

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

Engineering Production Service Inc.

3. ADDRESS OF OPERATOR

Box 190; Farmington, NM 87401

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

At surface

660' FNL & 660' FEL

At proposed prod. zone

SAME

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)

16. NO. OF ACRES IN LEASE

2560

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

19. PROPOSED DEPTH

2750

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

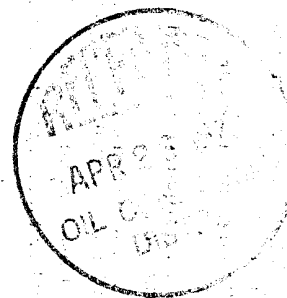
6710 G.L.

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 (new)	20	100	100 sk.
7 7/8	4 1/2 (new)	9.5	2750	325 sk.

(See attachments)



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

John Alexander
John Alexander

TITLE AGENT

DATE 4-25-78

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY

TITLE

CONDITIONS OF APPROVAL, IF ANY:

ok Frank

*See Instructions On Reverse Side

RECEIVED

APR 23 1978

U. S. GEOLOGICAL SURVEY
DURANGO, COLO.

**NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACERAGE DEDICATION PLAT**

All distances must be from the outer boundaries of the Section

Operator ENGINEERING AND PRODUCTION SERVICE, INC.				Lease STAR LAKE		Well No. 1
Unit Letter A	Section 26	Township 20 NORTH	Range 6 WEST	County McKINLEY		

Actual Footage Location of Well:
660 feet from the **NORTH** line and **660** feet from the **EAST** line

Ground Level Elev. 6710	Producing Formation Mesa Verde (Point Lookout)	Pool Wildcat	Dedicated Acreage: 40 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 If answer is "yes," type of consolidation

If answer is "no," list the owners and tract descriptions which have actually 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.

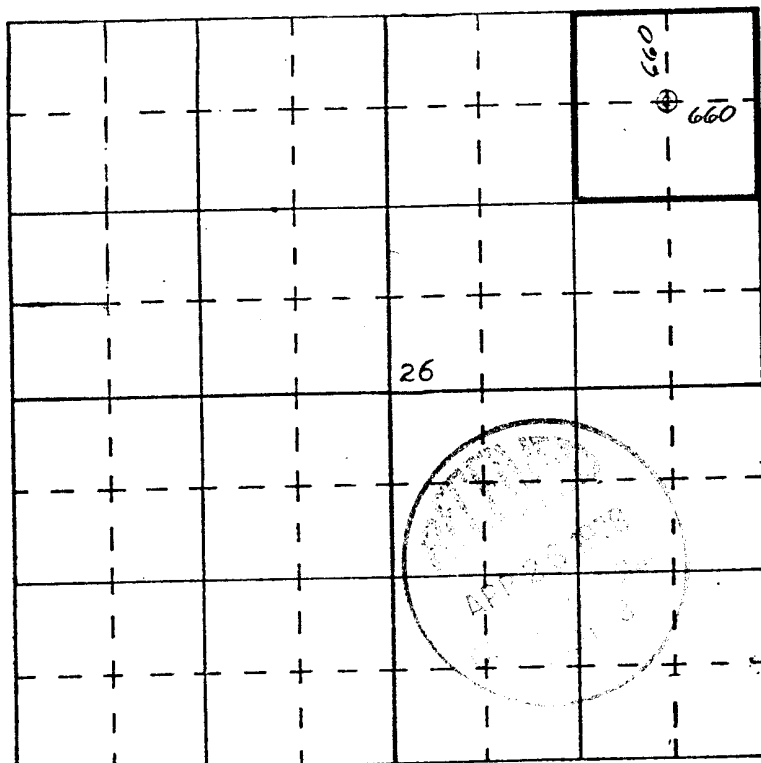
CERTIFICATION

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

John Alexander
 Name
John Alexander
 Position
Agent
 Company
Engineering & Production Service Inc.
 Date
4-25-78

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.

7 April 1978
 Date Surveyed
James P. Leese
 Registered Professional Engineer
 and/or Land Surveyor **James P. Leese**



SCALE—4 INCHES EQUALS 1 MILE

SAN JUAN ENGINEERING COMPANY, FARMINGTON, N. M.

Certificate No. **1463**

Engineering & Production Service, Inc.

Formation Information and Drilling Practices

WELL:

Star Lake #1

LOCATION:

660' FNL & 660' FEL
Sec. 26- T20N-R6W
McKinley Co., NM

LEASE NUMBER:

NM-5981

1) Geologic name of surface formation.

Kirtland

2) Estimated tops of important geologic markers.

La Ventata	852
Chacra	1210
Cliff House	1756
Menefee	1818
Point Lookout	2652

3) Estimated depths at which anticipated water, oil gas or other mineral-bearing formations are expected.

2652' - oil & gas

4) Proposed casing program.

Surface: 8 5/8", 20#, K-55, new casing to be set at 100'. Cement will be with 100 sk. Class "B" + 2% gelt 0.5% CaCl₂.

Production: 4 1/2", 10.5#, K-55, New casing to be set at 2750'. Cement will be 325 sk. Class "B" + 2% gel +0.5% CFR-2.

5) Specifications for pressure control equipment.

The attached schematic shows the type of blow out preventer to be used while drilling. The unit will be tested to 800 psi with the rig pump prior to drilling from under surface. Both blind and pipe rams will be tested. Operation of the hydraulic system will be checked daily.

6) Drilling fluids.

Depth	Type	Vixcosity	Weight	Fluid Loss(cc)
0-100	gel-lime	35-45	8.6-9.0	N/C
100-2600	low-solids	29-33	8.4-8.8	15
2600-2750	gel-chem	35-40	8.8-9.4	8

7) Auxiliary equipment.

- a. bit float
- b. full opening stabbing valve to be used when kelly is not in the string

8) Logging-Coring-Testing.

Logging:

Induction Electric log
Formation Compensated Density
Gamma Ray
Caliper

8) Coring:

None

Drill Stem Testing:

None

9) Abnormal temperatures, pressures, or hazardous conditions.

None Expected.

10) Starting date.

Anticipated starting date is May 8, 1978. Approximately 6 days will be needed to build roads and location and drill the well to total depth. If commercial, completion will commence immediately and require 10 days.



SHAFFER HYDRAULIC BLOWOUT PREVENTERS

(Patented)

TYPE LWS PREVENTERS—8", 3000 lb. & 5000 lb.—10", 5000 lb.
12", 3000 lb.—13⁵/₈", 5000 lb.—16", 3000 lb.

PARTS AND DIMENSIONAL ILLUSTRATIONS

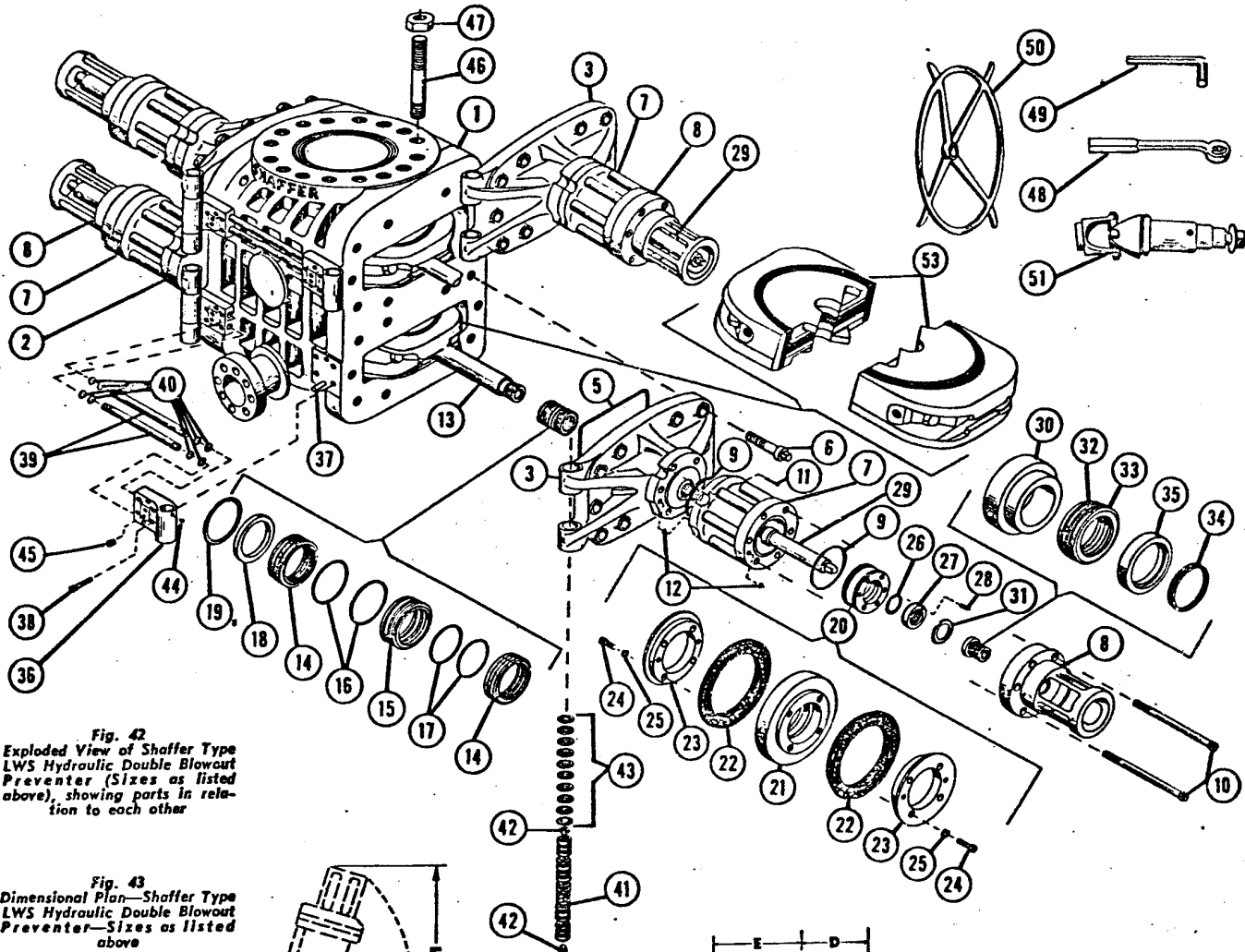


Fig. 42
Exploded View of Shaffer Type
LWS Hydraulic Double Blowout
Preventer (Sizes as listed
above), showing parts in rela-
tion to each other

Fig. 43
Dimensional Plan—Shaffer Type
LWS Hydraulic Double Blowout
Preventer—Sizes as listed
above

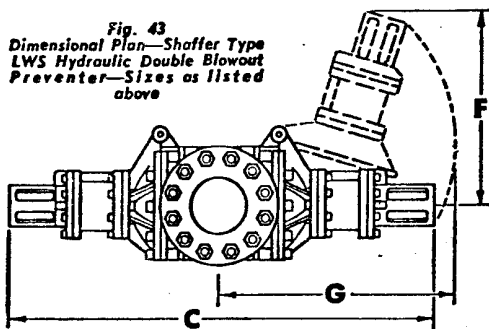
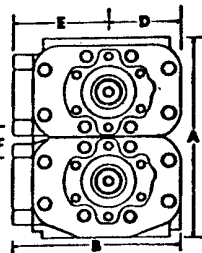


Fig. 44
Dimensional End Elevation—
Shaffer Type LWS Hydraulic
Double Blowout Preventer—
Sizes as listed above



STANDARD ACCESSORIES

- (50) 4 Hand Wheels
- (48) 1 Door Wrench
- (49) 1 Cylinder & Cylinder Head Wrench
- (51) 4 Universal Joints

DIMENSIONAL AND ENGINEERING DATA ON ABOVE SIZES OF TYPE LWS PREVENTERS

Refer to Figs. 43 and 44

Size	Max. Service Press. Rating psi	Test Press. psi	Vertical Bore	Max. Ram Size	Approx. Weight Lbs.		A				B	C	D	E	F	G	Closing Ratio	Opening Ratio	U.S. Gal. Fluid To Close Rams	U.S. Gal. Fluid To Open Rams				
					Studded Flange		Height		Studded Flange	Bolted Flange											Studded Flange	Bolted Flange		
							Single	Double															Single	Double
8"	3,000	6,000	9"	7"	----	3,900	----	----	20½"	41½"	25½"	70½"	11½"	14½"	22"	48"	5.6 to 1	1.89 to 1	2.75	2.3				
8"	4,000	10,000	9"	7"	----	3,900	----	----	20½"	45½"	25½"	70½"	11½"	14½"	22"	48"	5.6 to 1	1.89 to 1	2.75	2.3				
10"	5,000	10,000	11"	8½"	5,600	7,000	24½"	34½"	23"	50½"	28½"	80½"	12½"	18"	22"	48"	5.5 to 1	1.5 to 1	2.25	2.7				
12"	3,000	6,000	13½"	10½"	----	6,300	----	----	24½"	47½"	31½"	92½"	13½"	18½"	27"	53"	5.5 to 1	1.89 to 1	3.53	2.9				
12½"	5,000	10,000	13½"	10½"	6,800	9,700	28½"	38½"	28"	49½"	33½"	92½"	14½"	18½"	41"	54"	5.5 to 1	1.5 to 1	3.63	2.9				
16"	3,000	6,000	16½"	12½"	----	8,500	----	----	35"	81"	55½"	106½"	16½"	20½"	32"	60"	5.6 to 1	1.89 to 1	3.6	2.3				

Engineering and Production Service, Inc.

Surface Development Plan

WELL:

Star Lake No. 1

LOCATION:

660' FNL & 660' FEL
Sec. 26-T20N-R6W
McKinley Co., NM

LEASE NUMBER:

NM-5981

1) Existing roads. (Shown in green)

The attached topographic map shows all existing roads within three (3) miles of the proposed location. All roads are in fair condition and will require a minimal amount of work to upgrade them to handle normal drilling activity traffic.

2) Planned access road. (Shown in red)

The new access road will be approximately 20' wide and 1 mile long. No cut, fill, turnouts, or culverts will be needed. No fences, gates or cattle guards will be crossed. Maximum grade will be 5%. Water bars will be used where needed to aid drainage and help prevent erosion.

3) Location of existing wells.

All wells (water, abandoned, disposal, and drilling) are shown and so labeled on the attached topographic map.

4) Location of existing production facilities.

All production facilities are to be contained within the proposed location.

Engineering & Production Service, Inc. does not own or control any tank batteries, production facilities or production, gathering and service lines within three miles of the proposed location.

5) Location and type of water supply.

Water for drilling will be trucked from Chapman's water hole, approximately 35 miles northwest of the location. This water is privately owned.

6) Source of construction material.

Any construction material required for road or location will be excess material accumulated during building of such sites.

7) Methods of handling waste material.

(Refer to attached well site layout.)

All material that can be safely burned will be so disposed when weather conditions permit.

All nonburnable waste (drilling fluids, cuttings, chemicals, etc.) will be held in the reserve pit until dry, and then buried. Any oil that accumulates on the pit will be removed prior to leaving the pit to dry. Pits will be fenced during dry out, then completely back-filled with dirt prior to preparing the location for production or abandonment.

- 7) Any solid waste that can not be buried will be taken from the location and properly destroyed.

All portable chemical toilet will be supplied for human waste.

- 8) Ancillary facilities.

None planned.

- 9) Well site layout.

The attached layout shows the drilling rig with all supporting facilities. Cut and fill, required for pad construction, is also shown.

- 10) Plans for restoration of surface.

Restoration of the well site and access road will begin within 90 days of well completion, weather permitting.

Should the well be abandoned, the drilling site will be reshaped to its approximate former contour. The access road will be plowed and leveled. Both road and location will have top soil replaced and will be reseeded when germination can occur.

Should the well be commercial, that portion of location not needed for operation will be repaired as above. The portion of the location needed for daily production operations, and the access road, will be kept in good repair and clean.

In either case, cleanup of the site will include burning any safely burnable material, filling of all pits, and proper disposal of any nonburnable material that can not be safely buried. Any oil that has accumulated on the pits will be trucked away.

- 11) Other information.

General topography of the area may be seen on the attached map.

This location is one mile west of the Continental Divide at Ceja Del Raton Mesa. The site has a small westerly slope. The area is sandy and is covered with sage brush and native grasses. There is evidence of sheep and small animal life in the area.

Surface at this location belongs to the State of New Mexico.

There are no occupied dwellings in the area.

There were no archaeological or cultural sites visible on the location. The archaeologist's report is forthcoming.

12)

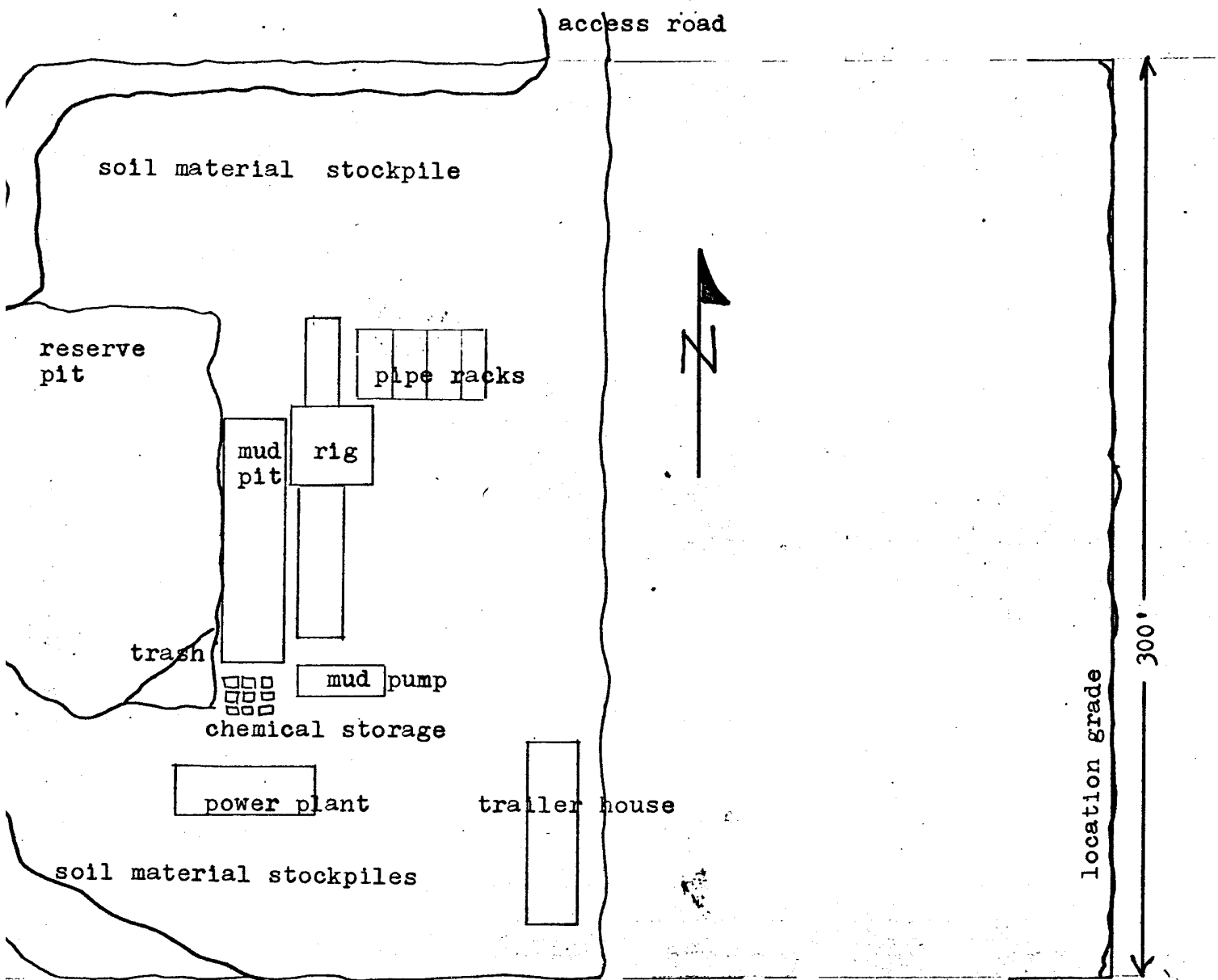
John Alexander
3E Company, Inc.
P.O. Box 190
Farmington, NM 87401
Phone: 505-327-4020

13)

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 the 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 Engineering & Production Service, Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

7-25-78

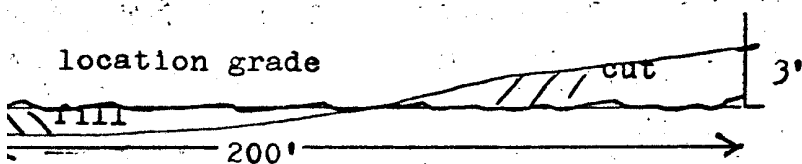
John Alexander
John Alexander

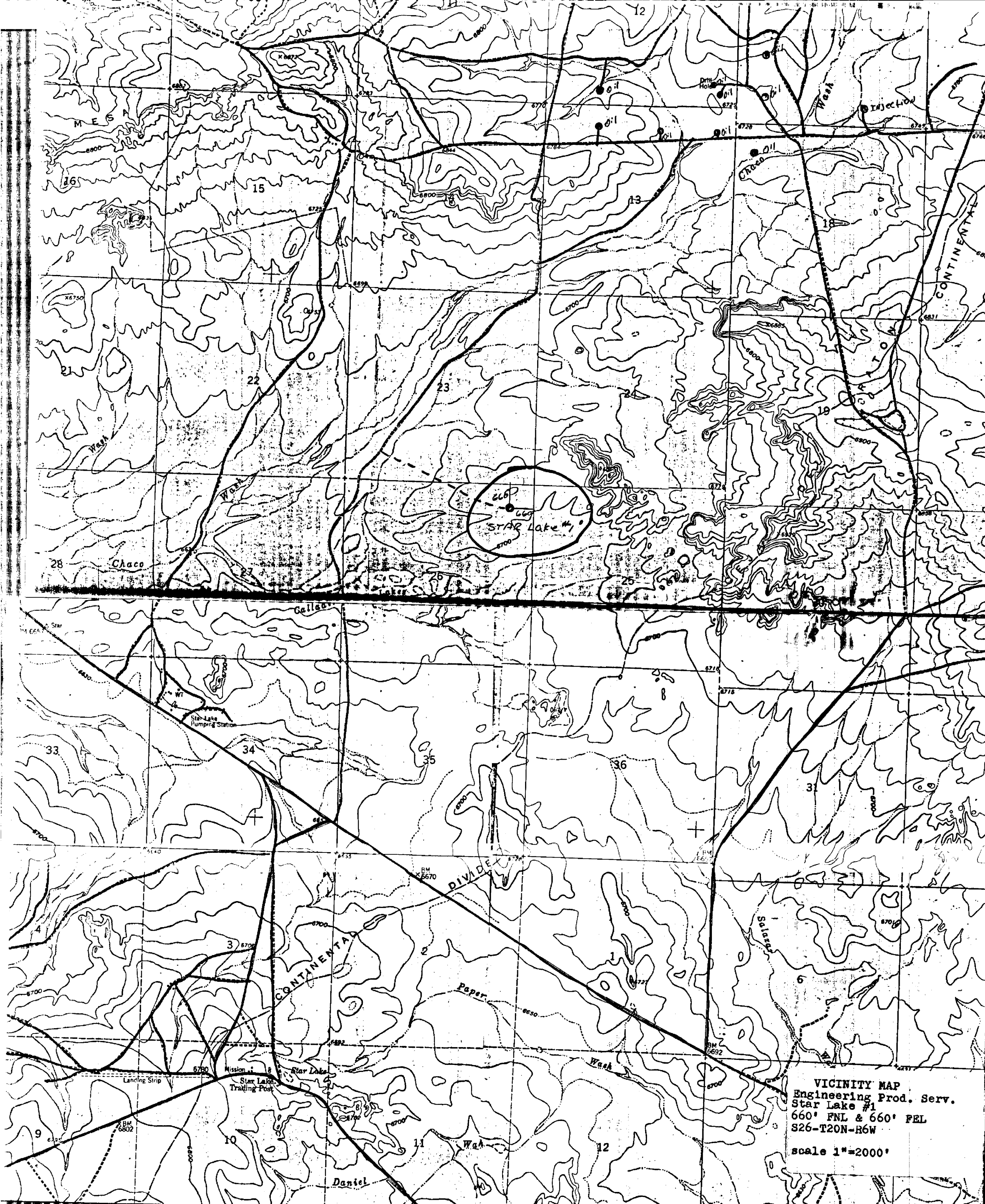


horizontal scale 1"=50'

vertical scale: 1"=10'

WELL SITE LAYOUT
Engineering Production Service
Star Lake #1





VICINITY MAP
Engineering Prod. Serv.
Star Lake #1
660' FNL & 660' FEL
S26-T20N-R6W
scale 1"=2000'