MERIT ENERGY COMPANY

Sundance Federal Well #16
1980' FEL and 660' FSL
Unit O Section 5-T24S-R31E
Eddy County, New Mexico

1. The estimated top of geologic markers are as follows:

Delaware Lime	4060'
Cherry Canyon	5175'
Brushy Canyon	6325'
Bone Springs	7900'

2. The estimated depth at which anticipated water, oil and gas are expected to be encountered:

Water	Surface to 500'
Oil and Gas	Delaware Lime 4060' to Bone Springs 8200'

3. Pressure Control Equipment: BOPE will be installed on the 13 3/8" casing and rated for 3000#. BOP systems will be consistent with API RP 53. Pressure tests will be conducted before drilling out from under all casing strings which are set and cemented in place. Blowout preventer controls will be installed prior to drilling the surface plug and will remain in use until the well is completed or abandoned. Preventors will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. See Exhibit B & B-1.

4. Auxiliary Equipment and proposed Casing Program:

   A. Auxiliary Equipment: Kelly Cock, pit level indicators, flow sensor equipment, and a sub with full opening valve to fit drill pipe and collars will be available on rig floor in open position at all times for use when Kelly is not in use.

   B. Casing and Cementing Program:
   Hole Size: 17 1/2" Total Depth: 650' Casing Size: 13 3/8"
   Setting Depth: 650' Mud Weight: 8.8 ppg

   Casing Design:

O.D.	Weight	Grade	Thread	Coupling	Interval	Length
13 3/8"	54.50#	J-55	8R	ST & C	0-650'	650'

   Minimum Casing Design Factors:
   Collapse 11.30, Burst 27.30, Tensile Strength 8.53

   Cement Program:
   Lead Slurry: 280 sacks-3565 posC with 6% Bentonite 2% CaCl2
   1/8 lb per sack Cellophane Flake
   Expected Linear Fill: Est. Hole Volume-554 feet
   Slurry Properties: Weight-12.8 ppg Yeild-1.98 cu.ft./sack

   Tail Slurry: 290 sacks Class "C" with 2% CaCl2
   Expected Linear Fill: Est. Hole Volume-552.94 feet
   Slurry Properties: Weight-12.8 ppg Yeild-1.32 cu.ft./sack

   Hole Size: 11" Total Depth: 4200' Casing Size: 8 5/8"
   Setting Depth: 4200' Mud Weight: 10.0

Casing Design:

O.D.	Weight	Grade	Thread	Coupling	Interval	Length
8 5/8"	24#	J-55	8R	ST & C	0-2400'	2400'

Minimum Casing Design Factors: Collapse 1370, Burst 2950, Tensile Strength 3.81

O.D.	Weight	Grade	Thread	Coupling	Interval	Length
8 5/8	32#	J-55	8R	ST & C	2400-4200'	1800'

Minimum Casing Design Factors: Collapse 2530, Burst 3930, Tensile Strength 5.03

Cement Program:

Lead Slurry: 721 sacks-3565 posC with 6% Bentonite 10% salt & NaCl
Calculated Linear Fill: Est. Hole Volume-3668.76 feet
Slurry Properties: Weight-12.7 ppg Yeild-2.10 cu.ft./sack

Tail Slurry 200 sacks Class "C" with 2% CaCl2
Calculated Linear Fill: Est. Hole Volume-639.68 feet
Slurry Properties: Weight 14.8 ppg Yeild 1.32 cu.ft./ sack

Hole Size: 7 7/8" Total Depth: 8200' Casing Size: 5 1/2"
Setting Depth: 8200' Mud Weight: 8.7 ppg

Casing Design:

O.D.	Weight	Grade	Thread	Coupling	Interval	Length
5 1/2	15.5#	J-55	8R	LT & C	0-7000'	7000'

Minimum Casing Design Factors: Collapse 40.40, Burst 48.10, Tensile Strength 2.17

	O.D.	Weight	Grade	Thread	Coupling	Interval	Length
1.	5 1/2	17#	J-55	8R	LT & C	7000'-8200'	1200'

Minimum Casing Design Factors: Collapse 49.10, Burst 53.20, Tensile Strength 2.47

Cement Program:

Lead Slurry: 556 sacks Class "H" with .3% Flack(Fluid Loss) 3% Mll7
Calculated Linear Fill: Est. Hole Volume-3785.8
A stage cementing collar will be used and placed at approximately 5500'.
Slurry Properties: Weight-15.6 ppg Yeild-1.18 cu.ft./sack

2nd Stage Lead Slurry: 127 sacks 3565 posC with 6% Bentonite, 10% NaCl
Calculated Linear Fill: Est. Hole Volume-1538.9 feet
Slurry Properties: Weight-12.7 ppg Yeild-2.10 cu.ft./sack

Tail Slurry: 100 sacks Class "C"
Calculated Linear Fill: Est. Hole Volume-761 feet
Slurry Properties: Weight-14.8 ppg Yeild-1.32 cu.ft./sack

5. Mud Program and Auxiliary Equipment:
From 0 to 650′ (Minimum)
Mud Weight: 8.6 ppg, Viscosity: 32 sec./1000 cc, Water Loss: N C cc, Mud Type:FW Gel/LCM
Mud will be checked tourly by mud engineer. Sufficeint quantities of mud will be kept on location to maintain minimum properties.

From 650′ to 4300′ (Minimum Properties)
Mud Weight: 10.0 ppg, Viscosity: 28 sec./1000cc, Water Loss: N/C cc. Mud Type: Brine, use salt water gel for hole sweeps. Mud will be checked tourly by mud engineer. Sufficient quantities of mud will be kept on location to maintain minimum properties.

From 4200′ to 5000′ (Minimum Properties)
Mud Weight: 8.3 ppg, Viscosity: 28 sec./1000cc, Water Loss: N/C cc, Mud Type: Fresh
Use paper and poly visII for weight for hole sweeps.
Mud will be checked tourly by mud engineer. Sufficient quantities of mud will be kept on location to maintain minimum properties.

From 5000′ to 8200′ (Minimum Properties)
Mud Weight: 8.7 ppg, Viscosity: 30 sec./1000cc, Water Loss: N/C cc, Mud Type: Brine
Use salt water gel for hole sweeps.

6. Testing, Logging and Coring Program:
Samples: Every 10′ from surface casing to TD.
DST's: Any tests will be based on the recommendations of the well-site Geologist as warranted by drilling breaks and shows.
Coring: None Anticipated
Logging: CNL-FCD form TD to casing, with GR-CNL up to surface; DLL from TD to casing.

7. Abnormal Conditions, Bottom Hole Pressure and Potential Hazards:
Anticipated BHP:
From: 0′ to 650′ Anticipated Max. BHP: -0- PSI
From: 650′ to 4200′ Anticipated Max. BHP: 1700 PSI
From: 4200′ to 8200′ Anticipated Max. BHP: 2400 PSI

Abnormal Pressures Anticipated: None
Lost Circulation Zones Anticipated:
Possible lost circulation 450′ to 4200′
H2S Zones Anticipated: None
Maximum Bottom Hole Temperature: 144 degrees Fahrenheit

8. Anticipated starting date: As soon as possible after approval with the drilling time being approximately 15 days and the completion time being another 15 days.

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MULTI-POINT SURFACE USE AND OPERATIONS PLAN
Merit Energy Company
Sundance Federal Well #16
660' FSL and 1980' FEL
Unit O Section 5-T24S-R31E
Eddy County, New Mexico

This plan is submitted with a Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated the the operations.

1. EXISTING ROADS:
   Exhibit A is a portion of BLM map showing the well and roads in the vicinity for the proposed location. The proposed well site is located approximately 21 miles east of Loving, New Mexico and the access route to the location is indicated in Blue and Red on Exhibit A.

2. DIRECTIONS:
   Go Southeast of Carlsbad, New Mexico on Highway 285 towards Pecos, Texas approximately 9 miles. Turn left(East) onto Highway 31 for 10 miles to Highway 128. Go right for 13 1/2 miles to lease road. Turn right(South) and go approximately 2 1/2 miles through cattle guard. From cattle guard go South approximately 4000 feet to new road access on your right (west) then 1600 feet to new well site.

3. PLANNED ACCESS ROAD:
   A. The proposed new access will be approximately 1300 feet in length from the point of origin to the Southeast edge of the drilling pad the road will lie in a easternly direction.
   B. The new road will be 12 feet in width (driving surface) and will be adequately drained to control run-off and soil erosion.
   C. The new road will be bladed with a drainage on both sides. One traffic turnout will be built.
   D. The route to location is visible.

4. LOCATION OF EXISTING WELL:
   A. There is drilling activity within a one-mile radius of the well site.
   B. Exhibit F shows existing wells within a one-mile radius of the proposed wellsite.

5. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:
   A. There are production facilities on this lease at the present time.
   B. In the event that the well is productive the necessary flowline will be laid along road right-of-ways following the east road to production facility on lease Sundance Federal Central Tank Battery(2000' FNL and 50' FWL Section 4-T24S-R31E NM #031963). SDR 11 poly pipe will be used for flowline. See green line exhibit E.

6. LOCATION AND TYPE OF WATER SUPPLY:
   A. It is planned to drill the proposed well with a fresh and brine water system. The water will be obtained from commercial sources and will be hauled to the location over the existing and proposed roads shown in Exhibit A.
   B. Fresh water source is Sec 6 T23S R31E (Mills H20 Station) or Sec 23 T23S R28E (Reid Water Station).
   C. Brine water source is Sec 17 T22S R27E (B&E Brine Station).

7. SOURCE OF CONSTRUCTION MATERIALS:
   The material will be taken from a federal pit in the NE 1/4 NE 1/4 Sec 4 T24S R31E will be archeological cleared or from reserve pit area of drilling pad where possible.

8. METHODS OF HANDLING WASTE DISPOSAL:
   A. Drill cutting will be disposed of in the reserve pits.
   B. Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry.
   C. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or separate disposal application will be submitted.
   D. Oil produced during operations will be stored in tanks until sold.
   E. Current laws and regulations pertaining to the disposal of human waste will be complied with. Sanitary Port-O-Pottys will be provided during drilling operations, cleaned, sanitized, and/or replaced as necessary.
   F. Trash, waste paper, garbage and junk will be contained to prevent scattering by the wind. Containment will be obtained by using covered trash bins. Then, hauled off to approved landfill off Hidalgo Road SE of Carlsbad, Eddy County, New Mexico.
   G. All trash and debris will be removed from the well site within 30 days after finishing drilling and/or completion operations.

9. WELL SITE LAYOUTS:
   A. Exhibit C shows the relative location and dimensions of well pad, the reserve pits, the location of the drilling equipment, rig orientation and access road approach.
   B. The reserve pits will be plastic lined with 6 mil plastic.
   C. A 400' x 400' area has been staked and flagged.

10. PLANS FOR RESTORATION:
   A. After finishing drilling and/or completion operations, all equipment and other material not needed for further operations will be removed. The location will be cleaned of all trash and junk to leave well site in as aesthetically a condition as possible.
   B. Unguarded pits, if any, containing fluid will be fenced until they have dried and been levelled.
   C. If the proposed well is non-productive, all rehabitation and/or vegetation requirements of the Bureau of Land Management will be complied with and will be accomplished as expedient as possible. All pits will be filled level within 90 days after abandonment.

11. SURFACE OWNERSHIP:
Federal Surface administered by the Bureau of Land Management, Carlsbad Resource Area.

12. OTHER INFORMATION:
A. Topography: Refer to the existing archelogical report for a description of the topography, flora, fauna, soil characteristics, dwellings, historical and cultural sites.
B. The primary surface use is for grazing.

13. OPERATOR'S REPRESENTATIVE:

A. Through A.P.D. Approval:

Russell Whited, Prod Supt
Merit Energy Company
118 West Nebraska
Jal, New Mexico 88252
(505) 395-2173

B. Through Drilling Operations, Completions and Production:

Russell Whited, Prod Supt
Merit Energy Company
118 West Nebraska
Jal, New Mexico 88252
(505) 395-2173

14. CLARIFICATION:

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 Merit Energy Company and its contractors and sub-contractors in conformity with this plan, the terms and conditions under which it is approved. This statement is subject to the provisions of U.S.C. 1001 for the filing of a false statement.

6-7-93
Date

Russell Whited
Russell Whited
West District,
Production Superintendent

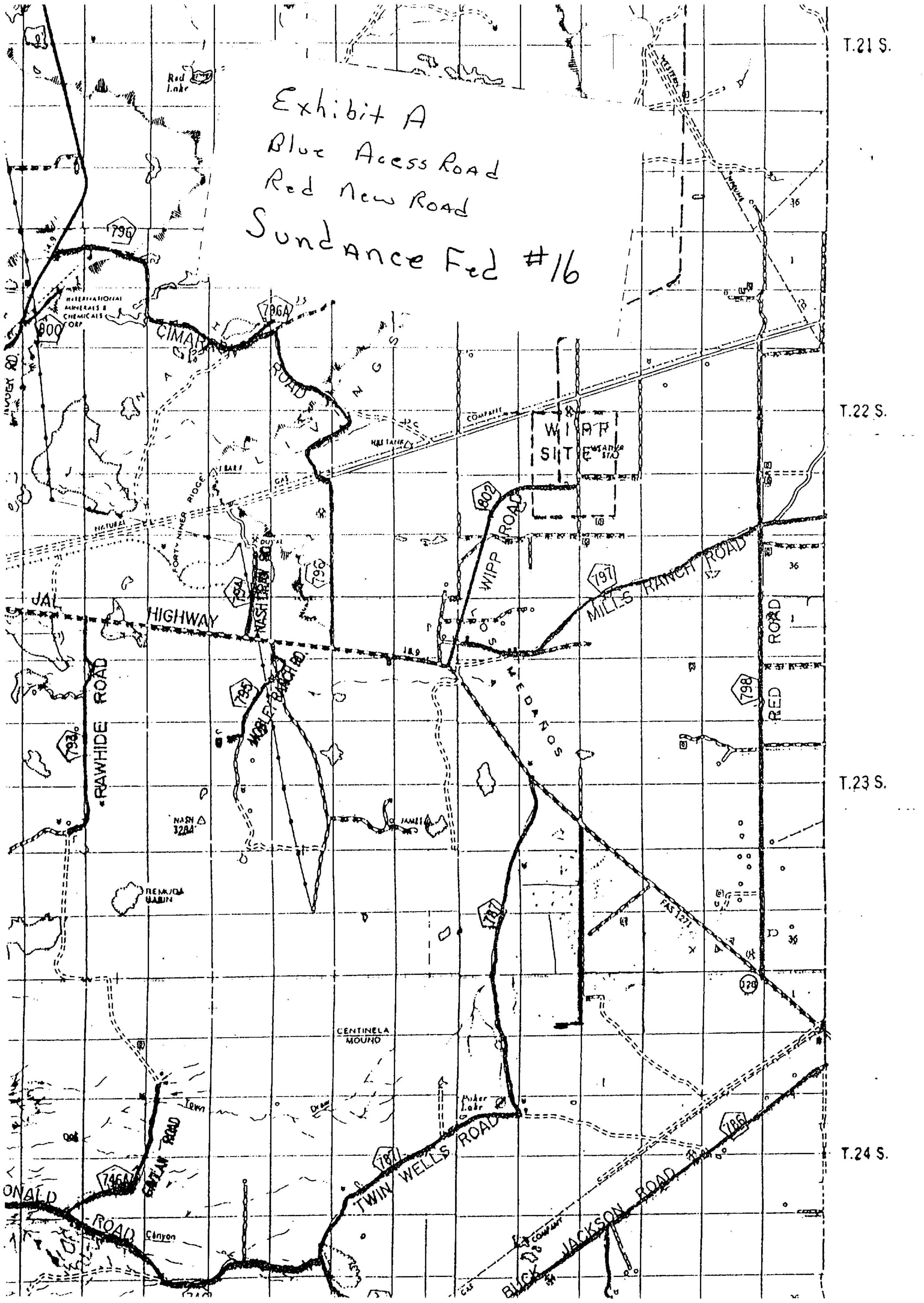
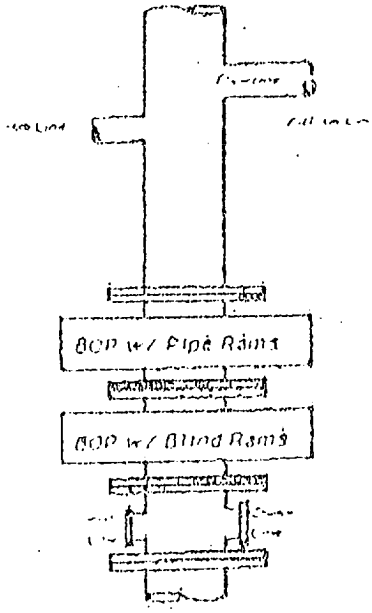


Exhibit A
Blue Acess Road
Red New Road
Sundance Fed #16
T.21 S.
T.22 S.
T.23 S.
T.24 S.
Red Lake
INTERNATIONAL MINERALS & CHEMICALS CORP
796
796A
800
CIMARRON ROAD
NATURAL GAS COMPANY
FORTY NINER RIDGE
WIPP SITE
802
WIPP ROAD
197
MILLS RANCH ROAD
RED ROAD
798
JAL HIGHWAY
784
NASH DRAW RD
795
MOBLEY RANCH RD
793
RAWHIDE ROAD
NASH 3284
BERMUDA BASIN
JAMES
LOS MEDANOS
787
FAS 1271
120
CENTINELA MOUND
Poker Lake
TWIN WELLS ROAD
786
JACKSON ROAD
BUCK
746A
CAPITAN ROAD
MCDONALD ROAD
Canyon
Town
36

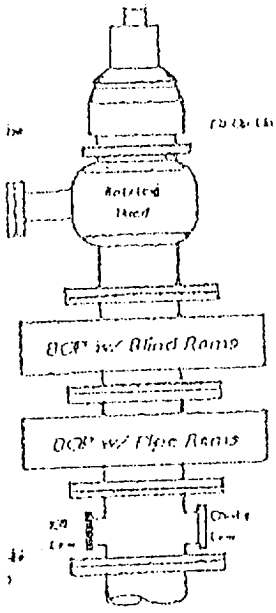
Exhibit B

Exhibit B-1



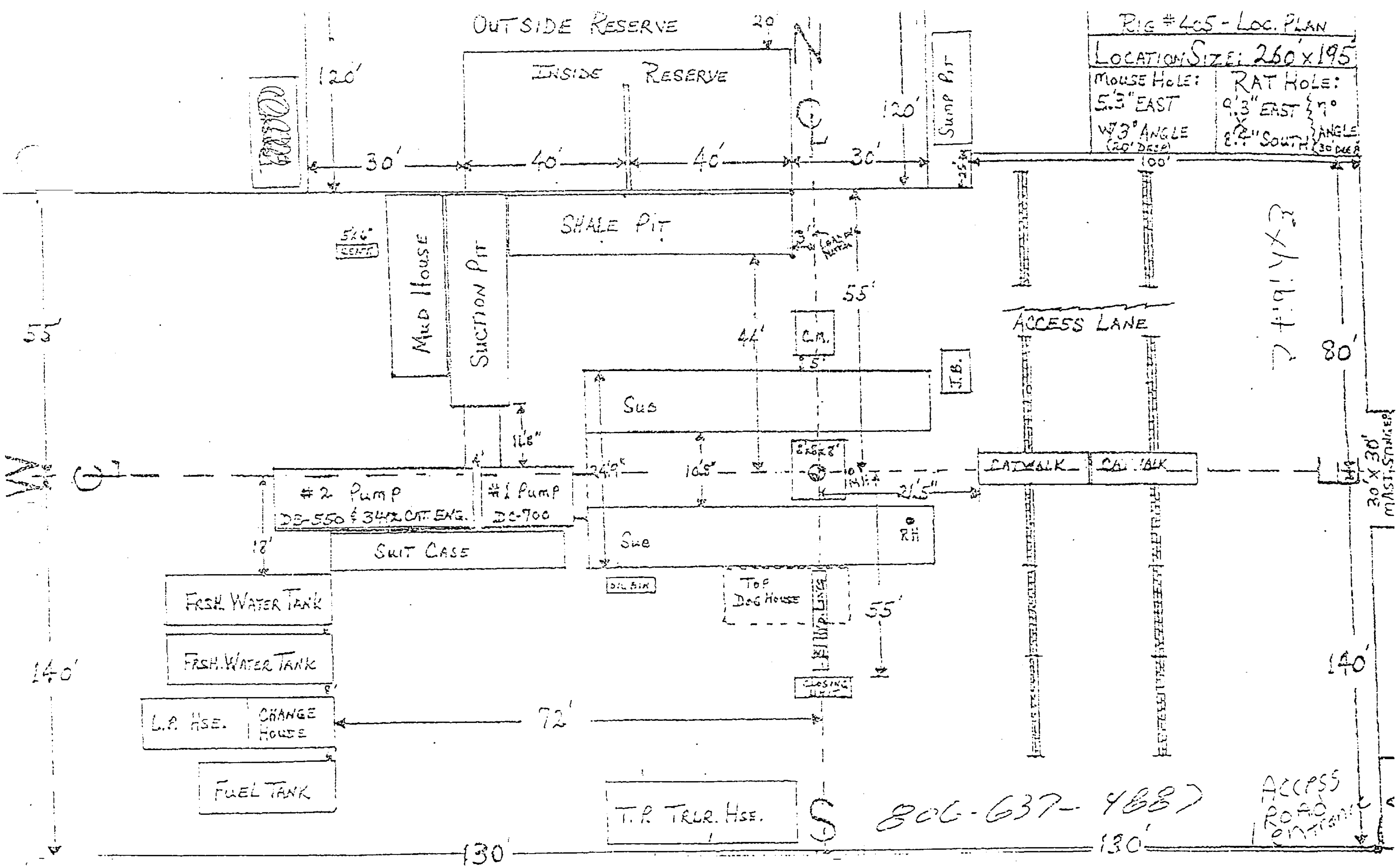
CASE II

3000lbs



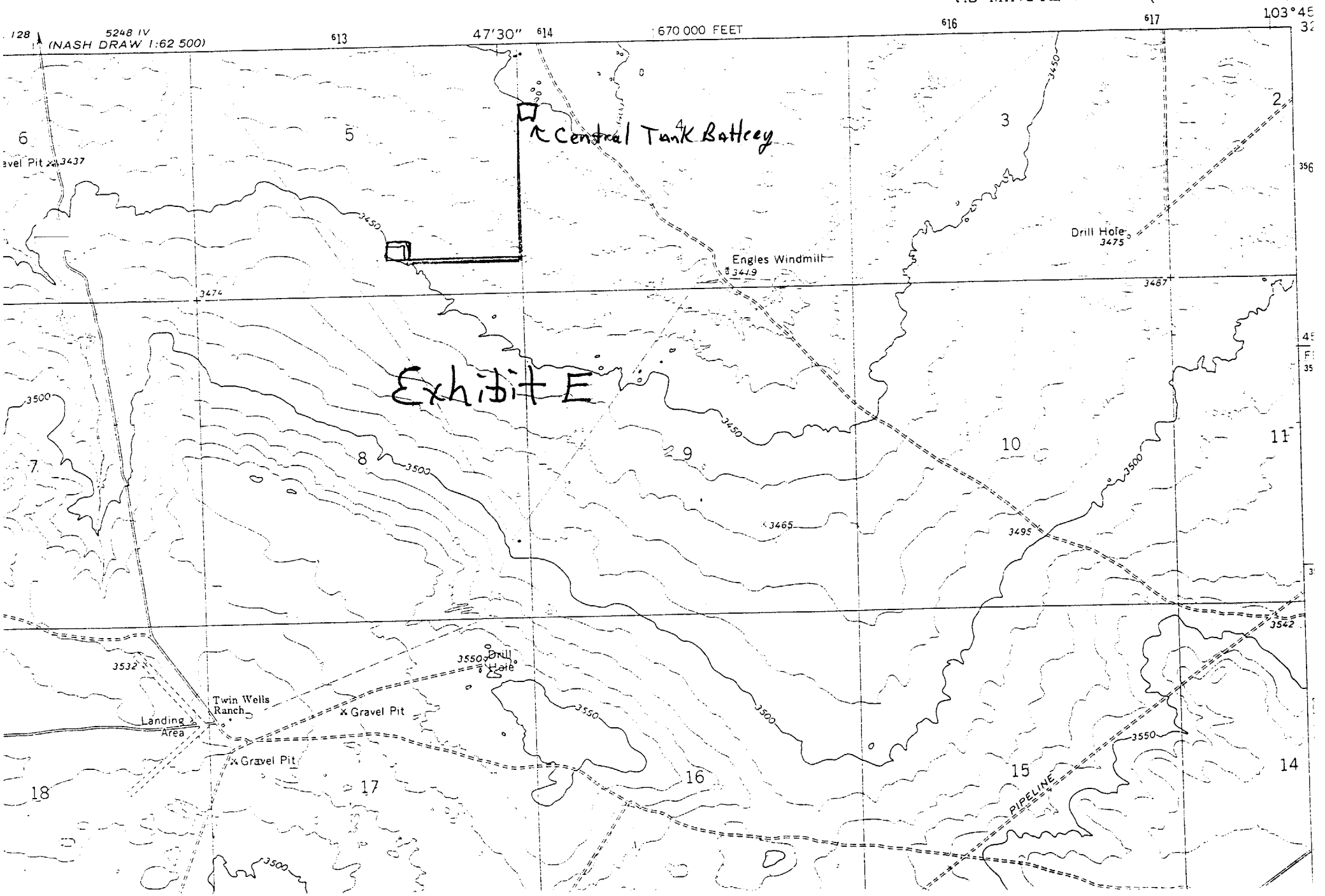
CASE II

3000lbs



RIG #405 - LOC. PLAN
LOCATION SIZE: 260' x 195'
MOUSE HOLE: 5'3" EAST W/3° ANGLE (20' DEEP)
RAT HOLE: 9'3" EAST 8'2" SOUTH 7° ANGLE (30 DEEP)
OUTSIDE RESERVE
INSIDE RESERVE
SUMP PIT
SHALE PIT
MUD HOUSE
SUCTION PIT
#2 PUMP DB-550 & 3412 CAT ENG.
#1 PUMP DC-700
SUIT CASE
SUB
C.M.
J.B.
CATWALK
ACCESS LANE
TOP DOG HOUSE
FRSH. WATER TANK
FRSH. WATER TANK
L.P. HSE.
CHANGE HOUSE
FUEL TANK
T.P. TRLR. HSE.
CLOSING UNIT
ACCESS ROAD ENTRANCE
30' X 30' MAST, STINGER
W
N
S
806-637-4887
Exhibit 2
30'
40'
40'
30'
120'
120'
100'
55'
55'
55'
44'
72'
140'
140'
80'
130'
130'
18'
24'9"
10'5"
21'5"

Sundance Fed #16



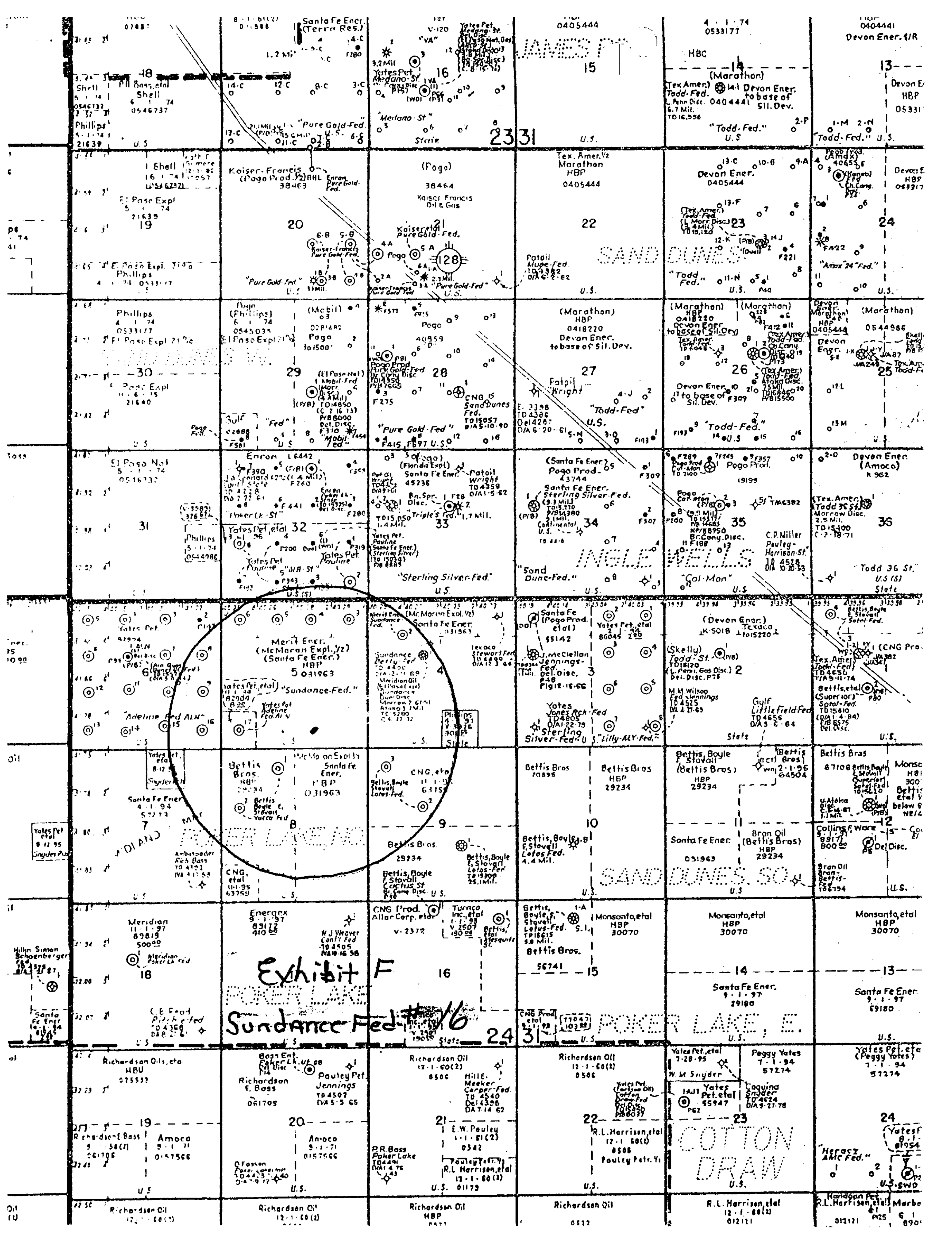


Exhibit F
Sundance Fed #16
JAMES
SAND DUNES
SAND DUNES W.
INGLE WELLS
SAND DUNES, SO.
POKER LAKE
POKER LAKE, E.
COTTON DRAW
Merit Ener. (McMoran Expl. ½) (Santa Fe Ener.) HBP 031963
"Sundance-Fed."
Bettis Bros.
Santa Fe Ener.
Richardson Oil
Monsanto, etal HBP 30070