

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK

DRILL ☒DEEPEN ☐PLUG BACK ☐

b. TYPE OF WELL

OIL
WELL ☐GAS
WELL ☒

OTHER

SINGLE
ZONE ☐MULTIPLE
ZONE ☒

2. NAME OF OPERATOR

Grace Petroleum Corporation

3. ADDRESS OF OPERATOR

80202

3 Park Central, Suite 200, 1515 Arapahoe St., Denver, Colo.

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*

At surface

1730 FWL, 1650' FSC

At proposed prod. zone

Same as above

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

15. DISTANCE FROM PROPOSED*

LOCATION TO NEAREST
PROPERTY OR LEASE LINE, FT.
(Also to nearest drlg. unit line, if any)18. DISTANCE FROM PROPOSED LOCATION*
TO NEAREST WELL, DRILLING, COMPLETED,
OR APPLIED FOR, ON THIS LEASE, FT.

2600' completed

16. NO. OF ACRES IN LEASE

19. PROPOSED DEPTH

5950

17. NO. OF ACRES ASSIGNED
TO THIS WELL

160 80

20. ROTARY OR CABLE TOOLS

Rotary

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

7098 Ungraded

22. APPROX. DATE WORK WILL START*

July 25, 1979

23.

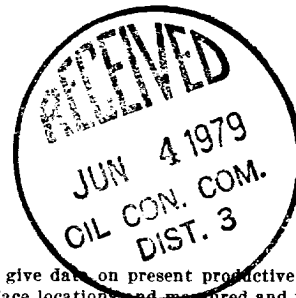
PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12-1/4	8-5/8	24#	300'	Cement to Surface
7-7/8	5-1/2	14#	TD	300 sx

It is proposed to drill and test the GALLUP Formation at the above location.
The total depth will be approximately 5950'.

A 5-1/2" production string will be run and cemented or the well will be
plugged and abandoned which ever test indicate.

See attached for other pertinent data.



IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, 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

TITLE

Dist. Op. Mgr.

DATE

5-25-79

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

MAY 31 1979

*See Instructions On Reverse Side

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

P. O. BOX 2088

EXHIBIT 8

Form O-102
Revised 10-1-78

SANTA FE, NEW MEXICO 87501

All distances must be from the outer boundaries of the Section

Operator Grace Petroleum Corporation			Lease GRACE-FEDERAL 21		Well No. 1
Well Letter K	Section 21	Township 24N	Range 7W	County Rio Arriba	
Actual Footage Location of Wells: 1650 feet from the South Line and 1730 feet from the West Line					
Ground Level Elev. 7098	Producing Formation Gallup	Pool Escrito		Collected Acres: 160.80 Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.

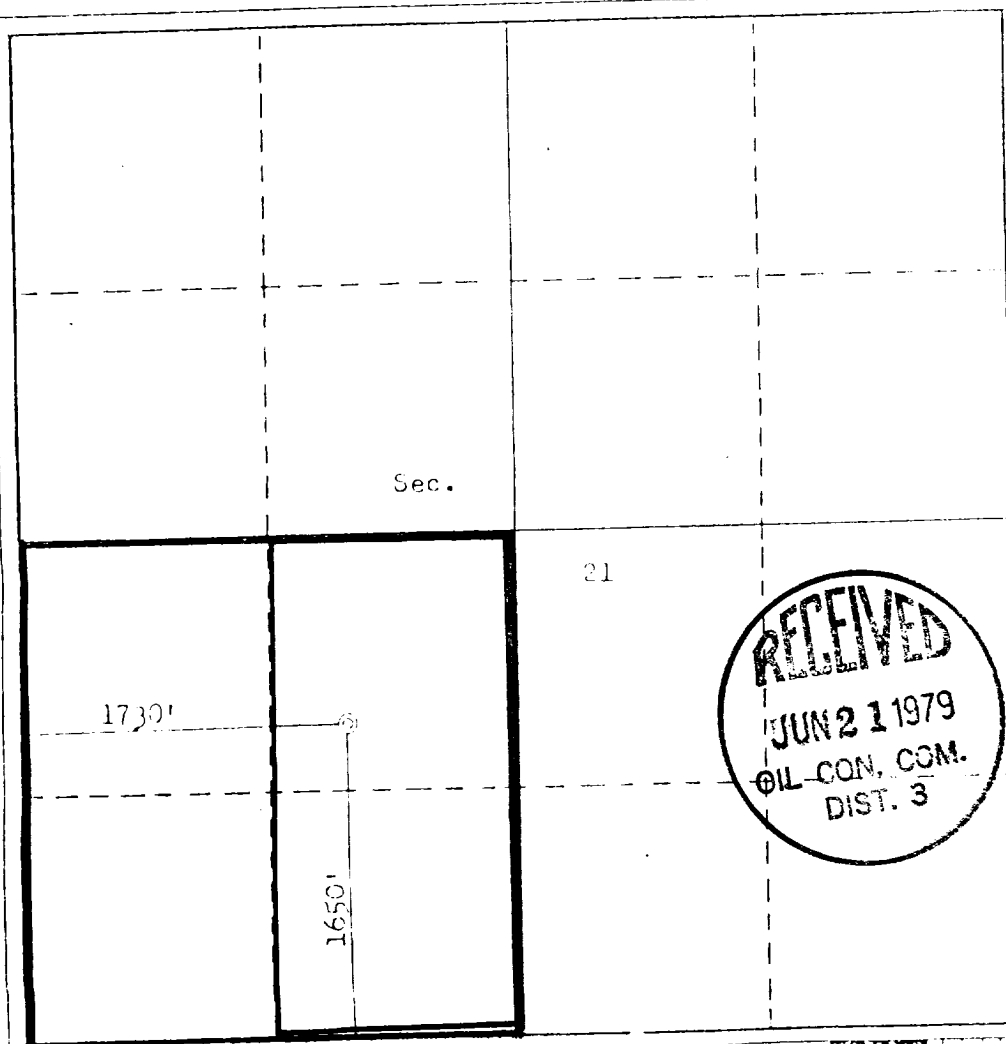
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☒ No Single Lease If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

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

Scotty A. Smith
Scotty A. Smith

Name

District Operations Manager

Location

Grace Petroleum

Date

June 11, 1979

Date

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 Surveyed

April 11, 1979
Registered Professional Engineer
and Oil Land Surveyor
3551

Ernest A. Kerr
Ernest A. Kerr
Certification No. 4 KERR.

2950

NTL-6 ENVIRONMENTAL STATEMENT

SURFACE USE PLAN

OPERATOR: Grace Petroleum Corporation
LEASE & WELL NAME: Grace Federal 1-21
LOCATION: (1730 FWL, 1650 FSL) HESW Section 21, T24N-R7W
COUNTY & STATE: R10 Arriba County, New Mexico

TO: The United States Geological Survey (USGS) and the Bureau of Land Management (BLM).

The following information, maps, plats, and descriptions of various surface characteristics should fulfill the requirements of the various agencies as to the environmental commitment of the operator at the above named well site.

Geologic Name of the Surface Formation

1. The well will be spudded in tertiary rocky clay loam.

Estimated Tops of Important Geologic Markers

2. The estimated formation tops are as follows:

FORMATION	DEPTH
San Jose	Surface
Ojo Alamo	1420'
Kirtland-Fruitland Undivided	1570'
Pictured Cliffs	2070'
Lewis	2170'
Chacra Zones	2570'-2670'
Cliffhouse	2870'
Menefee	3070'
Point Lookout	4570'
Mancos	4770'
Gallup	5570'

Estimated Depth at which Anticipated Water, Oil, Gas, or Other Mineral-Bearing Formations are Expected to be Encountered

The possible oil or gas zones are the Pictured Cliffs, Chacra Zone, Cliffhouse, Menefee, Point Lookout, and Gallup.

Proposed Casing Program (including the size, grade, and water-per-foot of each string and whether new or used)

Casing program as per section 23 of form 9-33/C. All casing will be new.

(continued)

Lessee's or Operator's Minimum Specifications for Pressure Control Equipment which is to be used, a Schematic Diagram thereof Showing Sizes, Pressure Ratings (or API series), and the Testing Procedures and Testing Frequency

5. B.O.P.E. will be as shown in exhibit 3 attached hereto. The blind and pipe rams will be tested to 2000 psi and held for 20 minutes for each set of rams before the surface casing shoe is drilled out. During drilling, the pipe rams will be closed once a day and a check made for seating, fluid loss, and operation. On each trip, the blind rams will be closed and a check made for seating, fluid loss, and operation.

Type and Characteristics of the Proposed Circulating Medium or Mediums to be Employed for Rotary Drilling and the Quantities and Type of Mud and Weighting Material to be Maintained

6. The hole will be drilled with rotary tools to total depth. 12½ inch surface hole will be drilled with gel and lime mud to set 8 5/8" surface casing. 7 7/8" hole and CMC system weighing 8.8 to 9.1 ppg with a fluid loss of 10 cc or less.

Auxiliary Equipment to be Used (such as kelly cocks, floats at the bit, monitoring equipment on the mud system, a sub on the floor with a full opening valve to be stabbed into the drill pipe when the kelly is not in the string, etc.)

7. A kelly cock will be used on the kelly, and a bottom hole float will also be installed. A full opening safety valve subbed to drill pipe threads will be on the floor at all times. Monitoring of the mud system will be performed using floats and daily measurements by a mud engineer.

Testing, Logging, and Coring Programs to be Followed with Provision Made for Required Flexibility

8. Drill stem tests will be run if samples, shows in the mud or drilling breaks indicate hydrocarbons. The well logging program will consist of dual induction lateral log from TD to surface, a neutron and density log will be run across zone of interest, and a 60' core may be taken across the Gallup sandstone. If the well is determined to be commercial, 5½" casing will be run and cemented. The Gallup will then be perforated between approximately 5700 and 5800, and then fracture treated with approximately 50,000 gal fluid and 80,000 lbs sand. Rods and pump will be run after the well has cleaned up for production.
(See Exhibit 9 for completion wellsite layout.)

Any Anticipated Abnormal Pressures or Temperatures Expected to be Encountered or Potential Hazards such as Hydrogen Sulfide Gas, Along with Plans for Mitigating Such Hazards

9. No abnormal pressures or temperatures are anticipated. Also, no potentially hazardous hydrogen sulfide gas is expected.

Anticipated Starting Date and Duration of the Operations

10. Anticipated spud date is in the first part of July, 1979, with subsequent drilling and completion operations lasting 30-60 days.

(continued)

The Grace Petroleum Corporation
Multi-point Surface Use Plan
for
Well Location Grace Federal 1-21
(1730 FWL, 1650 FSL) NESW Section 21, T24N-R7W
Rio Arriba County, New Mexico

1. Existing Roads

The 1-21 location is shown on the attached topographic map (Exhibit 1). The routes to the location are in green (existing roads) and red (planned access). To reach the Grace Federal 1-21 from Bloomfield, New Mexico, go southeast on New Mexico Highway 44 approximately 53 miles. Turn left (North) immediately past Lybrook gas plant onto existing dirt road. Go approximately 7-1/2 miles turn West up Rincon Largo Canyon, go 6 miles West on existing road and 1-1/4 mile on new access road to proposed location.

2. Planned Access Roads

The planned access road shown on topographic map attached as a red line will proceed 1-1/4 mile West of the existing road to the well location, along the South line of Section 21. The width of the road will be approximately 16' wide. Maximum grade will be 15%. Two turnouts will be constructed, one at the bottom of the hill, and one at the top in SWSW Section 21. Three dry creek drainage crossings will be used. All drainage will be according to BLM and U.S. Forest Service standards. One dry creek will be dammed with proper overflow constructed. The dry creek is approximately 10' deep and will be dammed at surface lessee's request. The location of proposed dry creek is approximately 150' East and 200' North of the southeast corner of Section 22. The road will be bladed smooth and no additional surface material will be used. Per surface lessee's request, a cattle guard will be installed where access road crossed Sections 21 and 22. Access road will be center-line flagged at the time of location staking. Proposed construction of access road was approved by BLM, USGS and surface lessee during the archeologist's inspection.

3. Location of Existing Wells

A two-mile radius map, if exploratory, or a 1-mile radius map, if development well, showing and identifying existing (1) water wells, (2) abandoned wells, (3) temporarily abandoned wells, (4) disposal wells, (5) drilling wells, (6) producing wells, (7) shut-in wells, (8) injection wells, and (9) monitoring or observation wells for other resources is attached.

Exhibit 2 shows the existing wells within a one-mile radius of the proposed location. There are 10 existing oil wells and all are completed in the Gallup zone. There is 1 well in SESE Section 17 that is temporarily abandoned.

4. Location of Existing and/or Proposed Facilities

There are no existing lessee/operator owned facilities that we will be able to use for the proposed location. In the event of gas production a heated separator, flow lines, condensate, and water storage will be installed on the existing well pad (150' x 100'). In the event of oil production a beam pumping unit, heated 3-phase separator and 2-400 barrel tanks will be installed (150' x 100').

Any construction will utilize soil materials native to the site. Construction methods will be employed to assure no drainage flows are impounded. Construction will be performed to prevent loss of any hydrocarbon from the site. This will be done in a manner to facilitate rapid recovery and cleanup.

Any pits constructed will be fenced and flagged to protect wildlife and livestock. The pumping unit will be furnished with guards.

Following completion of construction, those areas not required for continued production, will be graded to provide drainage and minimum erosion. Those areas unnecessary for use will be graded to conform with the surrounding terrain and reseeded per BLM's recommendation.

5. Location and Type of Water Supply

Water needed for this operation will be hauled by truck from area ranchers' stock tanks. The stock tanks to be used are located 7 miles east of the 1-21 location.

6. Source of Construction Materials

The location will be built by taking a 3-4' cut from the east and west sides and a 1-2' cut from the south side and used as fill dirt on the north side, as required, to level the location.

All minerals and surface are owned by Bureau of Land Management. A private access road will be used in getting to the well location. R.O.W. will be obtained from Mr. H. C. Berry.

Exhibit 1 shows the required access road.

7. Methods for Handling Waste Disposal

A diked reserve pit, as shown on the attached well site diagram, will be built for the well cuttings and drilling fluid. Produced fluids will be stored in tanks on the location and hauled off the location by truck.

A small pit will be provided for garbage and trash, to hold it temporarily until it can be hauled to the nearest sanitary landfill. A portable toilet will be provided for human waste.

The clean-up of this location will proceed after the rig moves off, as outlined in Section 10 of this report.

(continued)

8. Ancillary Facilities

No ancillary facilities will be required.

9. Well Site Layout

The attached diagram shows the proposed well site layout (Exhibit 6). The location will be built by taking a 3-4' cut from the east and west sides and a 1-2' cut from the south side and used as fill dirt on the north side, as required, to level the location. The completion phase well site layout is attached (Exhibit 9).

10. Plans for Restoration of Surface

Within two months after the rig is moved off the location, those areas not needed for production facilities or for the rig required to abandon a dry hole will be cleared of temporary structure, the pits filled and the approximate natural contour of the ground restored. Trash will be hauled to the nearest sanitary landfill, permanent structures will be painted as recommended by the U.S. Geological Survey and the Bureau of Land Management, the stockpiled topsoil will be spread over the disturbed areas, and the area will be reseeded with the seed mixture selected by the U.S.G.S. and the B.L.M.

Prior to rig release, pits will be fenced and so maintained until clean-up. If it is determined there is oil on the pit, the oil will be removed or overhead flagging will be installed.

11. Other Information

A. Surface Description (Topography, Soil Characteristics, Geologic Features, Flora and Fauna):

Topographically, the proposed location is broken terrous top and slope with easterly drainage, alluvial surface deposits, and sandstone outcrops. Topsoil is a rocky clay loam. Principle vegetation is juniper, pinion, sagebrush, shadscale, blue grama, alkali sacaton, prickly pear, Indian paintbrush, snakeweed, rabbitbrush, locoweed, cholla, Indian ricegrass, narrow leaf yucca, galleta, cheatgrass and greasewood. Indigenous fauna to the area are deer, jackrabbit, various fowl and high plains animals.

B. Surface Ownership and Use:

For all lands to be affected by the construction of this location and the access road, the surface ownership of record is Bureau of Land Management.

C. Proximity of Water, Dwellings, Historical Sites:

(1) Water:

Nearest source of water is area ranchers' stock tanks located 7 miles east of proposed 1-21 location.

(continued)

11. Other Information (Continued)

(2) Occupied Dwellings:

Several occupied houses can be found 3/4 of a mile north-west of the proposed 1-21 location.

(3) Sites:

There are no known historical or cultural sites at this location. The area has been examined by a qualified Archeologist from New Mexico State University and their report is attached. Report No. 79-SJC-067 (Exhibit 7).

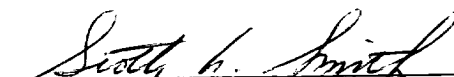
12. Operators Field Representative

Scotty A. Smith Work - 825-8193
1515 Arapahoe St. Home - 771-4562
Suite 200
3 Park Central
Denver, CO 80202

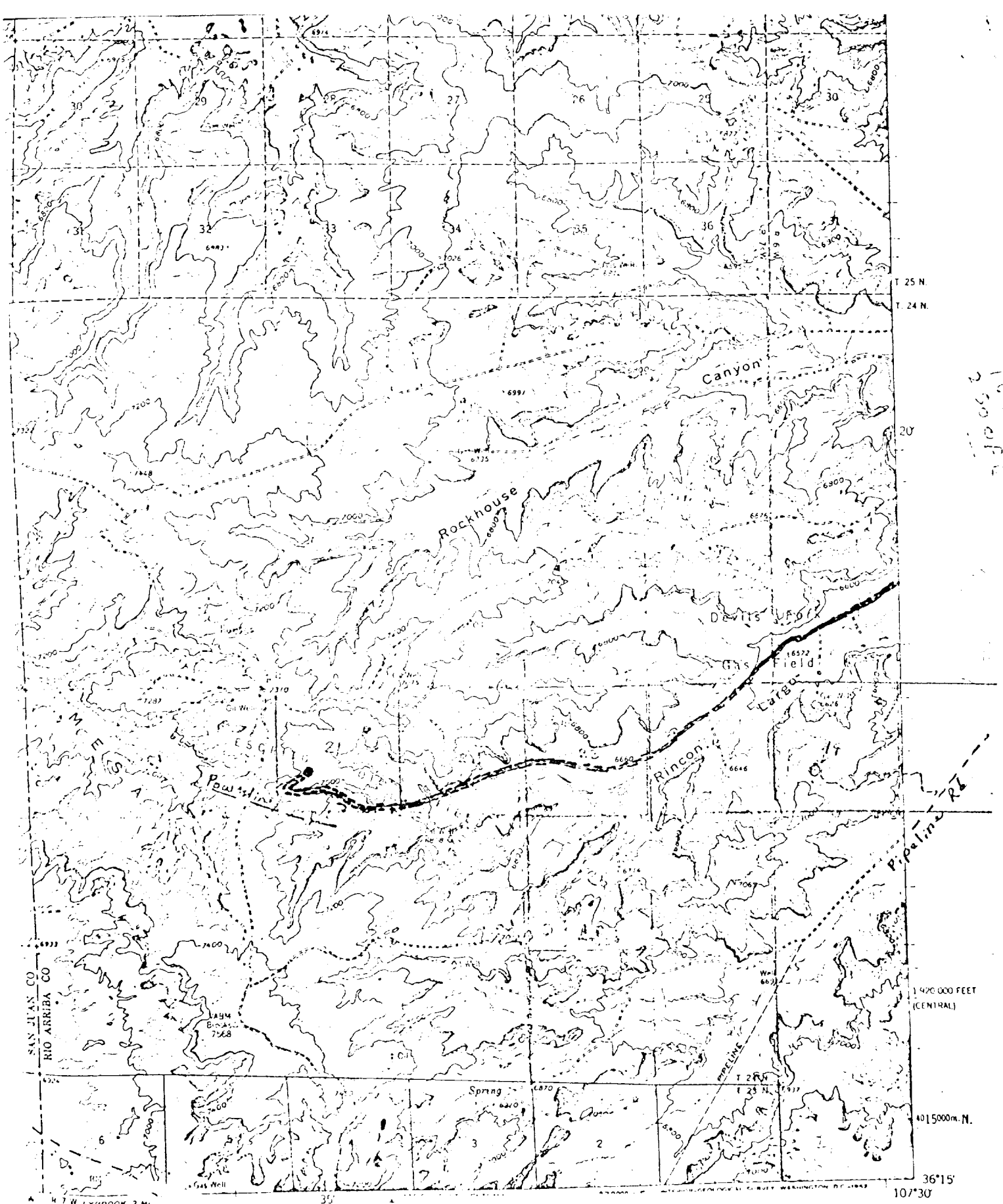
Benjamin C. Stromberg Work - 825-8193
Same Address Home - 753-1036

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 Grace Petroleum Corp. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.



Scotty A. Smith



Vicinity Map for
W. R. GRACE & CO. #1-21 GRACE-FEDERAL
1650' FSL 1730' FWL Sec 21-T24N-R7W
ARRIBA COUNTY, NEW MEXICO

EXHIBIT 1

NAGEEZI, N. MEX.

COMPASS
FED. 1-8



BCO
FED 1-7



BCO
FEDERAL

ESCRITO

REDFERN
DASHKO



BCO
6-ELIZABETH
FED.

2-COLEEN
JUDY

BCO
2-16 STATE

BCO
1-16 STATE

BCO
BIGBEE

PAN AMERICAN

DASHKO

1 FED 3-19

1 FED 3-20
BCO

PET C
CONNIE 2-21
CAL OIL
1 FED 3-21

BCO
1-22 STEPH-
ENSON

FED TPC
KINNEY FED. 21

BCO
2 FED 3-21

BCO
6-22 LYBROOK

REESE
BLAKELY 6-23 B

Proposed Loc.
Grace Federal 1-21

PET C
CONNIE 1-21

BCO
1-6-22 FED

BCO
4-22

BCO
2-22

REESE
LOVE 2-23

PET C
KENNE
3-23

EASTERN
1-22 FED

PET C
CONNIE 4-28

Supron Energy
1-ERNEST

BCO
7-27 LYBROOK

BCO
1-2-26

DORFMAN
1-30 FED.



PET C
3-29

ATOM



FIELD

BCO
1-27 FED.

PAN AMERICAN
1-ZANOTTI

DORFMAN
1-32 STATE

EXHIBIT 2

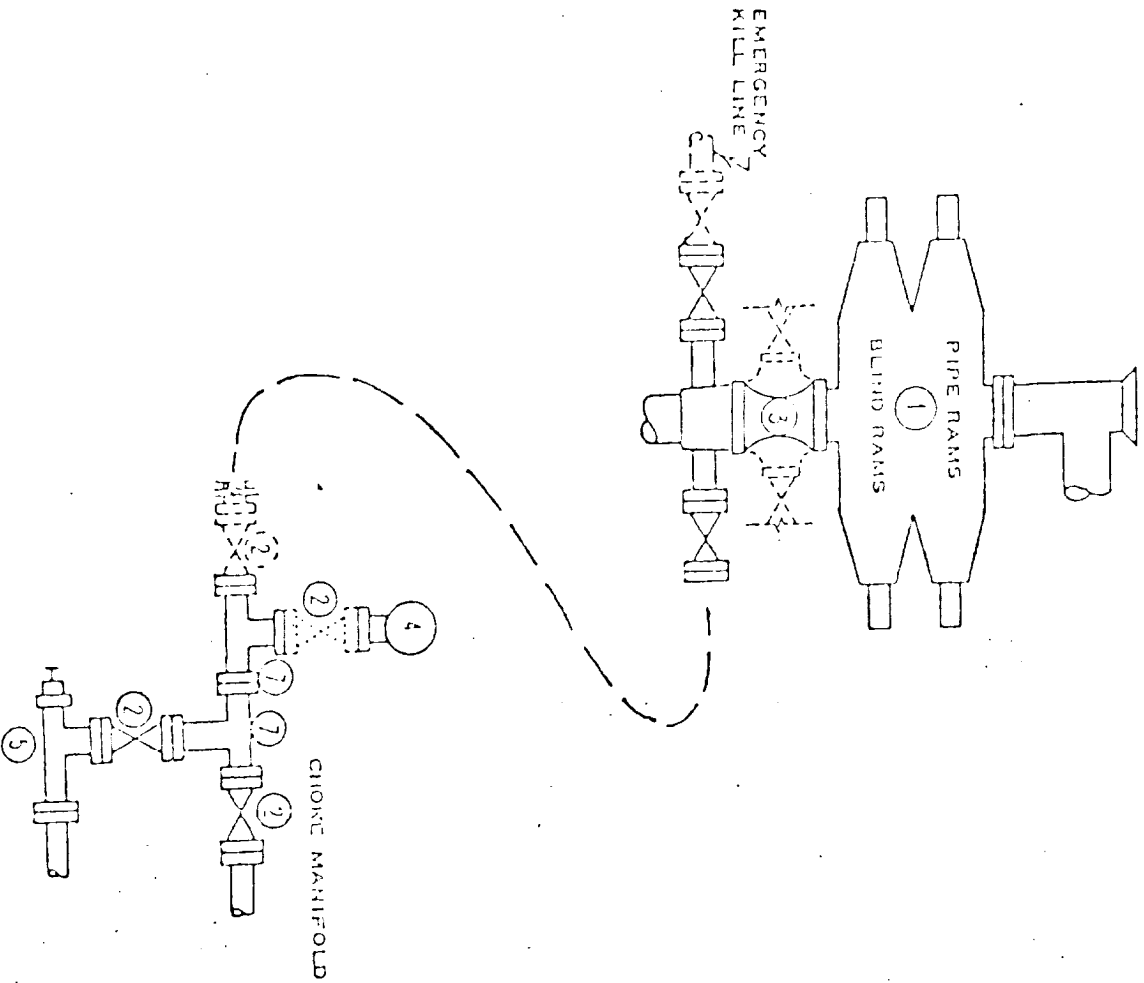
BCO
1-31 BETTYC



BASIN

ADOBE
1-DUGAN

DOUBLE PREVENTER



- ① SERIES 900 RAM-TYPE BOP
- ② 2" SERIES 900 VALVE
- ③ SERIES 900 DRILLING SPOOL
- ④ 2" MUD PRESSURE GAUGE
- ⑤ 2" SERIES 900 CHOKE
- ⑥ 2" SERIES 900 CHECK VALVE
- ⑦ 2" SERIES 900 STEEL TEE

NOTES:

1. 3000 PSI WP CLAMP
HOUS MAY BE SUBSTITUTED
FOR FLANGES
2. VALVES MAY BE EITHER HAND OR POWER
OPERATED BUT, IF POWER OPERATED,
THE VALVES FLANGED TO THE BOP HOUS
MUST BE CAPABLE OF BEING OPENED AND
CLOSED MANUALLY OR CLOSE ON POWER
FAILURE AND BE CAPABLE OF BEING
OPENED MANUALLY

..... OPTIONAL EQUIPMENT

3000 PSI WORKING PRESSURE
BLOWOUT PREVENTER HOOK-UP

EXHIBIT 3

(04-07-76)
WFO60-3109-3

REHABILITATION PLAN

Lease No.: SF-078924; Well Name and No.: Grace Federal 1-21;
 Location: BLM FSL # 173070L, Sec. 21, T. 24 N., R. 7 W.

Grace FTL Oil Company intends to drill a well on surface owned by BLM. The lessee/operator agrees to complete the following rehabilitation work if the well is a producer:

☒ Yes ☐ No Maintain access road and provide adequate drainage to road.

☒ Yes ☐ No Reshape and reseed any area not needed for maintenance of the pump and support facilities.

Other requirements: CONSTRUCT PLUGS UPSTREAM ACCESS IF CONSTRUCTION NECESSARY IN AREA

The following work will be completed when the well is abandoned:

☒ Yes ☐ No Pit will be fenced until dry, then filled to conform to surrounding topography.

☒ Yes ☐ No Water bars will be constructed as deemed necessary.

☒ Yes ☐ No Site will require reshaping to conform to surrounding topography.

☒ Yes ☐ No Entire disturbed area will be reseeded. If yes, the following seed mixture will be used:

BLM Mixture No. 2

☒ Yes ☐ No Access road will be closed, rehabilitated and reseeded using the same seed mixture as above.

☐ Yes ☐ No ^{Possibly} Access road will remain for surface owner's use.

☒ Yes ☐ No Water bars will be constructed on the access road as deemed necessary.

Other requirements: Cattle guard installed @ Section 24

Surface Owner:

Operator/Lessee

** Name: Homer C. Berry dba Berry Land & Cattle
 Address: Box 407
 City: Dexter
 State: New Mexico
 Telephone: 505/734-5897 or 505/568-4422
 Date: _____

Name: Grace FTL Corp
 Co. Address: 1515 N. 1st St.
 City: Dexter
 State: Colorado
 Telephone: 303 825-8193
 Date: 5-3-79

I CERTIFY rehabilitation has been discussed with me, the surface owner:

**BLM is actual surface owner, but we will be using Mr. Berry's access roads.

H. C. Berry
 (Surface owner's signature)

This plan covers rehabilitation requirements only and does not affect any other agreements between the lessee/operator and surface owner.



Grace Petroleum Corporation
Subsidiary of W. R. Grace & Co.
Three Park Central Suite 200
1515 Arapahoe Street
Denver, Colorado 80202
Phone (303) 825-8193

EXHIBIT 5

TO WHOM IT MAY CONCERN:

I, H. C. Berry representing Berry Land & Cattle Co. Inc.
acknowledge that I was contacted by a representative of Grace Petroleum Corporation,
Three Park Central, Suite 200, 1515 Arapahoe Street, Denver, Colorado 80202. This
contact was made for the purpose of approval to survey and stake the following oil
and/or gas well drilling location. Approval of the surface land owner to survey and
stake the location specified is signified by signature in the space provided below.

WELL LOCATION: Section: 21, Township: 24N, Range: 7W,
County Rio Arriba, State New Mexico

It is also requested that the following questions be answered by the surface
owner:

1. The length of time this tenant has been on the property? 16 YEARS
2. To your knowledge, are there any mining claims or active mines on this
property? NOT TO OWNER'S KNOWLEDGE
3. To your knowledge, are there any buried lines on the property, such as
hydrocarbon, telephone or missile base lines? No

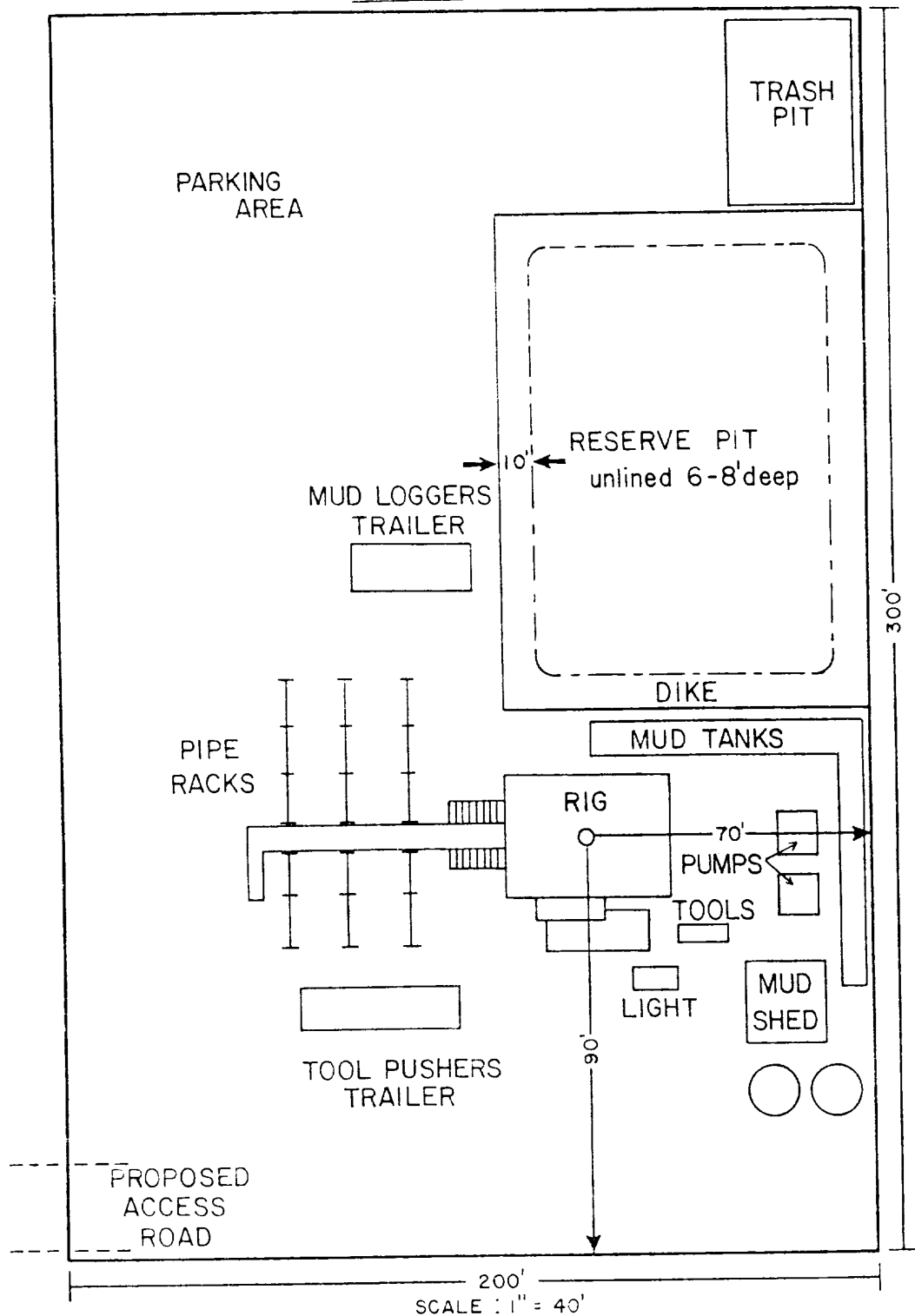
If this location is suitable for a drilling site a Grace representative will
contact you for the purpose of negotiating a reasonable surface damage fee and for
the usage of any roads that we may use in drilling and completing this well.

APPROVAL: H. C. Berry

Signature

DATE: 5-3-79

EXHIBIT 6



GRACE FEDERAL 1-21
NE SW SEC. 21, 24N-7W
RIO ARRIBA CO., NEW MEXICO



A subsidiary of
W.R. Grace & Co.

GRACE Petroleum Corp.
Rocky Mountain Region
1515 Arapahoe Suite 200 Three Park Central
Denver, Colorado 80202 (303) 825-8193

DRAFTING: PFEIFFENBERGER
5/16/79

Report 79-SJC-067
Permit 78-NM-102

EXHIBIT 7

An Archaeological Clearance Survey of
Two Proposed Well Locations & Access Roads
Conducted for Grace Petroleum Company

Dabney Ford
Cultural Resource Management
San Juan Campus
N. M. State University

11 May 1979

An Archaeological Clearance Survey of
Two Proposed Well Locations & Access Roads
Conducted for Grace Petroleum Company

On May 3, 1979, Dabney Ford from the Cultural Resource Management Program, NMSU, San Juan Campus, conducted an archaeological clearance survey at the request of Mr. Scott Smith from Grace Petroleum Company. Present during the inspections were Mr. Smith, Mr. Gerald Rodgers, Construction Contractor, Mr. Don Englishman from the U. S. Geological Survey, Durango, Colorado, office, and Mr. Russell Pigors from the U. S. Bureau of Land Management, Farmington office. The proposed wells and access roads are on Bureau of Land Management lands and were surveyed under Federal Antiquities permit 78-NM-102.

METHODOLOGY

Each well location was inspected by walking parallel transects, 75 feet apart, over the 300 X 300 foot easements. The access roads were surveyed by walking the length of the flagged route from the take-off of an existing road to the well.

GENERAL RECOMMENDATIONS

No cultural resources were found and full archaeological clearance is recommended.

Proposed Well: GRACE FEDERAL #1-19

Land Status: Bureau of Land Management

Location: The location is in the NW $\frac{1}{4}$ of the NE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 19, Township 24 North, Range 6 West, N.M.P.M., in Rio Arriba County, New Mexico. The well will be 1880 feet from the South line and 1650 feet from the West line of Section 19. (Figure 1)

Access: The south and east edge of the location borders on existing roads.

Area surveyed: 2.10 acres.

Terrain: Rolling mesa top with easterly drainage, alluvial surface deposits, and sandstone outcrops.

Soil: Sandy clay loam.

Vegetation: Juniper, piñon, sagebrush, blue grama, three awn, galleta, winterfat, tumbleweed.

Cultural Resources: None found.

Recommendations: Clearance is recommended.

Proposed Well: GRACE FEDERAL #1-21

Land Status: Bureau of Land Management

Location: The location is in the SW $\frac{1}{4}$ of the NE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 21, Township 24 North, Range 7 West, N.M.P.M., in Rio Arriba County, New Mexico. The well will be 1650 feet from the South line and 1730 feet from the West line of Section 21. (Figure 1)

Access: 4000 feet long and 20 feet wide, approaching the well from the west/southwest.

Area surveyed: 3.9 acres.

Terrain: Broken terraces top and slope with easterly drainage, alluvial surface deposits, and sandstone outcrops.

Soil: Rocky clay loam.

Vegetation: Juniper, piñon, sagebrush, shadscale, blue grama, alkali sacaton, prickly pear, Indian paintbrush, snake-weed, rabbitbrush, locoweed, cholla, Indian ricegrass, narrow leaf yucca, galleta, cheatgrass, and greasewood.

Cultural Resources: None found.

Recommendations: Clearance is recommended.

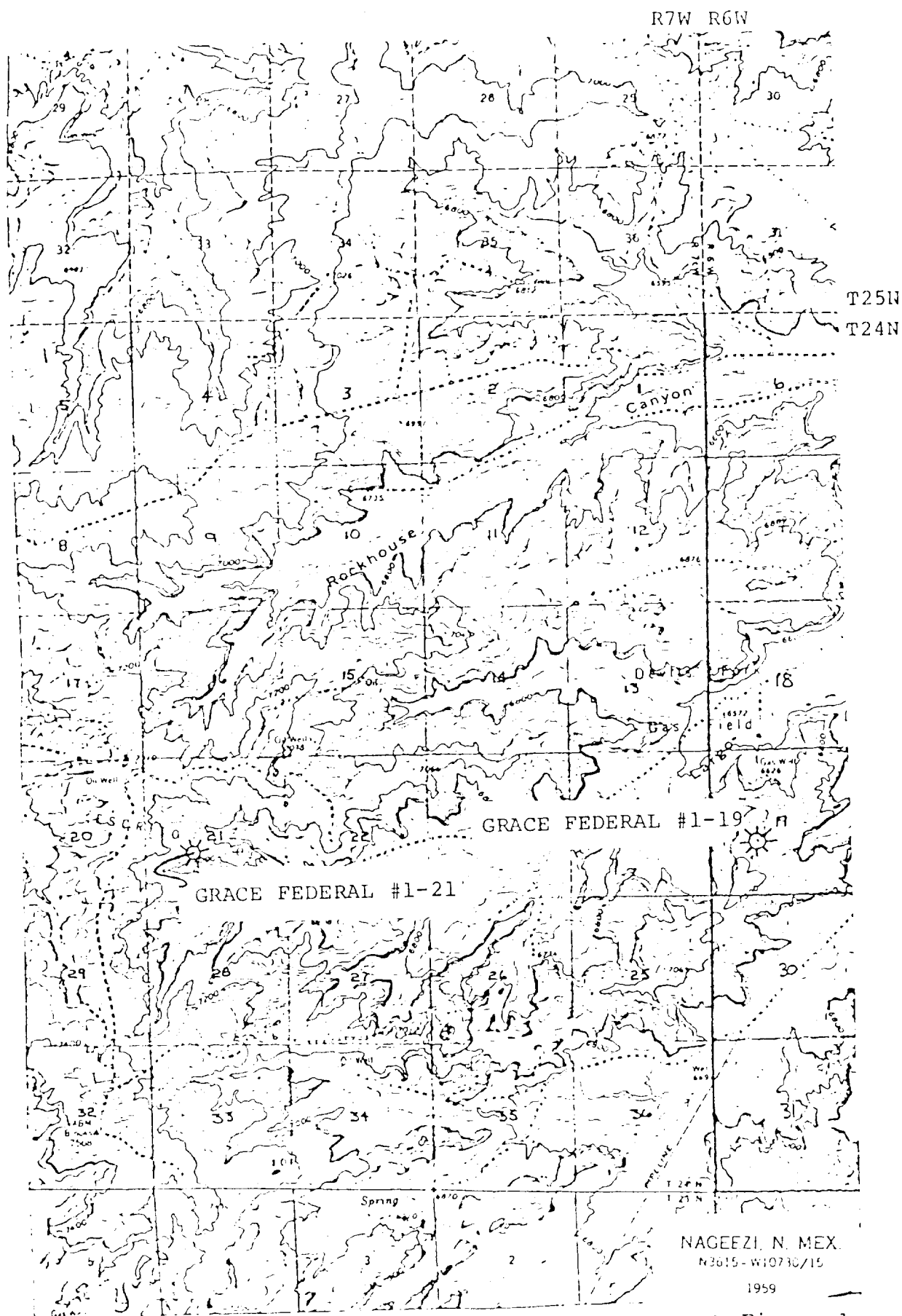
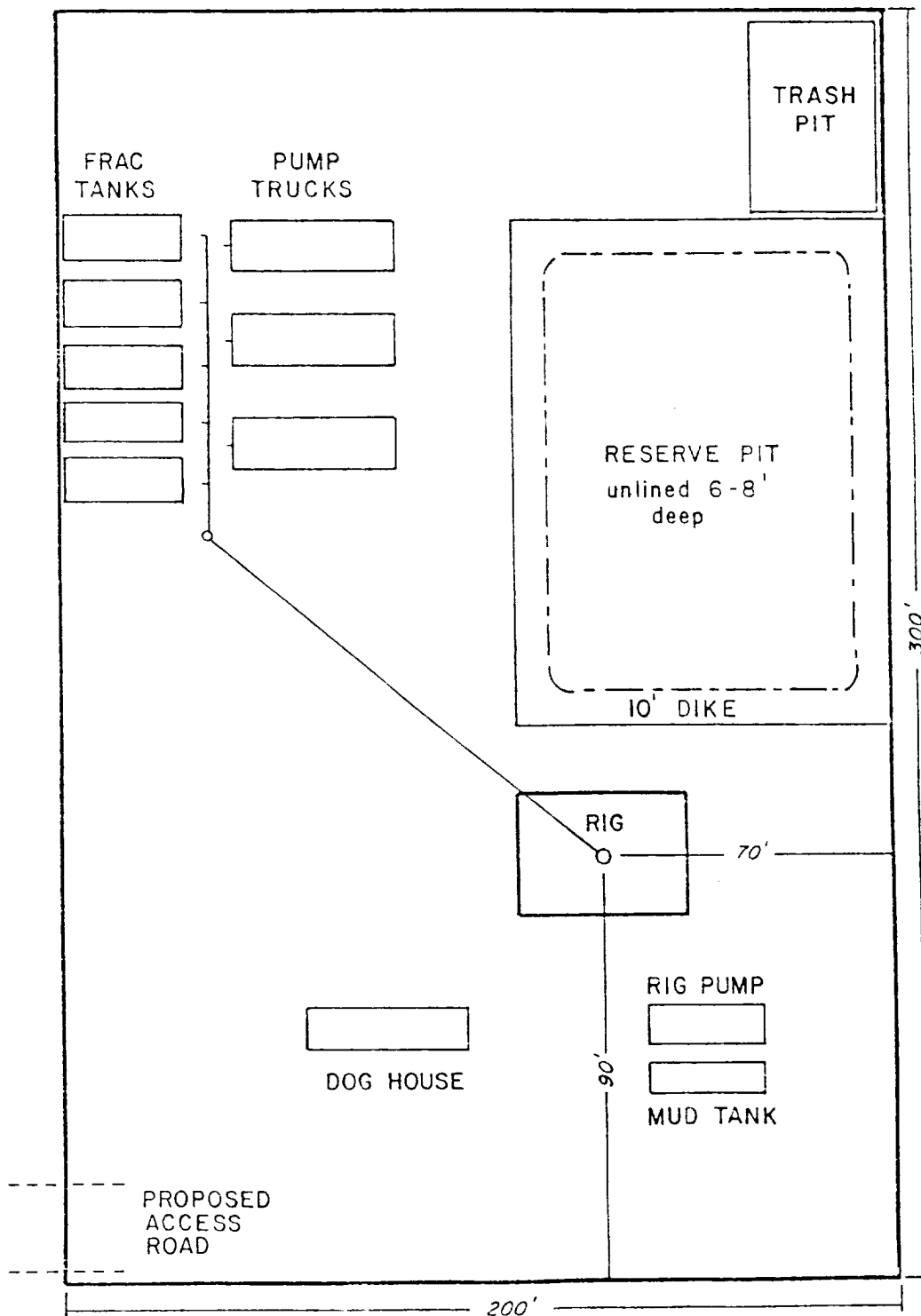


Figure 1



GRACE FEDERAL 1-21
NE SW, Sec. 21-24N - 7W
RIO ARRIBA CO., NEW MEXICO



GRACE Petroleum Corp.
Rocky Mountain Region
1515 Arapahoe Suite 200 Three Park Central
Denver, Colorado 80202 (303) 825-8193

5-23-79

Exhibit 9