shall be used to drill to surface casing depth. If surface casing is set at a lesser depth than the top of the Rustler formation, fresh water spud mud may be used to drill down to the first salt in the Rustler Formation. after which brine or fresh water may be used.

Non-toxic or biodegradable water based polymers, drilling paper, starch and gels may be used in the mud system in order to retard seepage into the redbeds.

Two to five percent diesel or crude oil may be used in the redbed section in order to control heaving shales and mudstones.

Caustics and Lime shall not be used in the red beds but may be added when the Rustler formation is reached. However, sodium carbonate maybe used for alkalinity or ph control while drilling the redbeds above the Rustler formation.

Additionally, questions of whether an additive may be used should be referred to the Roswell Field office.

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
March 12, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒

Type of action: Registration of a pit or below-grade tank ☒ Closure of a pit or below-grade tank ☐

Operator: Harvard Petroleum Corp. Telephone: (505) 623-1581 e-mail address: _____

Address: P.O. Box 936 Roswell, NM 88202

Facility or well name: James Federal Well No. 8 API #: 30-025-38064 U/L or Qtr/Qtr SW4SE4 Sec 29 T 23S R 32E

County: Lea Latitude N 32°16.142" Longitude W 103°41.780" NAD: 1927 X 1983 Surface Owner Federal ☒ State ☐ Private ☐ Indian ☐

Pit
Type: Drilling ☒ Production ☐ Disposal ☐
Workover ☐ Emergency ☐
Lined ☒ Unlined ☐
Liner type: Synthetic ☐ Thickness 12 mil Clay ☐ Volume 10,000
+/- bbl

Below-grade tank
Volume: bbl Type of fluid: _____
Construction material: _____
Double-walled, with leak detection? Yes ☐ If not, explain why not.

Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet	(20 points)
	50 feet or more, but less than 100 feet	(10 points)
	100 feet or more	(0 points)
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes	(20 points)
	No	(0 points)
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet	(20 points)
	200 feet or more, but less than 1000 feet	(10 points)
	1000 feet or more	(0 points)
Ranking Score (Total Points)		-0-

If this is a pit closure: (1) attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: onsite ☐ offsite ☐ If offsite, name of facility _____ (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface _____ ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines X, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Date: June 19, 2006

Printed Name/Title George R. Smith, Agent for Harvard Petroleum Corp.

Signature George R. Smith

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:

Date: AUG 15 2006 PETROLEUM ENGINEER

Printed Name/Title

Signature [Signature]