Form 3160-3
(July 1992)

N. M. Oil Cons. Division
SUBMIT IN TRIPLICATE
(Other instructions on reverse side)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ]

b. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] OTHER — SINGLE ZONE [ ] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR
MURCHISON OIL & GAS, INC. 15363

3. ADDRESS AND TELEPHONE NO.
1445 ROSS AVE., STE. 5300, LB 152, DALLAS, TX. 75202-2883

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1650' FSL & 660' FWL NW/SW
At proposed prod. zone: Unit L

5. LEASE DESIGNATION AND SERIAL NO.: NM 19593

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME: 96169

8. FARM OR LEASE NAME, WELL NO.: BLACK RIVER FEDERAL #1

9. API WELL NO.: 30-015-31182

10. FIELD AND POOL, OR WILDCAT: WHITE CITY PENN

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: SEC 34, T24S, R26E

12. COUNTY OR PARISH: EDDY 13. STATE: NM

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 20 MILES SOUTH OF CARLSBAD, NEW MEXICO

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
660'	COMMUNITIZED	640
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
2213'	11600'	ROTARY

21. ELEVATIONS (Show whether DF, RT, GR, etc.): GL = 3330'

22. APPROX. DATE WORK WILL START*: 5/1/2000

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8"	68 #/FT	270	300 SXS CIRCULATE TO SURFACE
12 1/4"	9 5/8"	36 #/FT	1860	600 SXS CIRCULATE TO SURFACE
8 3/4"	7 5/8"	33.7 #/FT	8600	1000SXS
6 1/2"	5 1/2"	20 #/FT	8300'-11600'	340 SXS

WITNESS

IT IS PROPOSED TO DRILL THIS WELL TO A TD OF 11600' AND TEST THE MORROW FORMATION, THE BLOWOUT PREVENTION PROGRAM IS AS FOLLOWS:

1) ONE SET OF DRILL PIPE RAMS (5M)
2) ONE SET OF BLIND RAMS (5M)
3) ONE SET OF HYDRIL (3M)

RECEIVED

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS

NSL-
R-11402

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.

SIGNED Michael O'Dwyer TITLE VICE PRESIDENT OPERATIONS DATE 3/28/00

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

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:

/S/ LARRY D. BRAY

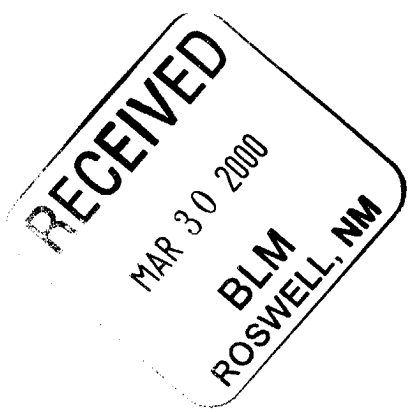
Assistant Field Manager,
Lands And Minerals

APPROVED BY _____ TITLE _____ DATE _____

*See Instructions On Reverse Side

APPROVED FOR 1 YEAR

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the


RECEIVED
MAR 30 2000
BLM
ROSWELL, NM

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II
P.O. Drawer DD, Artesia, NM 88211-0719

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

DISTRICT IV
P.O. BOX 2088, SANTA FE, N.M. 87504-2088

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised February 10, 1994
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name

Property Code	Property Name	Well Number
	BLACK RIVER FEDERAL	1
OGRID No.	Operator Name	Elevation
	MURCHISON OIL & GAS, INC.	3330

Surface Location

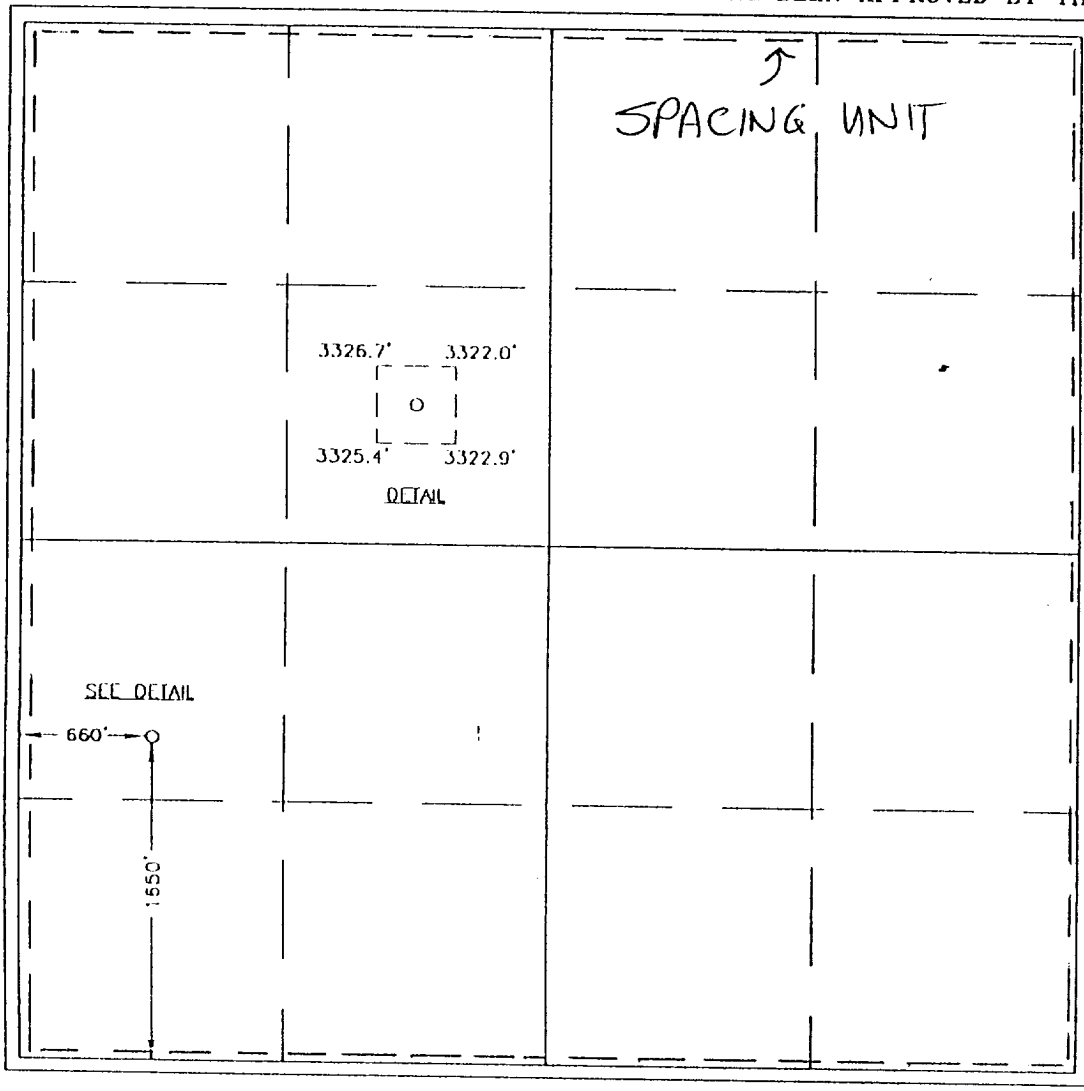
Ul. or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	34	24 S	26 E		1650	SOUTH	660	WEST	EDDY

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.
640			

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



OPERATOR CERTIFICATION

I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.

Signature

MICHAEL S. DAUGHERTY
Printed Name

VICE PRESIDENT OPERATIONS
Title

3/28/00
Date

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 supervison, and that the same is true and correct to the best of my belief.

FEBRUARY 10, 2000
Date Surveyed DC

Signature & Seal of Professional Surveyor

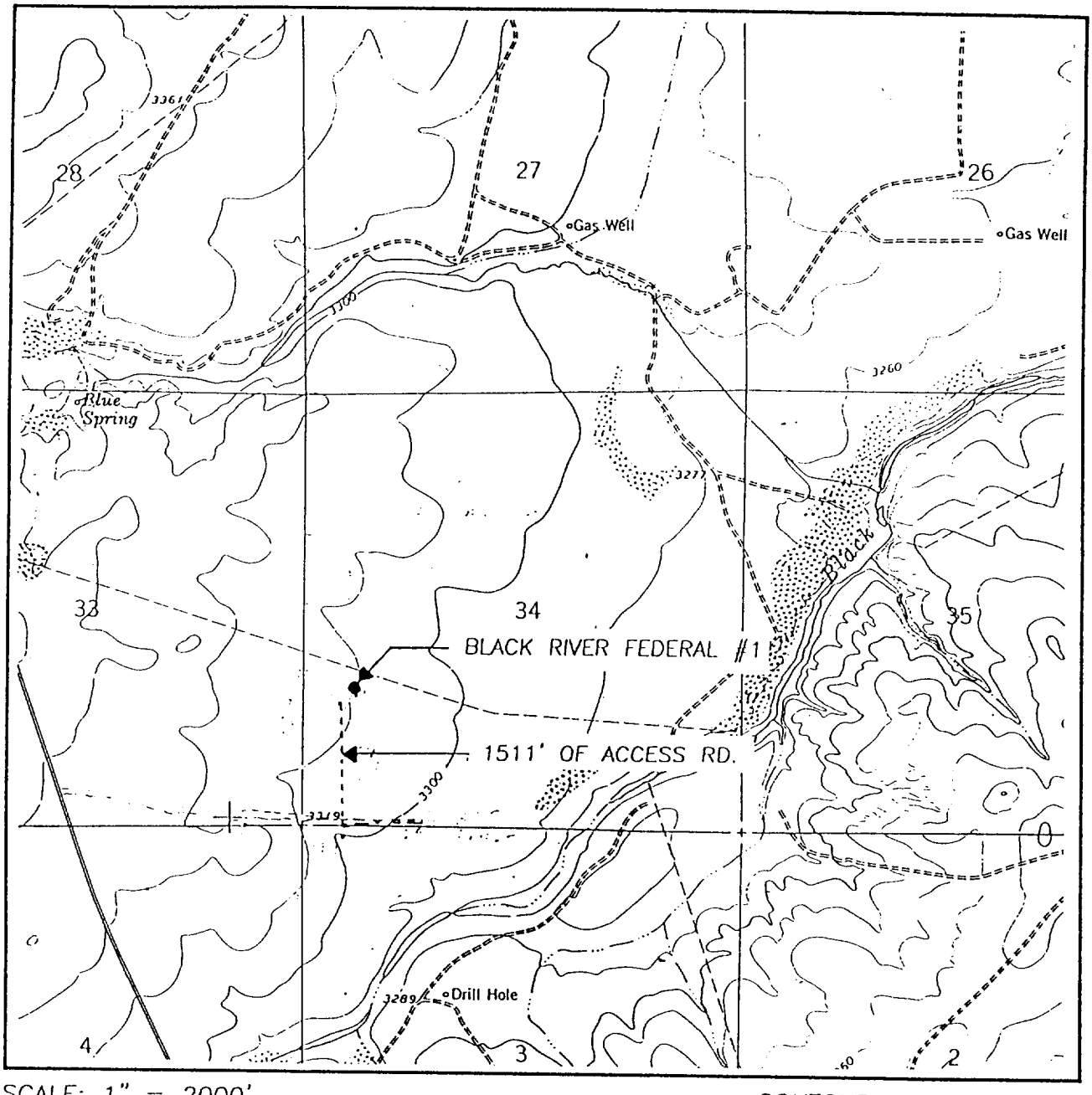
RONALD J. EIDSON
NEW MEXICO

2/15/2000

00-11-0197

Certificate No. RONALD J. EIDSON 3239
GARY EIDSON 12641
MACON McDONALD 12185

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
BLACK RIVER VILLAGE – 20'

SEC. 34 TWP. 24-S RGE. 26-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 1650' FSL & 660' FWL

ELEVATION 3330

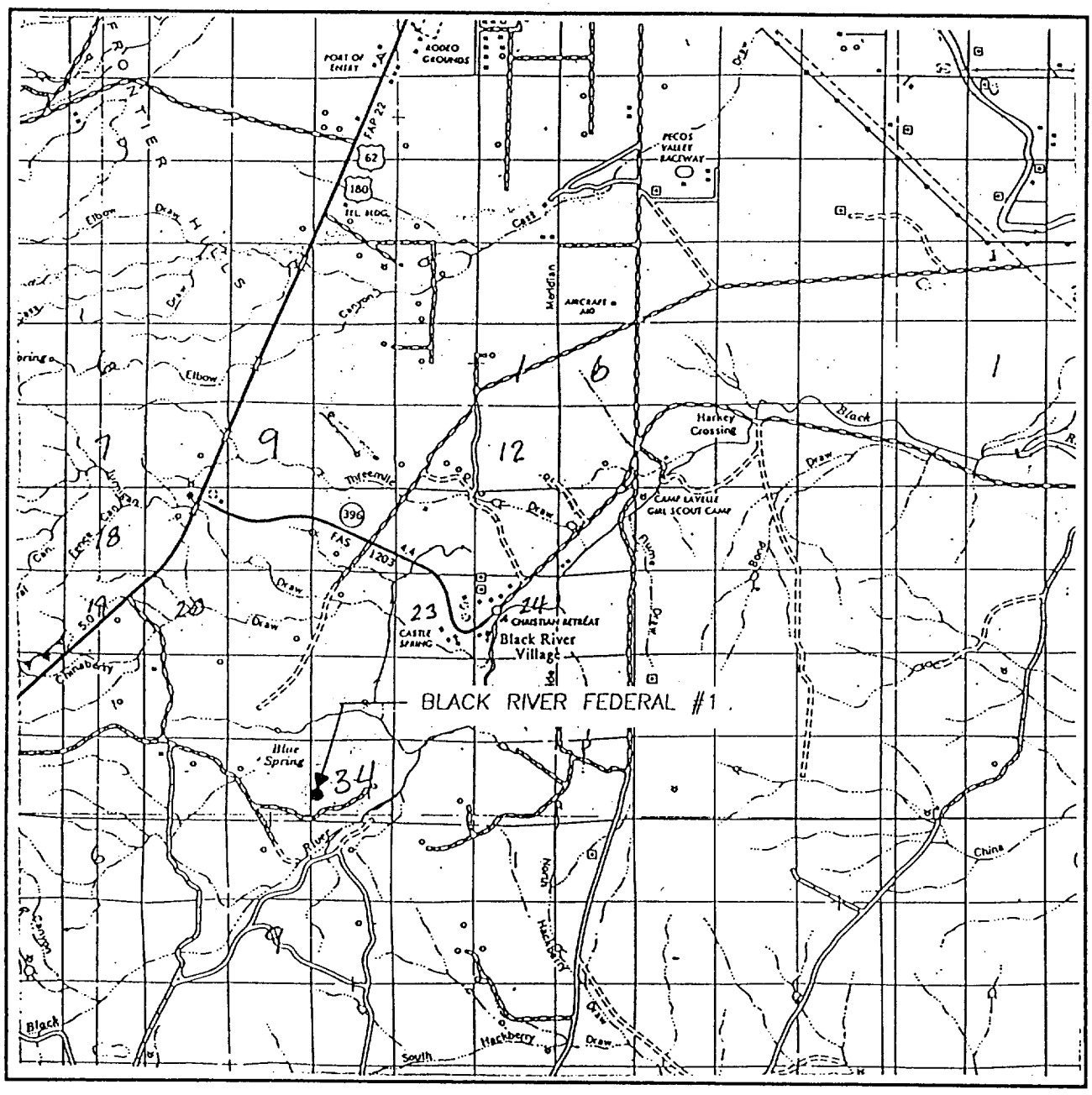
OPERATOR MURCHISON OIL & GAS, INC.

LEASE BLACK RIVER FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
BLACK RIVER VILLAGE, N.M.

JOHN WEST SURVEYING
HOBBS, NEW MEXICO
(505 393-3117

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 34 TWP. 24-S RGE. 26-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 1650' FSL & 660' FWL

ELEVATION 3330

OPERATOR MURCHISON OIL & GAS, INC.

LEASE BLACK RIVER FEDERAL

JOHN WEST SURVEYING
HOBBS, NEW MEXICO
(505 393-3117

1/8/99

Patterson Drilling Company

Rig #18

14,500'

DRAWWORKS
Brewster N-46
Brake: V80 Double Parmac
Twin Disc Torque Converter

ENGINES
Two Caterpillar 3408 Diesels, 475 HP ea

DERRICK
Pyramid 136', 800,000# Rated Capacity

SUBSTRUCTURE
Pyramid 18', 800,000# Setback Capacity
KB – 19', Rotary Clearance – 15'

MUD PUMPS
Pump #1: Ideco 700 w/Cat 379
Pump #2: Brewster B-750 w/Cat 379

DRILL STRING
4-1/2" Grade E, New, 20# Drill Pipe
6-1/2" New Drill Collars
Other sizes of drill pipe and drill collars are available

BLOWOUT PREVENTERS
13 5/8" 5,000# Ram/Ram/Annular Shaffer SL

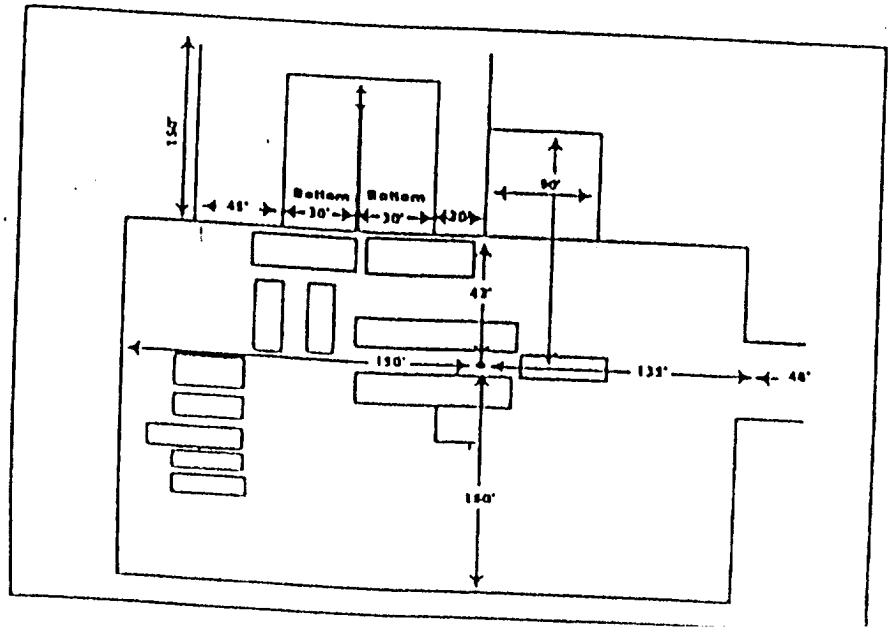
MUD SYSTEM
Shale pit, 560 bbls, suction pit, 560 bbls, 5 sub guns, 2 electric mud stirrers, 2 mud mixing pumps (6x8 centrifugal), two 70 HP electric motors, double screen high-speed vibrating shale shaker

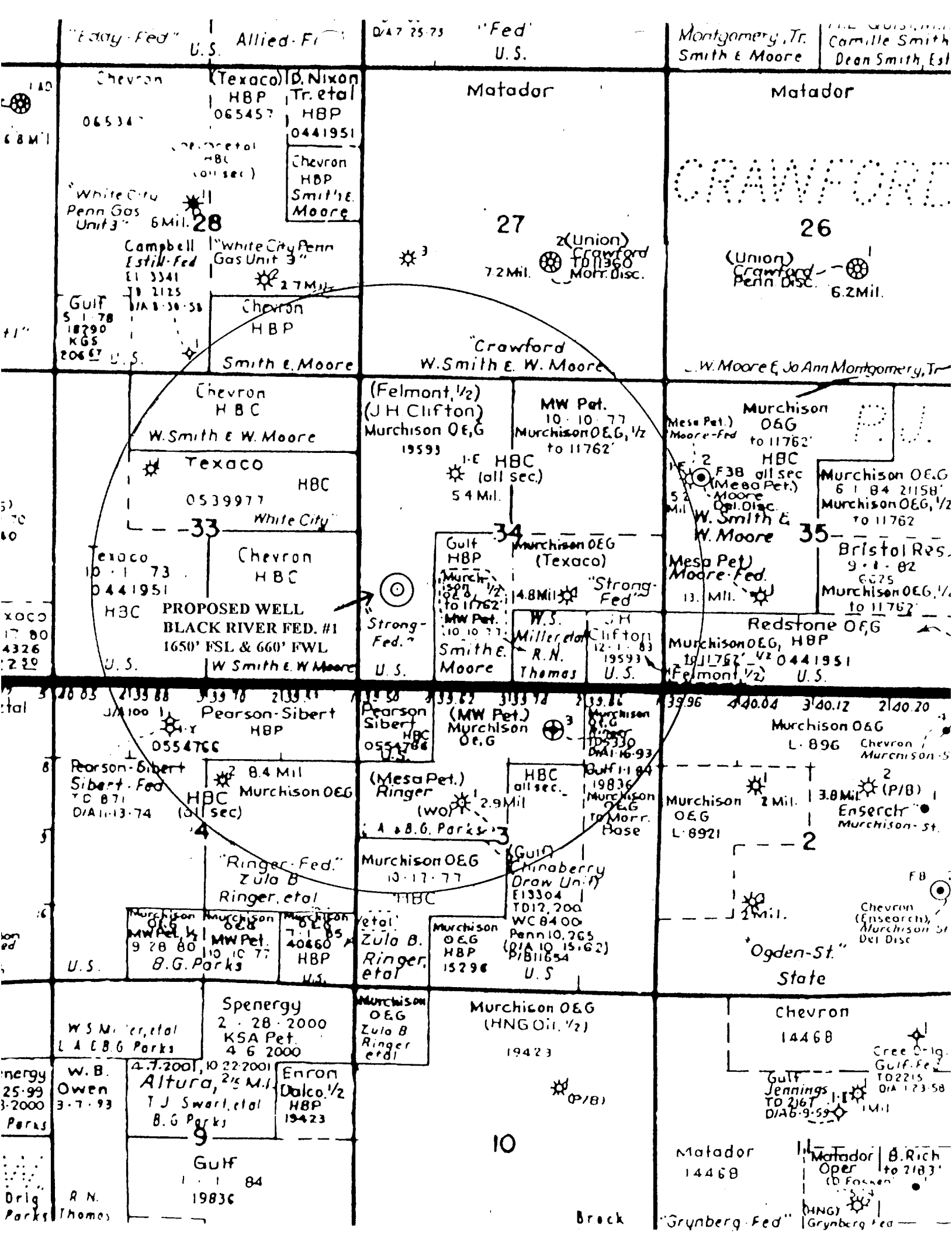
MUD HOUSE
None

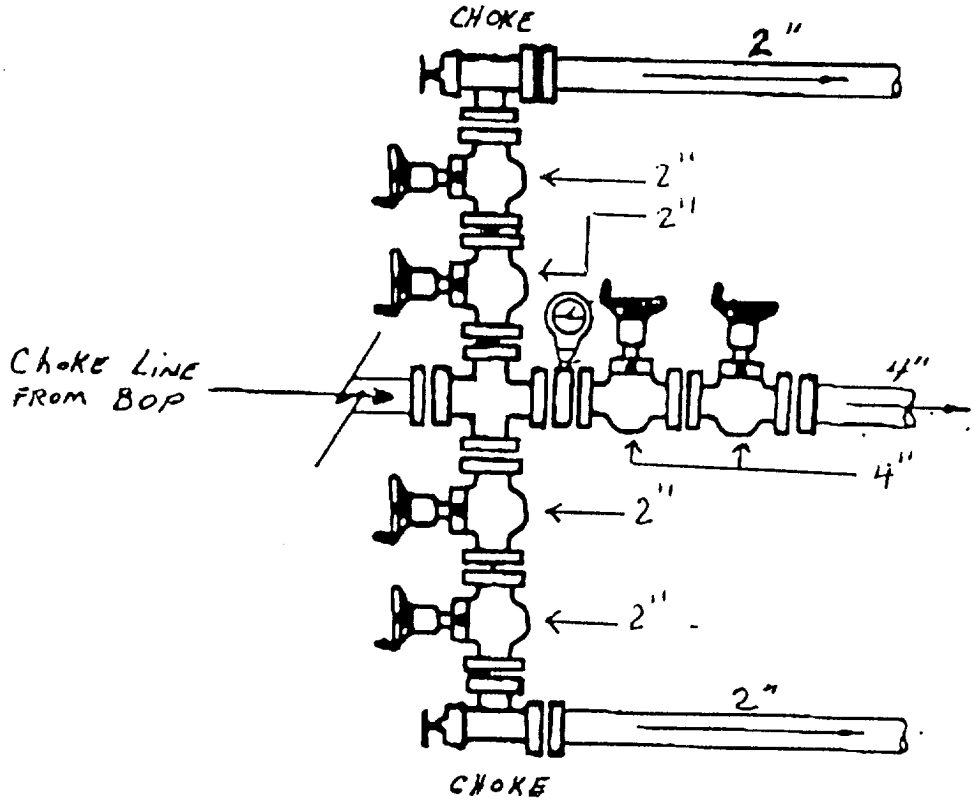
COMMUNICATIONS
24 hour direct cellular telephone

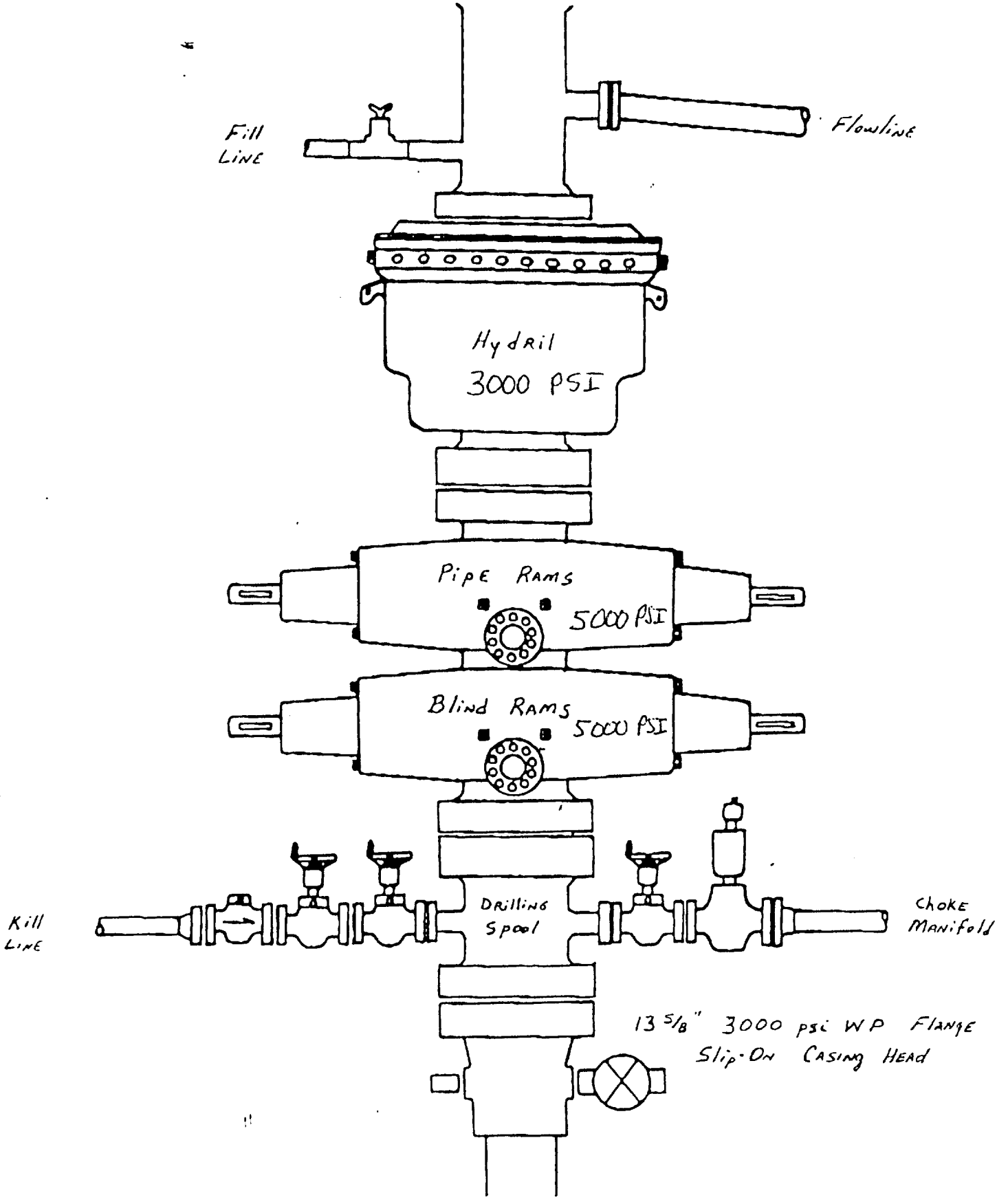
OTHER EQUIPMENT
Blocks. Gardner Denver 300 Ton
Hook. Gardner Denver 300 Ton
Swivel. 7 SX Brewster 300 Ton
Rotary Table. Gardner Denver 27 ½"
Electrical Power. Two 275 kW Generators w/3408 Cat
Fresh Water Storage. 1000 bbls
Housing.

"Hole Requirements will dictate actual Reserve Pit size (TOOLPUSHER SHOULD BE CONSULTED)"




"Eddy-Fed"
U.S.
Allied-Fi
D/A 7-25-73
"Fed"
U.S.
Montgomery, Tr.
Smith & Moore
Camille Smith
Dean Smith, Est
Chevron
06534
(Texaco)
HBP
065457
D. Nixon
Tr. etal
HBP
0441951
Chevron
HBP
Smith E. Moore
"White City
Penn Gas
Unit 3"
6 Mil.
28
Campbell
Estill-Fed
TD 3341
TD 2125
D/A 8-30-58
Gulf
5-1-78
18290
KGS
20667
U.S.
"White City Penn
Gas Unit 3"
2.7 Mi.
Chevron
HBP
Smith E. Moore
Matador
27
2 (Union)
Crawford
TD 11360
Morr. Disc.
7.2 Mil.
3
Matador
CRAWFORD
26
(Union)
Crawford
Penn Disc.
6.2 Mil.
"Crawford
W. Smith E. W. Moore
W. Moore E. Jo Ann Montgomery, Tr.
Chevron
HBC
W. Smith E W. Moore
Texaco
HBC
0539977
33
White City
Texaco
10-1-73
0441951
HBC
Chevron
HBC
PROPOSED WELL
BLACK RIVER FED. #1
1650' FSL & 660' FWL
U.S.
W Smith E W Moore
(Felmont, 1/2)
(J H Clifton)
Murchison O E,G
19593
MW Pet.
10-10-77
Murchison O E,G, 1/2
to 11762'
1-E HBC
(all sec.)
5.4 Mil.
34
Gulf
HBP
Murchison
O&G, 1/2
to 11762
MW Pet.
10-10-77
Smith E.
Moore
Murchison O&G
(Texaco)
4.8 Mil.
"Strong-
Fed"
W.S.
Miller et al
R.N.
Thomas
J.H.
Clifton
12-1-83
19593
U.S.
"Strong-
Fed."
U.S.
Mesa Pet.)
Moore-Fed
Murchison
O&G
to 11762'
1-E 2
HBC
F38 all sec
(Mesa Pet.)
Moore
Del. Disc.
5.2 Mil.
W. Smith &
W. Moore
35
Murchison O&G
6-1-84 21158'
Murchison O&G, 1/2
to 11762
Bristol Res.
9-1-82
6625
Murchison O&G, 1/2
to 11762
Mesa Pet.
Moore-Fed.
13. Mil.
Redstone O&G
Murchison O&G, HBP
to 11762' 1/2 0441951
(Felmont, 1/2)
U.S.
Pearson-Sibert
HBP
055476C
Pearson-Sibert
Sibert-Fed
TD 871
D/A 11-13-74
HBC
(all sec)
8.4 Mil
Murchison O&G
8
4
5
"Ringer-Fed."
Zula B
Ringer, etal
Murchison
O&G
MW Pet. 1/2
9-28-80
B.G. Parks
Murchison
O&G
MW Pet.
10-10-77
Murchison
O&G
7-1-85
40460
HBP
U.S.
U.S.
Pearson
Sibert
HBC
055476C
U.S.
(MW Pet.)
Murchison
O&G
3
(Mesa Pet.)
Ringer
(WO)
2.9 Mil
A & B.G. Parks
HBC
all sec.
Gulf 1-1-84
19836
Murchison
O&G
TD Morr.
Base
3
(Gulf)
Hinaberry
Drow Unit
E13304
TD 12,200
WC 8400
Penn 10,265
(D/A 10-15-62)
P/B 11654
U.S
Murchison O&G
10-17-77
HBC
etal
Zula B.
Ringer,
etal
Murchison
O&G
HBP
15296
Murchison O&G
L-896
Chevron /
Murchison-St
Murchison
O&G
L-8921
2 Mil.
3.8 Mil.
(P/B)
Enserch
Murchison-St.
2
2 Mil.
FB
Chevron
(Enserch),
Murchison St
Del Disc
"Ogden-St."
State
Spenergy
2-28-2000
KSA Pet.
4-6-2000
W.S. Miller, etal
L.A. E.B.G. Parks
Murchison
O&G
Zula B
Ringer
etal
Murchison O&G
(HNG Oil, 1/2)
19423
(P/B)
Chevron
14468
Cree D-1g.
Gulf-Fed
TD 2215
D/A 1-23-58
Gulf
Jennings
TD 2167
D/A 6-9-59
1 Mi.
W. B.
Owen
3-7-93
4-7-2001, 10-22-2001
Altura, 2/5 M.I.
T.J. Swart, etal
B.G. Parks
Enron
Dalco, 1/2
HBP
19423
9
Gulf
1-1-84
19836
R.N.
Thomas
10
Matador
14468
Matador
Oper
(D. Fossen)
(HNG)
B. Rich
to 2183'
"Grynberg-Fed"
Grynberg Fed
Brock


CHOKE
2"
2"
2"
CHOKE LINE
FROM BOP
4"
4"
2"
2"
2"
CHOKE


Fill Line
Flowline
Hydril
3000 PSI
Pipe Rams
5000 PSI
Blind Rams
5000 PSI
Kill Line
Drilling Spool
Choke Manifold
13 5/8" 3000 psi WP Flange
Slip-On Casing Head

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Roswell Field Office
2909 West Second Street
Roswell, New Mexico 88201-1287

Statement Accepting Responsibility for Operations

Operator Name:	MURCHISON OIL & GAS, INC.
Street or Box:	1445 ROSS AVE., SUITE 5300
City, State:	DALLAS, TX.
Zip Code:	75202-2883

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described below:

Lease No.: NM-19593

Legal Description of Land: NW/4, W/2/SW/4, SE/SE
SECTION 34, T24S, R26E

Formation (s) (if applicable): SURFACE TO ALL DEPTHS

Bond Coverage (State if individually bonded or another's bond):
PERSONAL STATEWIDE BOND

BLM Bond File No.: NM2683

Authorized Signature: Michael S. Daugherty
MURCHISON OIL & GAS, INC.

Title: MICHAEL S. DAUGHERTY
VICE PRESIDENT OPERATIONS

Date: 3/28/00

MULTI-POINT SURFACE USE AND OPERATIONS PLAN

MURCHISON OIL & GAS, INC.
BLACK RIVER FEDERAL #1
EDDY COUNTY, NEW MEXICO
LEASE NO. NM-19593

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of the plan is to identify the location of the proposed well, the proposed construction activities and operations plan, the magnitude of necessary surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operation so that a complete appraisal may be made of the environmental effects associated with the operation.

The well, and work area have been staked by a registered New Mexico land surveyor. Desert West Archaeological Services have been engaged to make an archaeological reconnaissance of the work area. Their findings concerning cultural resources will be reported to the Bureau of Land Management.

1. Existing Roads

   A copy of a USGS "Black River Village, New Mexico" Topographic map is attached showing the proposed location. The well location is spotted on this map, which also shows the existing road system.

   Directions to location: Travel south from Carlsbad on U.S. Highway 180 14 miles (1 ¼ miles south of 396 junction) and turn southeast on oil field road towards Blue Spring 2 miles then east 2 miles then north 2/10 mile to the location.

2. Planned Access Road

   A. An existing lease access road 1500' South of the location will be used to gain access. About 1511' feet of new lease road will have to be constructed.

   B. Surfacing material: Six inches of caliche and water, compacted and graded.

   C. Maximum Grade: Less than 3%

   D. Turnouts: None needed.

   E. Drainage Design: N/A.

   F. Culverts: None needed.

G. Cuts and Fills: Leveling the location will require minimal cuts or fills.

H. Gates or Cattleguards: None required.

3. Existing wells within a one mile radius of the proposed development well are shown on the attached map.

4. Location of Existing and/or Proposed Facilities

A. If the well is productive, production facilities will be constructed on the well pad. The facility will consist of a stack pack, one 300 bbl oil tank and one 300 bbl fiberglass water tank. All permanent above ground facilities will be painted in accordance with the BLM's painting guidelines simulating the color of sandstone brown.

B. All site security guidelines identified in 43 CFR 3162.7 regulations will be adhered to and a site security plan will be submitted for the Black River Federal #1 tank battery. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed.

5. Location and Type of Water Supply

Fresh water and brine water will be used to drill this well. It will be purchased from a supply in Carlsbad, NM vicinity and transported to the well site.

6. Source of Construction Materials

Caliche for surfacing the well pad will be obtained from a Federal pit located in Eddy County, New Mexico.

7. Method of Handling Waste Disposal

A. Drill Cuttings will be disposed of in drilling pits.

B. Drilling fluids will be allowed to evaporate in the drilling pits until pits are dry.

C. Water produced during tests will be disposed of in the drilling pits. Oil produced during tests will be stored in test tanks until sold.

D. Current laws and regulations pertaining to the disposal of human waste will be complied with.

E. Trash, waste paper, garbage and junk will be collected in steel trash bins and removed after drilling and completion operations are completed. All waste material will be contained to prevent scattering by the wind.

F. All trash and debris will be removed from the wellsite within 30 days after finishing drilling and/or completion operations.

8. Ancillary Facilities

A. None needed.

9. Wellsite Layout

A. The location and dimensions of the well pad, mud pits, reserve pit and location of major rig components are shown on the attached well site layout sketch. If Patterson Drilling Company Rig #18 is not utilized a comparable rig will be substituted. The V-door will be to the east and the pits to the north.

B. Leveling of the wellsite will be required with minimal cuts or fills anticipated.

C. The reserve pit will be plastic lined.

D. The pad and pit area have been staked and flagged.

10. Plans for Restoration of the Surface

A. After completion of drilling and/or completion operations, all equipment and other materials not needed for operations will be removed. Pits will be filled and location cleaned of all trash and junk to leave the well site in as aesthetically pleasing condition as possible.

B. Any unguarded pits containing fluids will be fenced until they are filled.

C. After abandonment of the well, surface restoration will be in accordance with the land owner. This will be accomplished as expeditiously as possible. Barring unforeseen problems, all pits will be filled and leveled within 90 days after abandonment.

11. Other Information

A. Topography: The location is a flat plain. GL elevation is 3330'.

B. Soil: Sandy clay loams.

C. Flora and Fauna: The vegetative cover is generally sparse consisting of mesquite, yucca, shinnery oak, sandsage and perennial native range grasses. Wildlife in the area is also sparse consisting of coyotes, rabbits, rodents, reptiles, dove and quail.

D. Ponds and Streams: Black River runs from southwest to northeast approximately 3000' to the southeast of well location. See attached topographic map.

E. Residences and Other Structures: There are no occupied dwellings within a 1 mile radius of the location.

F. Archaeological, Historical and Cultural Sites: Cultural resources have been recorded in the area. Desert West Archaeological Services have been engaged to make an archaeological reconnaissance of the work area.

G. Land Use: Cattle ranching.

H. Surface Ownership: The surface is public land leased by the BLM to Margret Marquart, P.O. Box 8, White City, NM. 88268. They will be notified of our intention to drill prior to any activity.

Upon completion of the well, any plastic material used to line the pits or sumps will be cut off below ground level as far as possible and disposed of before the pits are covered. All unattended pits containing liquid will be fenced and the liquid portion allowed to evaporate before the pits are broken and backfilled.

All waste associated with the drilling operation will be contained in steel bins and removed. All garbage and debris left on site will be removed within 30 days of the final completion. The well site, if a producer, will be maintained and kept clean of all trash and litter which detracts from the surrounding environment. Equipment will be maintained in accordance with good operating practice.

After the wellsite is cleaned and pits and sumps backfilled, any obstruction to the natural drainage will be corrected by ditching or terracing. All disturbed areas, including any access road no longer needed, will be ripped. Those areas will be reseeded with grass if, in the opinion of the land owner, it is required.

12. Operator's Representatives

The Field representatives responsible for assuring compliance with the approved surface use and operations plan are as follows:

Michael S. Daugherty
1445 Ross Ave., Ste. 5300, LB 152
Dallas, TX. 75202-2883
Office Phone: (214) 953-1414
Home Phone: (972) 618-0792

Randy Ford
P.O. Box 51037
Midland, TX. 79710
Office Phone: (915) 682-0440
Pager Phone: (800) 518-9809

13. Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by MOGI and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

Michael S. Daugherty

3/28/00
Date

Vice President, Operations
Murchison Oil & Gas, Inc.

MURCHISON OIL & GAS, INC.
MURCHISON OIL COMPANY
MURCHISON PROPERTIES, INC.
MURCHISON REALTY, INC.
JDM INTERESTS, INC.

March 28, 2000

United States Department of the Interior
Bureau of Land Management
Roswell District Office
2909 West Second Street
Roswell, New Mexico 88201

Re: Application for Permit to Drill
Murchison Oil & Gas, Inc.
Black River Federal #1
Eddy County, New Mexico
Lease No. NM-19593

Gentlemen:

Murchison Oil & Gas, Inc. "MOGI" respectfully requests permission to drill our Black River Federal #1 located 1650' FSL and 660' FWL of Section 34, T24S, R26E, Eddy County, New Mexico, Federal Lease No. NM-19593. The proposed well will be drilled to a TD of approximately 11,600' (TVD). The location and work area have been staked. It is approximately 20 miles south of Carlsbad, New Mexico.

In accordance with requirements stipulated in Federal Onshore Oil and Gas Order No. 1 under 43 CFR 3162.1, our Application for Permission to Drill and supporting evidence is hereby submitted.

I. Application for Permit to Drill:

1. Form 3160-3, Application for Permit to Drill.

2. Form C-102 Location and Acreage Dedication Plat certified by Gary Eidson Registered Land Surveyor No. 12641 in the State of New Mexico, dated 2/15/2000.

3. The elevation of the unprepared ground is 3330 feet above sea level.

4. The geologic name of the surface formation is Castile and Aluminum.

5. Rotary drilling equipment will be utilized to drill the well to TD 11,600' (TVD), and run casing. This equipment will then be rigged down and the well will be completed with a pulling unit.

6. Proposed total depth is 11,600' TVD.

7. Estimated tops of important geologic markers.

Lamar	1838' TVD
Delaware	1868' TVD
Cherry Canyon	2818' TVD
Bone Springs	5273' TVD
3rd BS SS	8008' TVD
Wolfcamp	8338' TVD
Strawn	9986' TVD
Atoka	10052' TVD
Morrow	10639' TVD

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

Primary Objective:	Morrow	10826' TVD
Secondary Objectives:	Strawn	9986' TVD
	Atoka	10052' TVD

9. The proposed casing program is as follows:

Surface: 13-3/8" OD 68#/FT K-55 BUTT T&C casing set at 270'

1st Intermediate: 9-5/8" OD 36#/FT J-55 ST&C casing set at 1860'

2nd Intermediate: 7-5/8" 33.7 #/FT N-80 and S-95 FL4S casing set @ 8600'

Production Liner: 5 ½" 20#/FT N-80 FL4S Liner set @ 8300-11600'

10. Casing setting depth and cementing program:

A. 13-3/8" surface casing set at 270', or at the base of the Lamar Lime, in 17-1/2" hole. Circulate cement with 200sx Class C with additives.

If cement does not circulate, a temperature survey will be run to find the TOC and then finish cementing to surface through 1" using Class C cement with additives.

B. 9-5/8" 1st intermediate casing set at 1860' in 12-1/4" hole. Circulate cement with 400sx 35:65 POZ/Class C and 200sx Class C cement with additives.

C. 7-5/8" 2nd intermediate casing set at 8600' in 8-3/4" hole. Cement with 600sxs Class C cement with additives.

D. 5-1/2" production liner set from 11,600' to 8300'. Cement with 340sx Class C cement with additives.

Note: Cement volumes may need to be adjusted to hole caliper.

11. Pressure Control Equipment

0' – 270'	None
270' – 1860'	13-3/8" 5000# ram type preventers with one set blind rams and one set pipe rams and a 3000# annular preventer.
1860' – 11600'	13-3/8" 5000# ram type preventers with one set blind rams and one set pipe rams and a 3000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head below 8600'. See attached Sketch of BOP Equipment. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. After setting the 7-5/8" casing, the blowout preventers and related control equipment shall be pressure tested to 5000 psi and 3000 psi respectively. Any equipment failing to test satisfactorily shall be repaired or replaced. Results of the BOP test will be recorded in the Driller's Log. The BOP's will be maintained ready for use until drilling operations are completed.

BOP drills will be conducted as necessary to assure that equipment is operational and each crew is properly trained to carry out emergency duties.

Accumulator shall maintain a pressure capacity reserve at all times to provide for the close-open-close sequence of the blind and pipe rams of the hydraulic preventers.

12. Mud Program:

0 – 270'	Spud with fresh water gel flocculated with lime and pretreated with 6-8 lbs/bbl cottonseed hulls, 2-4 lbs/bbl fiber, and 2 lbs/bbl paper for possible severe loss circulation zone 100-200'. If necessary drill without returns, or if full returns cannot be established at casing point mix 150 bbls viscous mud treated with LCM as above and spot on bottom before coming out of the hole to run casing.
270' – 1860'	Drill out with fresh water through a controlled section of the reserve pit. Add paper for seepage control or to sweep hole, as needed. At casing point, sweep hole with 150± bbls viscous mud with 6-8 lbs/bbl LCM before coming out of the hole to run casing.
1860' – 6000'	Drill out with fresh water through a controlled section of the reserve pit. Use paper, sea mud, and salt water gel slugs to sweep the hole and control seepage, as necessary. To control corrosion maintain ph 8.5 to 9.5 with caustic soda and use corrosion chemicals from 1900' to total depth. A possibility of lost circulation exists at 2700± and 5200±.
6000' – 8500'	Circulate steel pits and mud up to 34-36 sec/qt viscosity, 10 to 12cc API filtrate, and 3.0+% KCL with sea mud-salt water gel (2 to 1 ratio) and drispac-cypan after treating hardness with soda ash.
8500' – T.D.'	Maintain viscosity 36-40 sec/qt. API filtrate less than 6cc, and 3.0% KCL with sea mud, salt water gel – drispac – cypan - white starch.

13. Testing, Logging and Coring Program:

    A. Testing program: None anticipated.

    B. Mud logging program: Two man unit from 1860' to TD.

    C. Electric logging program: CNL/LDT/CAL/GR, DLL/CAL/GR.

    D. Coring program: Possible sidewall rotary cores.

14. No abnormal temperatures, or H2S gas are anticipated. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

15. Anticipated starting date is May 1, 2000 subject to rig availability. It should take approximately 28 days to drill the well and another 10 days to complete.

16. A statement accepting responsibility for operations is attached.

17. The Multi-Point Surface Use & Operation Plan is attached.

18. If the Bureau of Land Management needs additional information to evaluate this application, please advise.

Very truly yours,

Michael S. Daugherty
Vice President, Operations

MSD/cb/BlkRivFed#1-BLM-APTD

Attachments