

FILE NOTATIONS

Entered in NID File ✓
Location Map Pinned ✓
Card Indexed ✓

Checked by Chief ✓
Approval Letter ✓
Disapproval Letter

COMPLETION DATA:

Date Well Completed 5-17-78

Location Inspected ..

Bond released

State or Fee Land

TA.....

PA. ✓

LOGS FILED

Driller's Log ✓

Electric Logs (No.) ✓

E..... I..... Dual I Lat..... GR-N..... Micro.....

BNC Sonic GR..... Lat..... MI-L..... Sonic.....

GBLog..... CCLog..... Others.....

5-17-70 Plugged & abandoned

PROGNOSIS FOR
 CISCO DRILLING & DEVELOPMENT CO.
 CISCO #4 WELL
 NE. SW. SEC. 27-20S-23E
 GRAND COUNTY, UTAH

Location: NE. SW. Sec. 27, T. 20 S., R. 23 E., S. L. M., Grand County, Utah
 (1971' from S-line & 2130' from W-line).

Elevation: 4845' grd.; 4855' K.B.

Surface Casing: 150 ft. of 7 in., O.D., 20.00#, J-55, 8 Rd, LTC, new;
 set and cemented with returns to the surface.

Expected Formation Tops:

<u>Formation</u>	<u>Depth to top</u>	<u>Thickness</u>	<u>Datum</u>
Mancos	Surface	1850'	4855' K.B.
Dakota	1850'	40'	3005'
Cedar Mountain	----- (Probably not present)		
Morrison (B.B.)	1890'	350'	2965'
Morrison (S.W.)	2240'	250'	2615'
Curtis	2490'	60'	2365'
Entrada	2550'	-----	2305'
T.D.	2600'		

1. It is planned to drill a 9 3/4" surface hole for the surface casing down to a depth of about 150 ft. and set 7 in. casing with approx. 60 sks of cement with returns to the surface. A casing head will be mounted on top of the surface casing and a blowout preventer with blind and pipe rams (hydraulic) will be mounted on the casing head. A rotating head will then be mounted on top of the blowout preventer. A blewie line, at least 100 ft. long, will then be attached to the rotating head and extended into the reserve pit.
2. A 6 1/4" hole will then be drilled below the surface casing, using air for circulation. A flare will be maintained at the end of the blewie line at all times while drilling below 1000'. This will insure that no gas will be missed. The air drilling will also minimize the damage to the hydrocarbon reservoir.
3. Samples of the cuttings will begin at 1000'. 30-ft. samples will be taken from 1000' to 1500', and then 20-ft. samples will be taken from 1500' to total depth.
4. It is planned to drill the well to a depth which is 50 ft. below the top of the Entrada formation unless good commercial flow of gas (250 MCF or more) is obtained above this depth.



5. If a high gas flow (several million cubic feet) and/or when the total depth of the well is reached, electric logs will be run. Prior to running logs, high viscosity mud (not less 100 vis.) will be pumped into the hole to provide control of the gas and to provide a conductive medium for the logs. An induction-electrical log will be run from bottom to the top of the hole, and a gamma-density and compensated neutron porosity log will be run from the bottom to a point which is 150' above the top of the Dakota formation.

(Note: In the event a small gas flow (less than 750 MCFD is obtained, it may be desirable to run casing, 4½" O.D., thru the rotating head prior to mudding up and running logs, with cement baskets and DV tool on the casing so that the casing can be cemented above the production zone; thereby preventing any damage to the formation and eliminating considerable completion expense. This is an important consideration when the volume of gas is low and the return from the well would be correspondingly low. The well could then be logged inside the casing with a gamma-neutron log.)

6. If good production (over 750 MCFD) is obtained 4½" O.D., 9.50#, J-55 or H-40, new casing will be run and cemented conventionally with sufficient cement to cover 200 ft. above the top of the Dakota formation. The production zone will then be perforated, 2 3/8" O.D. tubing run, and completed conventionally.
7. It is anticipated that the drilling of the well will require less than one week.

W. Don Quigley
W. Don Quigley

Consulting Geologist
Salt Lake City, Utah



SURFACE USE & OPERATIONS PLAN
FOR
CISCO DRILLING & DEVELOPMENT CO.
CISCO #4 WELL
NE.SW.SEC.27-20S-23E
GRAND COUNTY, UTAH

1. A survey plat showing the location of the proposed well site is attached, (See Plat No.1). Map No.1 shows the route to the well site from existing roads in the area. The east Cisco exit on E70 is ^{used} This map shows the secondary roads in the surrounding area. It is about 7 miles to the location from the hiway The road to the location area is in good shape & will support heavy trucks. The location is about 1/8 mile off the main road to the SW.
2. Planned Access Rd.: The access road, see attached map, is across fairly level ground which is covered with sage brush and some grass. Little grading will be required. Rd will be 14 ft. wide. No culverts or other road material will be needed.
3. Location of Existing Wells: See Map
4. Location of Production Equipment: A plan for the anticipated production equipment, if the well is successful, is submitted on Plat No.2. When production ceases this equipment will be removed and the land surface graded, levelled and reseeded.
5. Water Supply: Very little water will be required for the drilling operations of the subject due to using air for circulation. The water required will be hauled by truck to the location from Cottonwood Creek or from Cisco Wash. Both have water holes. Cisco Wash would be closest, about 4 miles away.
6. Road Material: No additional road material, gravel, sand or culverts, will be required for the proposed drilling operations.
7. Waste Disposal: A reserve and burn pit will be constructed at the well site. All excess water, mud, and drill cuttings will be deposited into the reserve pit. Burnable material and garbage will be put into the burn pit. Both of these pits will be folded in and covered as soon as feasible after the cessation of drilling operations.
8. Camp Facilities and Airstrips: No camp facilities other than two or three house trailers at the well site will be needed. No airstrips will be required.

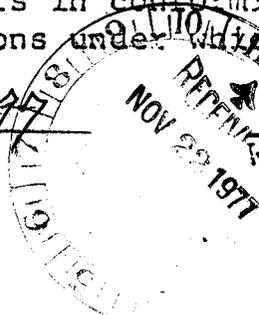


9. Well Site Layout: A plan for the drilling equipment layout required for the drilling operations is submitted on Plat No. 3. The approximate dimensions of the drill site are shown. The site will be levelled for this equipment. Since the site is quite level, it will not be necessary to make any deep cuts or major surface shift. The reserve pit will be about 4 ft. deep with 4-ft. banks. The sage brush will be removed.
10. Restoration: After the drilling operations have been concluded and the equipment removed, the well site area will be cleaned, levelled and restored to normal. The pits will be covered and the area reseeded, if the well is not successful. Otherwise the site will be levelled and prepared for the placement of the production equipment. This work will be accomplished within 30 days after the drilling equipment has been removed.
11. Land Description : The proposed well site is located near the present secondary rd. and is on fairly level ground that is covered with heavy sage brush. There is no other natural vegetation on the site area. The surface is Mancos shale, and some gravel from erosion and deposition along the wash. Very little grading to the location will be required.
12. Representative: The operator's representative at the well site will probably be W. Don Quigley, 57 West South Temple Bldg., Salt Lake City, Utah. The location work and restoration work will probably be done by the Jacobs Drilling Co., of Grand Junction, Colorado .
13. Certification:

I hereby certify that I, or persons under my direct supervision, have inspected the drill site and access route; that I am familiar with the conditions which presently exist; that 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 Disco Drilling & Development Co. and its contractors in conformity with this plan and terms and conditions under which it is approved.

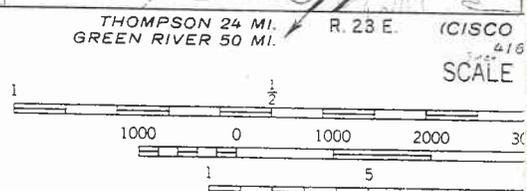
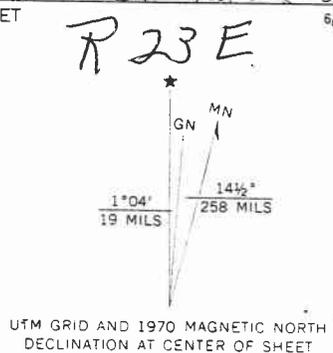
Date: Nov. 18, 1977

W. Don Quigley
W. Don Quigley, Consultant





Edited, and published by the Geological Survey
 USGS and USC&GS
 by photogrammetric methods from aerial
 photos taken 1969. Field checked 1970
 projection. 1927 North American datum
 grid based on Utah coordinate system, central zone
 Universal Transverse Mercator grid ticks,
 shown in blue
 Dashed lines indicate selected fence lines

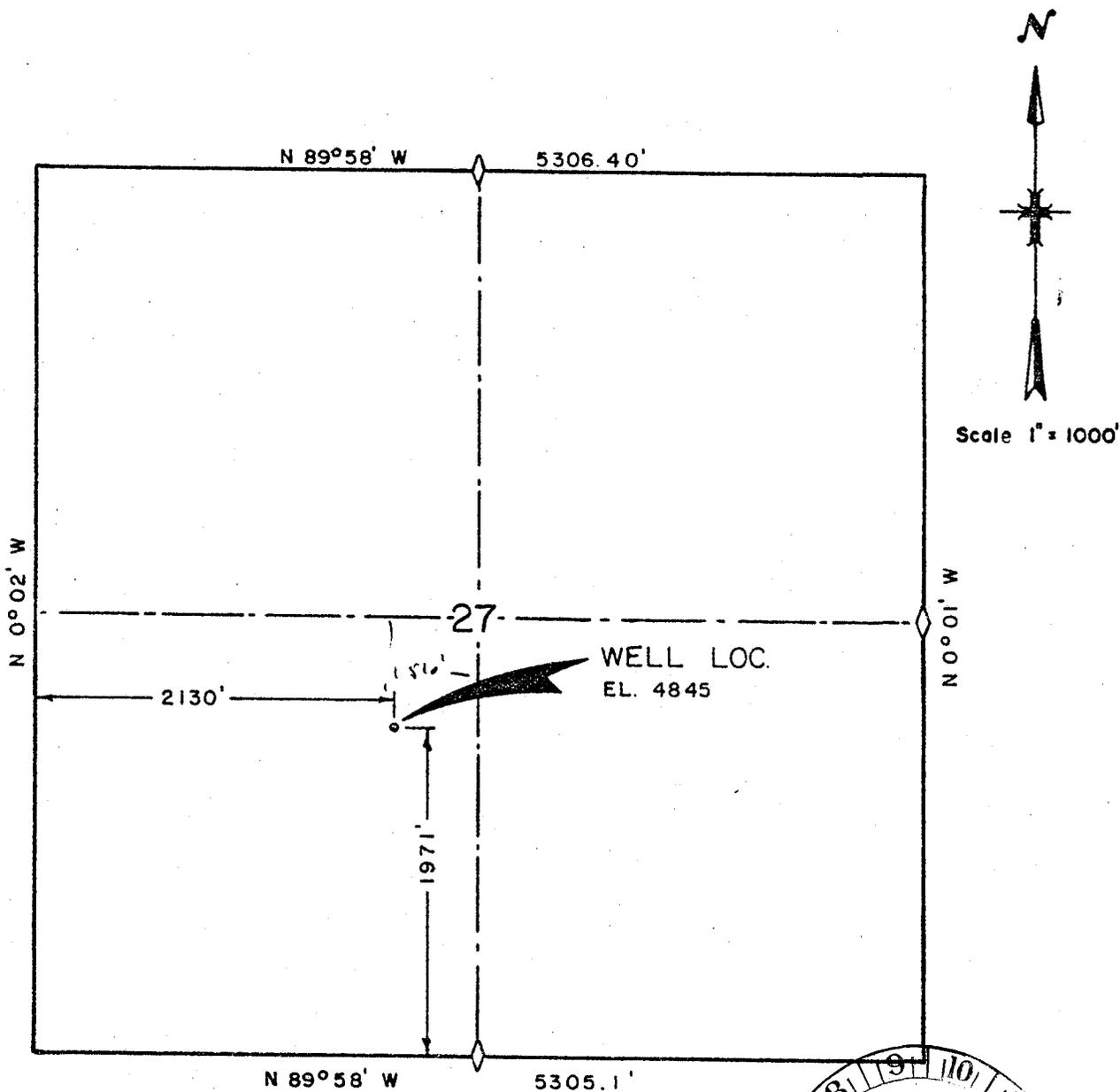


CONTOUR INTERVAL
 DOTTED LINES REPRESENT
 DATUM IS MEAN SEA LEVEL

Map #1

THIS MAP COMPLIES WITH NATIONAL MAP ACT
 FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER
 A FOLDER DESCRIBING TOPOGRAPHIC MAPS

WELL LOCATION
 1971.0 FT. N.S.L.-2130.0 FT. E.W.L
 SECTION 27, T20S R23E S.L.B.&M.



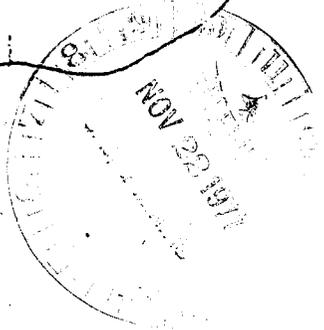
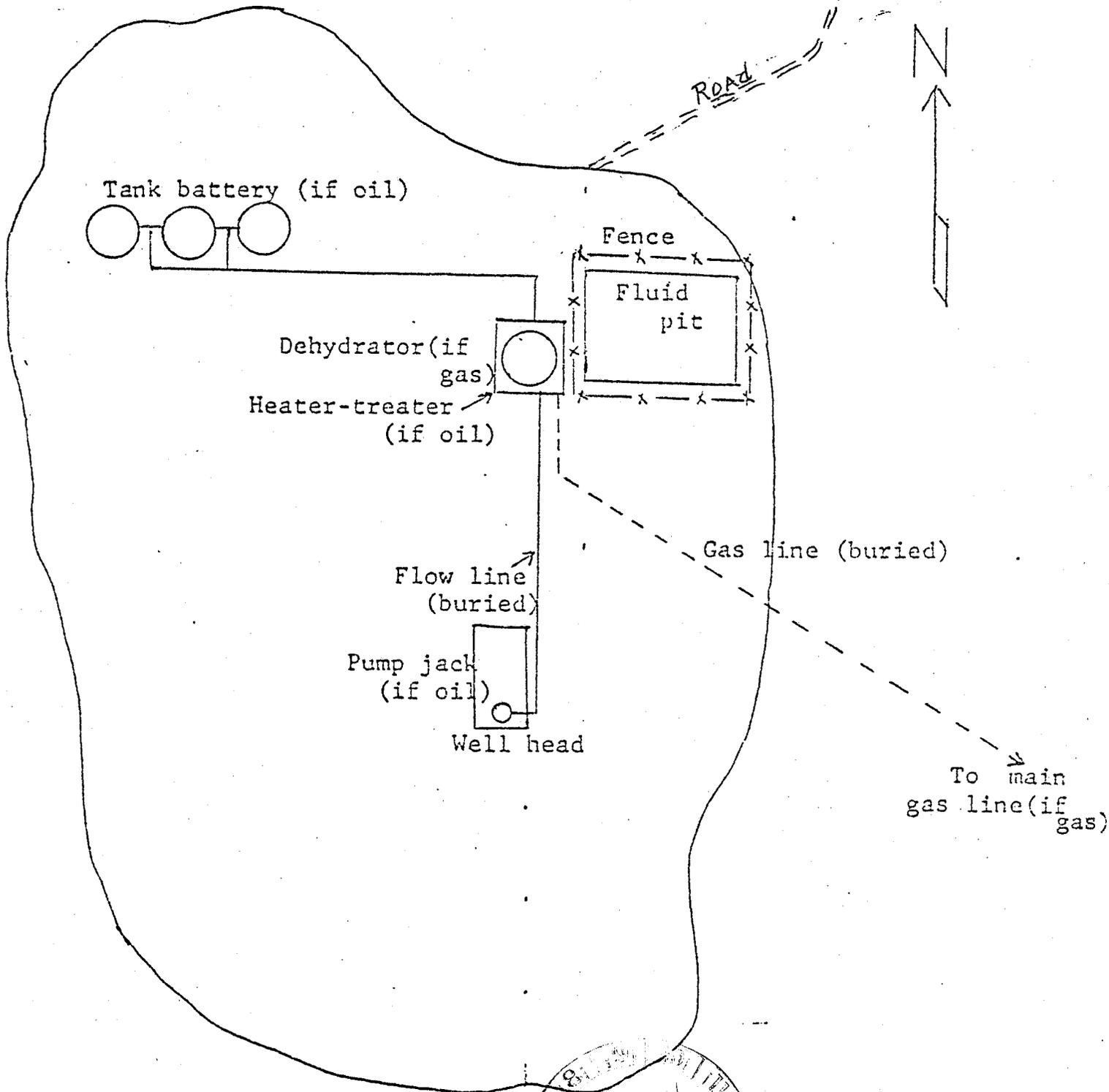
I, David L. Bear do hereby certify that this plat was plotted from notes of a field survey made under my direct responsibility, supervision and checking on Nov. 1, 19 77.

David L. Bear
 Registered Land Surveyor

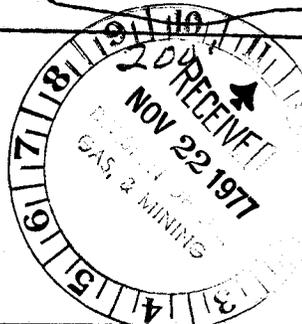
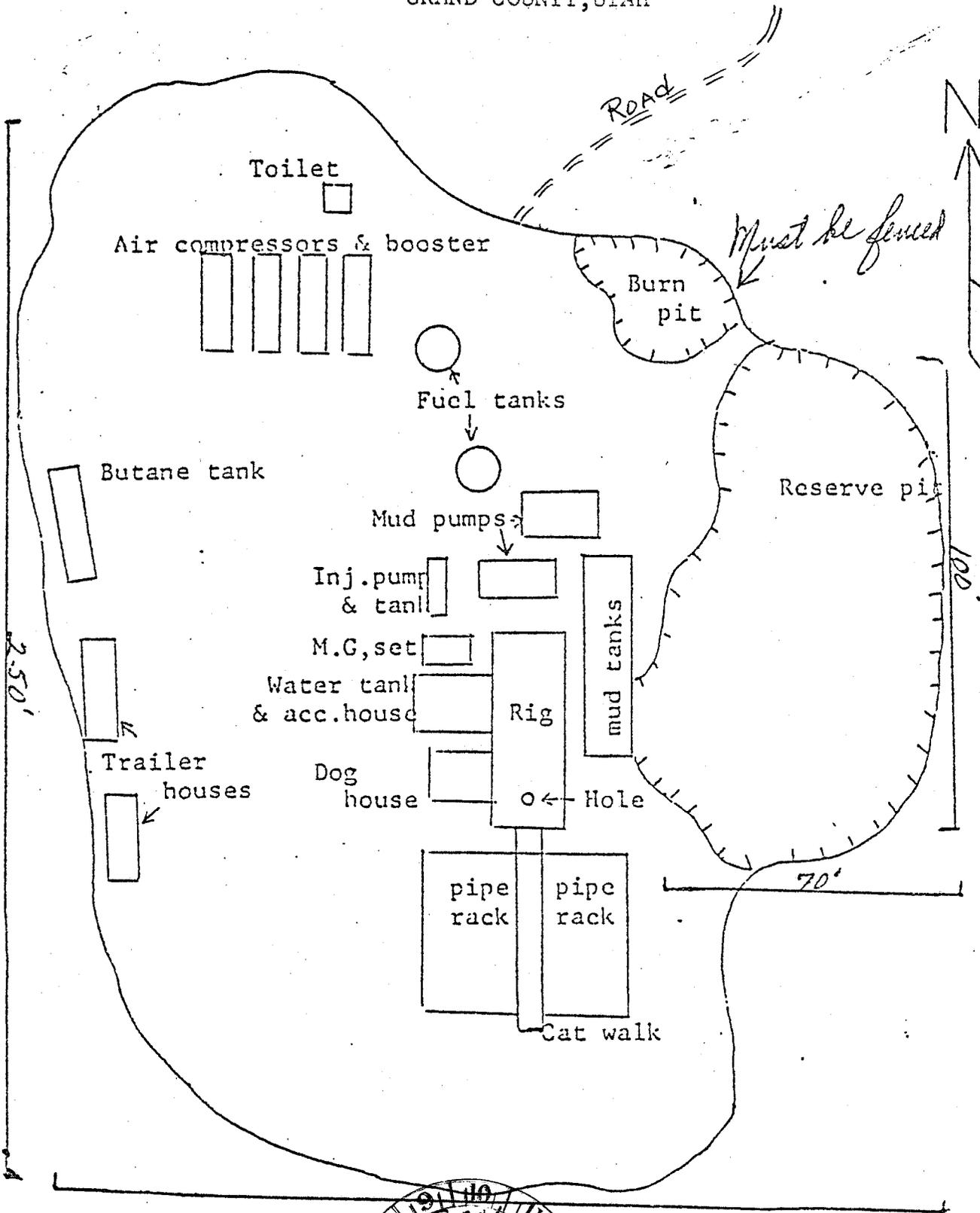
WESTERN ENGINEERS, INC. WELL LOCATION CISCO DRILLING AND DEVELOPMENT CO CISCO NO. 4 GRAND COUNTY, UTAH <hr/> SURVEYED <u>D.L.B.</u> DRAWN <u>R.W.G.</u> GRAND JUNCTION, COLO. 11/1/77
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PLAN FOR PRODUCTION EQUIPMENT

CISCO DRILLING & DEVELOPMENT CO.
CISCO #4 WELL
NE.SW.SEC.27-20S-23E
GRAND COUNTY, UTAH



LOCATION PLAN FOR
 CISCO DRILLING & DEVELOPMENT CO.
 CISCO #4 WELL
 NE.SW.SEC.27-20S-23E
 GRAND COUNTY, UTAH



Scale: 1 in. = approx. 35 ft.

WELL CONTROL EQUIPMENT FOR
CISCO DRILLING & DEVELOPMENT CO.

CISCO #4 WELL

NE.SW.SEC.27-20S-23E

GRAND COUNTY, UTAH

The following control equipment is planned for the above designated well: (See attached diagram).

1. Surface Casing:

- A. Hole size for surface casing is 9 3/4"
- B. Setting depth for surface casing is approx. 150 ft.
- C. Casing specs. are: 7 IN. D.D., J-55, 20.00#, 8 rd. thread, new or used.
- D. Anticipated pressure at setting depth is approx. 20 lbs.
- E. Casing will be run using three centralizers and a guide shoe, and will be cemented with 60 sks of cement with returns to the surface.
- F. Top of the casing will be at ground level.

2. Casing Head:

Flange size: 10", A.P.I. Pressure rating: 2000# W.P., Series 600; Cameron, OCT, or equivalent; new or used; equipped w/two 2" ports with nipples and 2", 2000# W.P. ball or plug valves. Casing head and valves set above ground level.

3. Intermediate Casing:

None.

4. Blowout Preventors:

A. Double rams; hydraulic; one set of blind rams; one set of rams for 3 1/2" or 4" drill pipe; 10" flange; 2000# or greater W.P.; Series 900; equipped with mechanical wheels and rod for back-up; set on top of casing head flange and securely bolted down, and pressure tested for leaks up to 2000#p.s.i.

5. B. Rotating Head:

Shaffer, Grants or equivalent; set on top of blowout preventor and bolted securely; complete with kelly drive, pressure lubricator; 3 1/2" or 4" rubber for 2000# W.P.; need not have hydril assembly on bottom.

C. Fill and Kill Lines:

The fill and kill lines (2" tubing or heavy duty line pipe) are to be connected thru the 2" valves on the casing head.

5. Auxillary Equipment:

A float valve is to be used in the bottom drill collar at all times. A string float will also be used in the drill pipe and kept within 200'-300' of the surface.

6. Anticipated Pressures:

The shut-in pressures of the Dakota, Cedar Mountain, and Morrison formations at depths of 3000' to 4000' in the area have been measured at about 1000# to 1500# maximum.

7. Drilling fluids:

Air-soap-water mist will be used to drill the subject well. In case of excessive caving problems, it may be

necessary to convert to mud.

8. Production Casing:

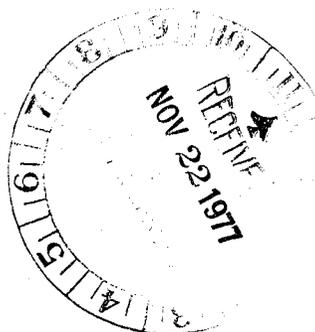
A. Hole size for production casing will be 6 1/4".

B. Approx. setting depth will be about 2500'

C. Casing Specs. are: 4 1/2" O.D.; J-55; 9.50#, 8-rd thread; new.

D. If good production is obtained, the casing will be run with a guide shoe at the bottom and about six centralizers and cemented conventionally with sufficient cement to cover 200 ft. above the top of the Dakota formation. The production zone will be perforated, 2 3/8" O.D. tubing will be run, and the well completed conventionally. In the event the production is small, it may be desirable to minimize the damage to the formation by keeping all mud and cement off the formation. In this case the procedure outlined below will be used.

E. Casing will be run with about six centralizers and a Lynes packer and DV tool set above the production zone. There will be sufficient casing to extend thru the production zone below the Lynes packer and a blind guide shoe on the bottom. The casing will be cemented above the packer with about 85 sks of cement (sufficient to cement thru the Dakota formation). The cement will be allowed to cure at least 48 hrs. The plug can then be drilled out and the casing perforated below the packer. Two inch tubing will be run and secured in the tubing head prior to perforating.



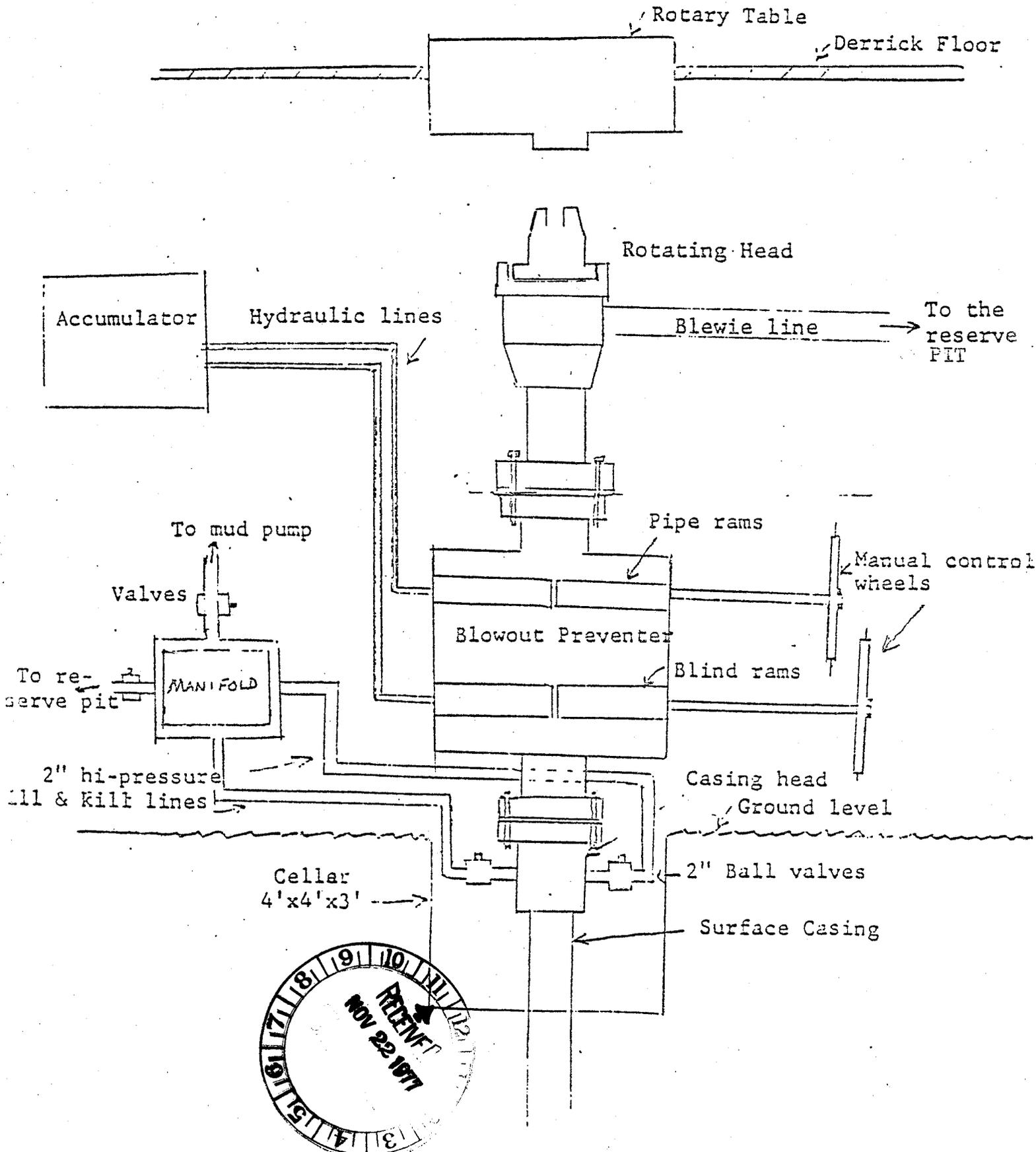
SCHEMATIC DIAGRAM OF
CONTROL EQUIPMENT FOR THE

CISCO DRILLING & DEVELOPMENT CO.

CISCO #4 WELL

NE SW, SEC. 27-20S-23E

GRAND COUNTY, UTAH



STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

** FILE NOTATIONS **

Date: November 25, 1977

Operator: Cisco Drilling & Development Co.

Well No: Federal Cisco #4

Location: Sec. 27 T. 20 S R. 23 E County: Grand

File Prepared:
Card Indexed:

Entered on N.I.D.:
Completion Sheet:

API NUMBER: 43-019-30402

CHECKED BY:

Administrative Assistant [Signature]

Remarks: ~~53' from 2640~~
~~2588' from # Cisco 3~~

Petroleum Engineer [Signature]

Remarks:

Director [Signature]

Remarks:

*Hold on, off pattern
Part of program
is unacceptable;
but lease is Federal!
Checking w/ U.S.G.S.*

INCLUDE WITHIN APPROVAL LETTER:

Bond Required:

Survey Plat Required:

Order No. 102-5

Surface Casing Change
to _____

Rule C-3(c), Topographic exception/company owns or controls acreage
within a 660' radius of proposed site

O.K. Rule C-3

O.K. In _____ Unit

Other:

Note: ① Amt Surface esp - Should be
200' & 100SX.

*PP
Ward
[Signature]*

~~These will not normally
accept casing run through rotating head; then mudding up)~~
letter written/Approved

November 28, 1977

Cisco Drilling & Development Co.
Judge Building
Salt Lake City, Utah 84111

Re: Well No. Cisco Federal #4
Sec. 27, T. 20 S, R. 23 E,
Grand County, Utah
1971' FSL & 2130' FWL

Gentlemen:

Insofar as this office is concerned, approval to drill the above referred to well is hereby granted in accordance with the Order issued in Cause No. 102-5. However, please be advised that this office is requiring a minimum of 200 feet of casing be set with 100 sacks of cement in this area.

Should you determine that it will be necessary to plug and abandon this well, you are hereby requested to immediately notify the following:

PATRICK L. DRISCOLL - Chief Petroleum Engineer
HOME: 582-7247
OFFICE: 533-5771

Enclosed please find Form OGC-8-X, which is to be completed whether or not water sands (aquifers) are encountered during drilling.

Further, it is requested that this Division be notified within 24 hours after drilling operations commence, and that the drilling contractor and rig number be identified.

The API number assigned to this well is 43-019-30308.

Very truly yours,

DIVISION OF OIL, GAS, AND MINING

CLEON B. FEIGHT
Director

OPERATOR Cisco Drilling

LEASE # U-17245

WELL NO. Cisco #4

LOC. NE 1/4 SW SEC. 27

T. 20S R. 23E

COUNTY Grand STATE UT

FIELD Wildcat

USGS EVANS

BLM CASCADIA

REP: Quinley

DIRT

ENHANCES

NO IMPACT

MINOR IMPACT

MAJOR IMPACT

Construction	Pollution	Drilling Production	Transport Operations	Accidents	Others
Roads, bridges, airports	Burning, noise, junk disposal	Well drilling	Trucks	Spills and leaks	
Transmission lines, pipelines	Liquid effluent discharge	Fluid removal (Prod. wells, facilities)	Pipelines	Operational failure	
Dams & impoundments	Subsurface disposal	Secondary Recovery	Others		
Others (pump stations, compressor stations, etc.)	Others (toxic gases, noxious gas, etc.)	Noise or obstruction of scenic views			
		Mineral processing (ext. facilities)			
		Others			

Land Use	Construction	Pollution	Drilling Production	Transport Operations	Accidents	Others
Forestry						
Grazing	/	/	/	/	/	/
Wilderness						
Agriculture						
Residential-Commercial						
Mineral Extraction						
Recreation	/	/	/	/	/	/
Scenic Views	/	/	/	/	/	/
Parks, Reserves, Monuments						
Historical Sites	NONE KNOWN					
Unique Physical Features						
Flora & Fauna						
Birds	/	/	/	/	/	/
Land Animals	/	/	/	/	/	/
Fish						
Endangered Species	NONE KNOWN					
Trees, Grass, Etc.	/	/	/	/	/	/
Phy. Charact.						
Surface Water						
Underground Water	/		/			
Air Quality	/	/	/	/	/	/
Erosion	/	/	/	/	/	/
Other						
Effect On Local Economy	/				/	/
Safety & Health	/	/	/	/	/	/
Others	Location Moved 120' E to avoid natural drainage & cliffs					

LEASE U-17245

DATE Dec 2, 1977

WELL NO. Cisco #4

LOCATION: NE 1/4 SW 1/4, SEC. 27, T. 20S, R. 23E

FIELD Wildcat COUNTY ~~Grand~~ Grand STATE Ut

ENVIRONMENTAL IMPACT ANALYSIS - ATTACHMENT 2-B

I. PROPOSED ACTION

Cisco Drilling & Development
(COMPANY)

PROPOSES TO DRILL AN OIL AND

GAS TEST WELL WITH ROTARY TOOLS TO ABOUT 2600' FT: TD. 2) TO CONSTRUCT A

DRILL PAD 200 FT. X 250 FT. AND A RESERVE PIT 70 FT. X 100 FT.

3) TO CONSTRUCT 1/4 FT. WIDE X 200' MILES ACCESS ROAD AND UPGRADERoad ^{Existing} _{adequate}

FT. WIDE X MILES ACCESS ROAD FROM AN EXISTING AND IMPROVED ROAD. TO CONSTRUCT

GAS OIL PRODUCTION FACILITIES ON THE DISTURBED AREA FOR THE DRILL PAD

AND TRUCK TRANSPORT THE PRODUCTION THROUGH A PIPELINE TO A TIE-IN IN

SECTION _____, T. _____, R. _____

2. LOCATION AND NATURAL SETTING (EXISTING ENVIRONMENTAL SITUATION).

(1) TOPOGRAPHY: ROLLING HILLS DISSECTED TOPOGRAPHY DESERT

OR PLAINS STEEP CANYON SIDES NARROW CANYON FLOORS DEEP DRAINAGE

IN AREA SURFACE WATER Area is ^a point ^{on} table top ~~like~~ _{MEATS MESA}

Like area.

(2) VEGETATION: SAGEBRUSH PINION-JUNIPER PINE/FIR FARMLAND

(CULTIVATED) NATIVE GRASSES OTHER cacti

(3) WILDLIFE: DEER ANTELOPE ELK BEAR SMALL
 MAMMAL BIRDS ^{NONE KNOWN} ENDANGERED SPECIES OTHER _____

(4) LAND USE: RECREATION LIVESTOCK GRAZING AGRICULTURE
 MINING INDUSTRIAL RESIDENTIAL OIL & GAS OPERATIONS

REF: BLM UMBRELLA EAR
 USFS EAR
 OTHER ENVIRONMENTAL ANALYSIS

3. Effects on Environment by Proposed Action (potential impact)

1) EXHAUST EMISSIONS FROM THE DRILLING RIG POWER UNITS AND SUPPORT TRAFFIC ENGINES WOULD ADD MINOR POLLUTION TO THE ATMOSPHERE IN THE LOCAL VICINITY,

2) MINOR INDUCED AND ACCELERATED EROSION POTENTIAL DUE TO SURFACE DISTURBANCE AND SUPPORT TRAFFIC USE,

3) MINOR VISUAL IMPACTS FOR A SHORT TERM DUE TO OPERATIONAL EQUIPMENT AND SURFACE DISTURBANCE,

4) TEMPORARY DISTURBANCE OF WILDLIFE AND LIVESTOCK,

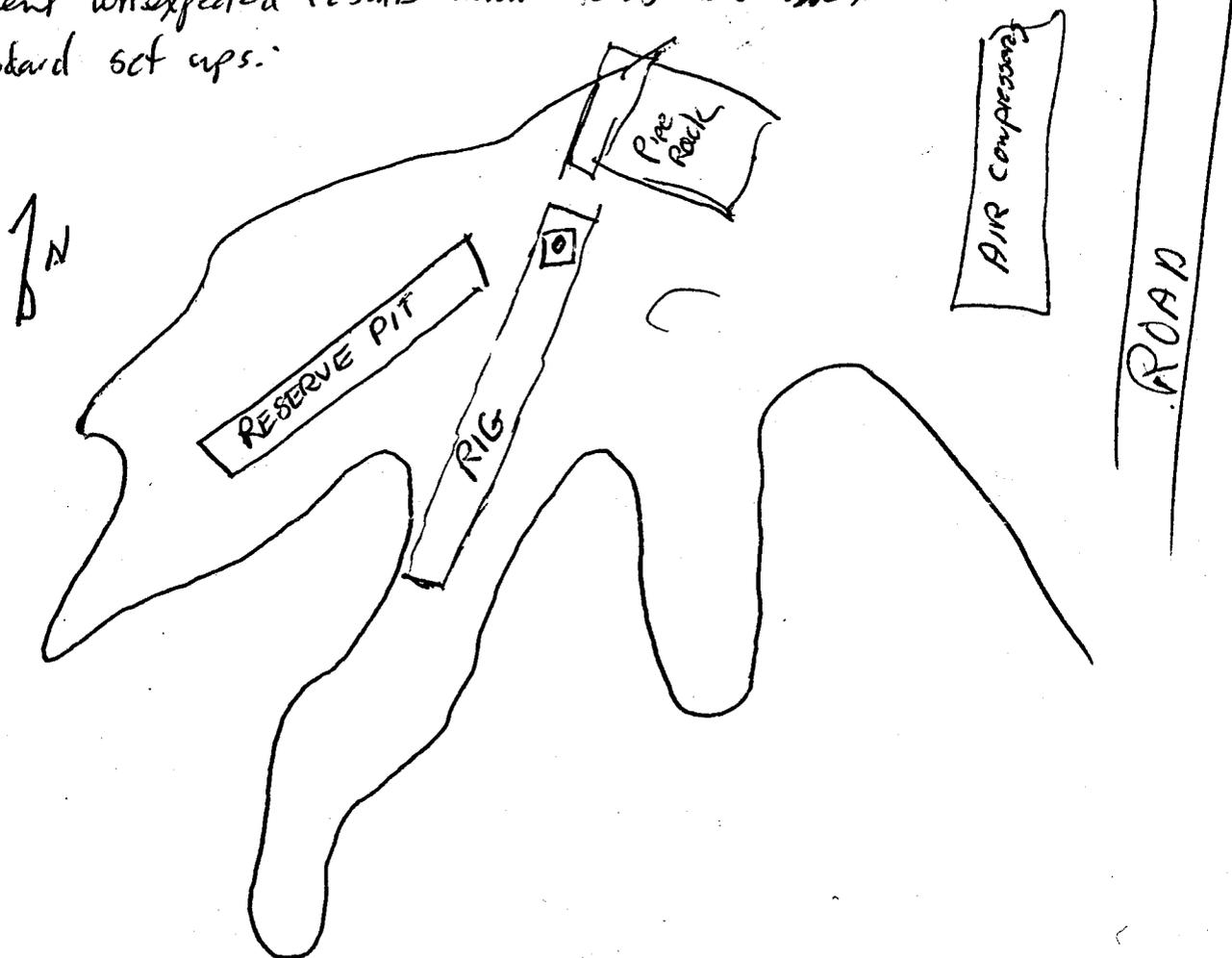
5) MINOR DISTRACTION FROM AESTHETICS FOR SHORT TERM,

6) major cuts & fills required to locate drill pad at proposed site.

All impacts are the same for ~~both~~ ^{all} sites discussed except
Land disturbance.

IF ^{CANNOT} get State approval for well being to close (less than 200') to $\frac{1}{4}/\frac{1}{4}$
Line, it is possible by stringing rig out in a odd

Shape, the original well site may be used. This may
present unexpected results when crews are ~~use~~ familiar with
standard set ups.



Also AREA of operations would be very cramped,
I don't recommend this alternative nor does operator -

SALT LAKE COUNTY
DEC 14 1977
RECEIVED
PLANNING DEPARTMENT

4. Alternatives to the Proposed Action

1) NOT APPROVING THE PROPOSED PERMIT -- THE OIL AND GAS LEASE GRANTS THE LESSEE EXCLUSIVE RIGHT TO DRILL FOR, MINE, EXTRACT, REMOVE AND DISPOSE OF ALL OIL AND GAS DEPOSITS.

2) DENY THE PROPOSED PERMIT AND SUGGEST AN ALTERNATE LOCATION TO MINIMIZE ENVIRONMENTAL IMPACTS. NO ALTERNATE LOCATION ON THIS LEASE WOULD JUSTIFY THIS ACTION.

3) LOCATION WAS MOVED 120' E TO AVOID LARGE SIDEHILL CUTS NATURAL DRAINAGE OTHER Cliff's, pad would extend over edge requires cuts & fills and cramped operating space. NEED state approval.
4) chemical toilet recommended for Human Waste

(OVER)

5. Adverse Environmental Effects Which Cannot Be Avoided

1) MINOR AIR POLLUTION DUE TO EXHAUST EMISSIONS FROM RIG ENGINES AND SUPPORT TRAFFIC ENGINES.

2) MINOR INDUCED AND ACCELERATED EROSION POTENTIAL DUE TO SURFACE DISTURBANCE AND SUPPORT TRAFFIC USE.

3) MINOR AND TEMPORARY DISTURBANCE OF WILDLIFE.

4) TEMPORARY DISTURBANCE OF LIVESTOCK.

5) MINOR AND SHORT-TERM VISUAL IMPACTS.

6)

6. DETERMINATION:

(THIS REQUESTED ACTION DOES (DOES NOT) CONSTITUTE A MAJOR FEDERAL ACTION SIGNIFICANTLY AFFECTING THE ENVIRONMENT IN THE SENSE OF NEPA, SECTION 102(2) (c).

DATE INSPECTED Dec 2, 1977

INSPECTOR Evms

W.P. Martin

U. S. GEOLOGICAL SURVEY
CONSERVATION DIVISION - OIL & GAS OPERATIONS
SALT LAKE CITY DISTRICT

DEC 14 1977

W. DON QUIGLEY

57 W. So. Temple ^{Oil AND MINERALS CONSULTANT}
~~809 PHILLIPS PETROLEUM BLDG. - SALT LAKE CITY, UTAH 84101~~

Dec. 10, 1977

Re: Re-location of
Well Site
Cisco #4



CIRCULATE TO:
DIRECTOR
PETROLEUM ENGINEER
MINE COORDINATOR
ADMINISTRATIVE ASSISTANT
ALL
RETURN TO _____
FOR FILE

Mr. Jack Feight
Oil & Gas Division
Dept. of Natural Resources
1588 West N. Temple
Salt Lake City, Utah 84116

Dear Jack:

During an inspection of the drill site for the Cisco #4 well in NE.SW.Sec.27,T20S,R23E,Grand County, Utah with U.S.G.S. and B.L.M. personnel, it was decided that there would be less disturbance and cuts and fills if the subject location was moved 120 feet to the east. This puts the well site 390' from the 1/4-1/4 line, but Cisco Drilling and Development Co. have all of Sec.27 under lease.

It is therefore requested that an exception to Rule 3 be granted on the basis of topographic reasons. The well site is on a narrow topographic peninsula which is quite limited in space. An amended permit to drill is enclosed.

Sincerely yours,
W. Don Quigley
W. Don Quigley

cc:
Oil & Gas Division
U.S. Geological Survey
Salt Lake City, Utah

District Office
Bureau of Land Management
Moab, Utah



SCOTT M. MATHESON
Governor

OIL, GAS, AND MINING BOARD

GORDON E. HARMSTON
Executive Director,
NATURAL RESOURCES

STATE OF UTAH

I. DANIEL STEWART
Chairman

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL, GAS, AND MINING

CHARLES R. HENDERSON
JOHN L. BELL
THADIS W. BOX
C. RAY JUVELIN

1588 West North Temple
Salt Lake City, Utah 84116
(801) 533-5771

CLEON B. FEIGHT
Director

December 13, 1977

Mr. Don Quigley
Cisco Drilling & Development Company
57 West South Temple
Salt Lake City, Utah 84101

Re: Cisco #4

Dear Mr. Quigley:

This office approves the new location of Cisco #4, being 1971' FSL & 2250' FWL, Section 27, T. 20S, R. 23E, provided that a survey plat indicating the new location be submitted to this office.

Also, it was noted on your amended application that the amount of surface casing was unchanged. Please refer to our original letter of approval in which you are to set a minimum of 200' of surface casing.

Very truly yours,

DIVISION OF OIL, GAS, AND MINING

Patrick L. Driscoll
PATRICK L. DRISCOLL
CHIEF PETROLEUM ENGINEER

PLD/ko
cc: U.S.G.S.

FROM: District Geologist, Salt Lake City, Utah

TO: District Engineer, Salt Lake City, Utah

SUBJECT: ADP supplemental stipulations

Operator: CISCO DRILLING Well: #4.
Develop. Co. GRAND Co., UTAH

Lease No. U-17245 NE 1/4 SW 1/4 sec. 27 T. 20S, R. 23E SLM

1. Operator picked tops are adequate? Yes X, No . If not: The following are estimated tops of important geologic markers:

Formation	Depth

Formation	Depth

2. Possible fresh water aquifers present below surface casing? Yes X, No . If yes: Surface casing program may require adjustment for protection of fresh water aquifers to a depth of approximately 500 feet in the MANCOS Formation.

3. Does operator note all prospectively valuable oil and gas horizons? Yes X, No . If not: The following additional horizons will be adequately logged for hydrocarbons:

Unit	Depth

Unit	Depth

4. Any other leasable minerals present? Yes , No X. If yes: 1. Logs (*) will be run through the ** at approximate depths of to feet to adequately locate and identify anticipated beds. 2. Logs (*) will be run through the ** at approximate depths of to feet to adequately locate and identify anticipated beds. 3. Logs (*) will be run through the ** at approximate depths of to feet to adequately locate and identify anticipated beds.

5. Any potential problems that should be brought to operators attention (e.g. abnormal temperature, pressure, incompetent beds, H₂S)? Yes , No X. If yes, what?

6. References and remarks:

* From 10 pt or others as necessary. ** Members, Formations.

Date: 1-26-78

Signed: lmp

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

2. NAME OF OPERATOR
 Cisco Drilling & Development Co.

3. ADDRESS OF OPERATOR
 Judge Bldg., Salt Lake City, Utah 84111

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)
 At surface NE. SW. Sec. 27, T20S, R23E, S.L.M. 2280
 At proposed prod. zone 1971' from S-line & 2130' from W-line

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
 Approx. 5 miles NW of Cisco, Utah

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 1971'

16. NO. OF ACRES IN LEASE 2000 ac.

17. NO. OF ACRES ASSIGNED TO THIS WELL 40 ac.

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 1/2 mile

19. PROPOSED DEPTH 2600'

20. ROTARY OR CABLE TOOLS Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.) 4845' grd.; 4855' K.B.

22. APPROX. DATE WORK WILL START* Dec. 20, 1977

5. LEASE DESIGNATION AND SERIAL NO.
 U-17245

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
 Federal

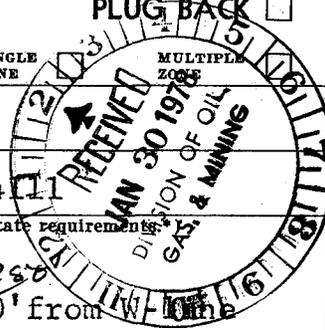
9. WELL NO.
 Cisco #4

10. FIELD AND POOL, OR WILDCAT
 Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
 NE. SW. Sec. 27-20S-23E
 S.L.M.

12. COUNTY OR PARISH
 Grand

13. STATE
 Utah



PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
9-3/4"	7"	20.00#	150' ft.	85 sks.
4 1/2" 6 1/2"	4 1/2"	9.50#	Thru pay-zone & cemented to 200' above/	

It is planned to drill a well at the above location to test the hydrocarbon productive possibilities of the Dakota, Cedar Mountain, & Morrison formations. The well will be drilled with rotary tools, using air for circulation. The well will be drilled 50 ft. into the Entrada formation, unless good production is found at a lesser depth. The surface casing will be set at about 150', and cemented with returns to the surface. A blowout preventer and rotating head will be installed on top of the casing head and tested for leaks. Fill & kill lines will be connected below the blind rams. Any gas encountered will be flared, and then tested for volume thru 2' lines after the pipe rams have been closed. A float valve will be used in the bottom of the drill collars at all times and a safety valve that can be stabbed in the drill pipe or collars will be kept handy. In case of production, 4 1/2" production casing will be run and cemented with sufficient cement to cover the Dakota formation and 200' above. See attached prognosis.

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 H. Don Gingley TITLE Cons. Geol. DATE Nov. 18, 1977

(This space for Federal or State office use)
 PERMIT NO. 43-019-30108 APPROVAL DATE _____

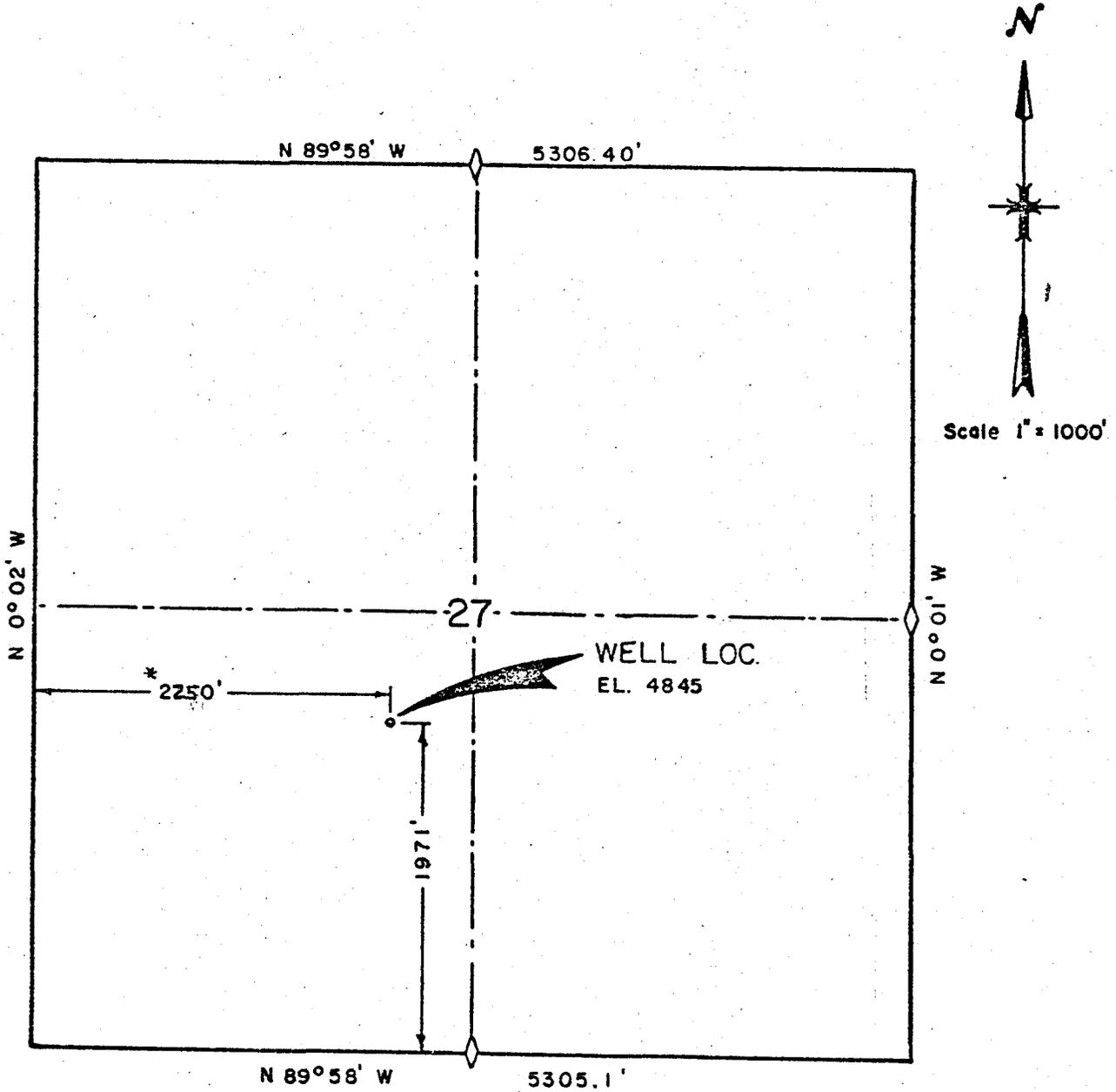
APPROVED BY (ORIG. SGD.) E. W. GUYNN TITLE DISTRICT ENGINEER DATE JAN 27 1978

State of Utah Department of Natural Resources
 Division of Oil, Gas, & Mining
 1600 West Temple
 Salt Lake City, Utah 84116

NOTICE OF APPROVAL

*See Instructions On Reverse Side

WELL LOCATION
 1971.0 FT. N.S.L. - 2250.0⁺ FT. E.W.L.
 SECTION 27, T20S R23E S.L.B&M.



** Location & plat
 changed to new site
 H. Don Gingley*

I, David L. Bear do hereby certify that this plat was plotted from notes of a field survey made under my direct responsibility, supervision and checking on Nov. 1, 1977.

David L. Bear
 Registered Land Surveyor

WESTERN ENGINEERS, INC.
WELL LOCATION
CISCO DRILLING AND DEVELOPMENT CO
CISCO NO. 4
GRAND COUNTY, UTAH
SURVEYED <u>D.L.B.</u> DRAWN <u>R.W.C.</u>
GRAND JUNCTION, COLO. 11/1/77

plans to file

PLUGGING PROGRAM

NAME OF COMPANY: Cisco Drilling & Dev.

WELL NAME: Cisco #4

Sec. 27 T. 20S R. 23E County Grand

Verbal approval given to plug the above referred to well in the following manner:

Total Depth: 2351'

Casing Program:

1 7/8 @ 128'
return to surface

Formation Tops:

Dakota - 1746'
Cedar Mt. - 1834'
Merrim - 1916'
Salt Wash - 2090'
Sumnerville - 2305'

Plugs Set as Follows:

200' plug - 2350' - 2150'
1900' - 1650'
150' - 75'

No shows, cracked water in Dakota.

(reported by Dan Fujley)

Date: 5/17/77

Signed: Jcheret

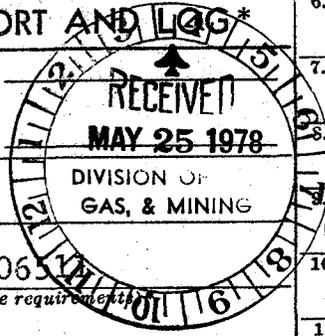
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE*

(See instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*



5. LEASE DESIGNATION AND SERIAL NO.

U-17245

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

NA

8. FARM OR LEASE NAME

Federal

9. WELL NO.

Cisco #4

10. FIELD AND POOL, OR WILDCAT

Wildcat

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA

NE.SW.Sec.27-20S23E
S.L.M.

12. COUNTY OR PARISH
Grand

13. STATE
Utah

1a. TYPE OF WELL: OIL WELL GAS WELL DRY Other

1b. TYPE OF COMPLETION: NEW WELL WORK OVER DEEP-EN PLUG BACK DIFF. RESRV. Other

2. NAME OF OPERATOR
Cisco Drilling & Development Co.

3. ADDRESS OF OPERATOR
419 Whalley Ave., New Haven, Conn. 06511

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)
At surface NE.SW.SEC.27,T20S,R23E,S.L.M.
At top prod. interval reported below 1971' from S-line & 2130' from W-line
At total depth

14. PERMIT NO. DATE ISSUED

15. DATE SPUDDED 16. DATE T.D. REACHED 17. DATE COMPL. (Ready to prod.) 18. ELEVATIONS (DF, RKB, RT, GR, ETC.)* 19. ELEV. CASINGHEAD

May 6 '78 May 16 '78 none ^{PA} May 17, 1978 4845' grd; 4855' K.B.

20. TOTAL DEPTH, MD & TVD 21. PLUG, BACK T.D., MD & TVD 22. IF MULTIPLE COMPL., HOW MANY* 23. INTERVALS DRILLED BY ROTARY TOOLS CABLE TOOLS

2351' none none → 0-2351'

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* 25. WAS DIRECTIONAL SURVEY MADE

none no

26. TYPE ELECTRIC AND OTHER LOGS RUN 27. WAS WELL CORED

Dual-Induction log; Gamma-Density-CNL log no

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
7 5/8"	24.00#	128'	9 3/4"	40 sks w/returns	none

29. LINER RECORD					30. TUBING RECORD		
SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
none					none		

31. PERFORATION RECORD (Interval, size and number)		32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.	
none		DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
		none	

33.* PRODUCTION
DATE FIRST PRODUCTION none PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) WELL STATUS (Producing or shut-in)

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
none							
FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)	
			none	none	xxxxxx		

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) TEST WITNESSED BY

35. LIST OF ATTACHMENTS
Drilling History & Geologic Report

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED W. Don Gugler TITLE Cons. Geol. DATE May 25, 1978

*(See Instructions and Spaces for Additional Data on Reverse Side)

DRILLING HISTORY
AND
GEOLOGIC REPORT
ON
CISCO #4 WELL
GRAND COUNTY, UTAH

By

W. Don Quigley
Consulting Geologist
Salt Lake City, Utah

May 25, 1978

DRILLING HISTORY
OF
CISCO #4 WELL

Operator: Cisco Drilling & Development Co.
419 Whalley Ave., New Haven, Conn. 06511

Contractor: Jacobs Drilling Co.
2467 Commerce St., Grand Junction, Colo. 81501

Location: NE. SW. Sec. 27, T 20S, R 23E, S.L.M. (1917' from
S-line and 2130' from W-line)

Elevations: 4845' grd; 4855' K.B.

Spudded-in: May 6, 1978

Finished Drlg: May 16, 1978

Total Depth: 2351'

Surface Casing: 3 jts of 7 5/8", 24#, H-40 casing, set at 128'
and cemented w/40 sks cement with returns to surface.

Production Zones: None

Plugged and Abandoned: May 17, 1978

DRILLING HISTORY

May 5: Rigged up. Drilled rat hole. Drilled mouse hole.

May 6: Drilled surface hole (9 7/8") to 128'. Ran 3 jts of
7 5/8", 24#, H-40 casing and cemented w/40 sks of regu-
lar cement. Had returns to surface. Plug down at 5:30
P.M. Waiting on cement and began nipling up to drill
ahead with air.

May 7: Drilled 128' to 619' (491'). Finished nipling up.
Blew hole dry and drilled out cement in casing. Began
drilling ahead at 10 A.M. with 6 1/2" bit and using air
for circulation. Drilling at avg. rate of 30 ft/hr.
Deviation of hole at 129' was 1/2°.

May 8: Drilled 619' to 1559' (940'). Drilling at rate of 50
ft/hr. Survey at 662' was 3/4°; at 1208' was 1 1/2°; at
1472' was 1°.

- May 9: Drilled 1559' to 1865' (306'). Est. top of Dakota formation at 1740'. Had slight show of gas in m.g. sandstone at 1740-1750'. Encountered water at 1770' and converted to mist drilling at 1780'. Encountered a lot more water at 1810' and had to convert to mud drilling. (The air pressure increased rapidly from 200# to 320#.) Made rd-trip at 1706' for button bit. Bit #1 (Hughes-J3) drilled 1578' (128' to 1706') in 36 hrs. Drilled at an avg. rate of about 44 ft/hr. Survey at 1706' was $1\frac{1}{4}^{\circ}$.
- May 10: Drilled 1865' to 1954' (89'). Drilling ahead in Cedar Mountain and Morrison sediments at rate of 2 ft/hr. Est. top of Cedar Mountain at 1830'. Made rd. trip at 1924' for new bit. Bit #2 (HTC-J33) made 218' (1706' to 1924') in 20 hrs. Drilled at avg. rate of 11 ft/hr. No shows in Morrison to date. Est. top of Morrison at 1910'.
- May 11: Drilled 1954' to 1996' (42'). Made rd. trip at 1956' for new bit. Bit #3 (HTC-J2) made 32 ft. (1924' to 1956') in 16 hrs. Drilled at avg. rate of 2 ft/hr. in Morrison (Brushy Basin) sediments. Made rd-trip at 1970' for new bit. Bit #4 (HTC-J4) made 14 ft. (1956' to 1970') in $7\frac{1}{2}$ hrs. Drilled at avg. rate of about 2 ft/hr.
- May 12: Drilled 1996' to 2085' (89'). Made rd-trip at 2005' for new bit. Bit #5 (HTC-J33-RR) made 35 ft. (1970' to 2005') in 11 hrs. Drilled at avg. rate of 3 ft/hr. Drilling ahead in Morrison section at 4 to 5 ft/hr.
- May 13: Drilled 2085' to 2170' (85'). Made rd-trip at 2109' for new bit. Bit #6 (Gruner-PG) made 104 ft. (2005' to 2109') in $26\frac{1}{2}$ hrs. Drilled at an avg. rate of 4 ft/hr. No shows in samples.
- May 14: Drilled 2170' to 2258' (88'). Made rd-trip at 2222' for new bit. Bit #7 (Gruner-F) made 113' (2109' to 2222') in 27 hrs. Drilled at an avg. rate of 4+ft/hr. Encountered a sand at 2210' to 2220' which had good fluorescence and cut plus black residual oil and stain.
- May 15: Drilled 2258' to 2346' (92'). Est. top of Curtis at 2230'. Drilling at rate of 3 ft/hr.
- May 16: Drilled 2346' to 2351' (5'). Finished drilling at 2:40 A.M. Bit gave out, so have decided to quit at this

depth which is estimated to be right at the top of the Entrada. Circulated for 2 hours, mixed mud and came out of hole to log well. Bit #8 (Gruner-PG) made 129' (2222' to 2351') in 31½ hrs. Drilled at an avg. rate of 4 ft/hr. Schlumberger arrived at 0700 hrs. and began logging well. Ran Dual-Induction log, and Gamma-Density-CNL log. Finished logging at 12:30 P.M. Two small sand zones: one at 2210' to 2220', and the other at 2270' to 2280', appeared to have some potential on the logs; so called Halliburton to run a drill-stem-test of these zones. Waited on tester til 21:45 hrs. Picked up test tool.

May 17: Went in hole and ran DST #1 as follows:

Interval: 2200' to 2350'

Init. Open: 15 min.

Init. Shut-in: 90 min.

Final Flow: 2 hrs.

Final Shut-in: 2½ hrs.

Blow: Weak initially increasing slowly to bottom of bucket in 15 min. Final blow was weak initially - gradually increasing to fair (12" in water) for remainder of test.

Rec: 650' of mud cut water. Res. = .82 at 55°. (Est. 9000 ppm. chlorides)

Sample Chamber: 25# pressure - no gas - 1850 cc water (9000 ppm chlorides).

Pressures:

	U.	L.	U.	L.
I.H.P. =	1012#	(1213#)	F.H.P. =	1145# (1213#)
I.F.P. =	13#	(66#)	F.F.P. =	267# (359#)
I.S.I.P. =	666#	(847#)	F.S.I.P. =	773# (847#)
B.H.T. =	100°			

Finished DST at 12:00 (noon) and loaded-out tool. Laid down collars and went in hole with drill pipe. Placed cement plugs as follows:

Plug No. 1: 2350' to 2150' (40 sks cement) at bottom of hole and across Morrison sands.

Plug No. 2: 1950' to 1650' (40 sks cement) across Dakota sands.

Plug No. 3: 140' to 80' (15 sks cement) across bottom of surface casing.

Well marker with 10 sks cement placed in top of surface casing. Started to rig down.

Note: Clean up work, restoring location, and filling pits, mouse hole and rat hole will be done as soon as rig is moved from location.

GEOLOGIC REPORT
ON
CISCO #4 WELL

Introduction

The Cisco #4 well was located $\frac{1}{2}$ mile south of the Cisco #3 well and was designed to intersect similar gas sands as well as hopefully intersecting more sands in the Cedar Mountain and Morrison formations. The drilling of the well revealed that the Dakota sands were better developed, but non-productive, in the second well; but there were no more, and possibly less significant sands in the Cedar Mountain and Morrison. There were three different sand lenses in the Dakota formation, but the lower two had copious quantities of brackish water and the upper sand had some water but did not stop the air drilling. The large flow of water from the lower two sands prevented further drilling with air, and necessitated conversion to mud drilling. This conversion to lime base mud decreased the drilling rate drastically and most of the rest of the hole, from 1820' to 2351', was drilled at a rate of 2 to 4 ft/hr.

The Cisco #4 well was similarly located with respect to the west flank of the Cisco Springs Anticline as was the Cisco #3 well, with the exception of being on the south side (downthrown side) of the northeast trending fault across Section 27.

Because of the water found in the sands in the Dakota formation, and the complete lack of significant and favorable sands in the Cedar Mountain and Morrison formations, the Cisco #4 well was found to be non-productive and was plugged and abandoned. After logging, two sands at the bottom of the Morrison were thought to have minor potential and were therefore drill-stem-tested. The test recovered only brackish water (650 ft. in 2 hrs.) and the well was abandoned accordingly.

Drilling History

As noted above, due to the need to convert to mud drilling, the time required to drill the Cisco #4 well was excessive. It took ten days to drill the well which was twice as long as it should have been. The large flow of water encountered in the Dakota formation was unfortunate and caused much additional time to be spent on the hole. The conversion to a lime base mud rather than to fresh water gel and diesel, also caused very slow penetration rates. This type of mud causes a gumming condition in the shales and prevents good circulation around the bit, as well as preventing free flow of the cuttings over the shaker. This mud does minimize caving of the Mancos shales which is an advantage.

The well was drilled to a depth (2351') which was about 15' above the top of the Entrada formation and logged at this point. This was done so that any zones that needed to be tested near the base of the Morrison could be done without communicating with the normal flow of water found in the top of the Entrada formation.

The logs, a Dual-Induction log and a Gamma-Density-CNL log, were run and two thin sands at the base of the Morrison were drill-stem-tested. The results were negative so the well was plugged and abandoned according to government specifications. Three cement plugs were placed in the well, as noted under the 'Drilling History', on May 17, 1978 and the drilling rig was disassembled and removed.

General Geology

Much of the geology associated with the Cisco #4 well is similar to that of the Cisco #3 well; and therefore will not be repeated here. About the only difference is that the Cisco #4 well was on the south side (downthrown side) of the northeast trending fault across Section 27. The structural difference in the two wells was about 100 ft. This is about 80 feet less than it would have been without the fault. Thus the fault has about 80 feet of displacement.

The Cisco #4 well may have been fairly close to the fault zone, since the sediments were hard and the sands were quartzitic, plus the water was less saline than normal, indicating that some flooding from the fault zone may have taken place.

As noted above, the sands in the Dakota in the subject well, three separate sands (each 15 to 20 feet thick), were much better developed than in the Cisco #3 well. However, they all contained water

and no natural gas. This was probably due to the position of the well near the fault zone. This part of the well was drilled with air and the hole filled with water rapidly when the lower sands were penetrated. Calculations based on data from the electric logs also indicated that the upper sand was 100% saturated with water.

The Cedar Mountain formation in the subject well had no significant sands. The Buckhorn sand, 1898' to 1915', (basal sand member) was about 17 ft. thick and was devoid of hydrocarbon shows. Electric log data suggested a porosity of about 12% and a water saturation of 100%.

The Morrison section in the well was normal in thickness, 404 feet, but was lacking in any good significant sands. One sand at 2210' to 2220' in the Salt Wash section had some hydrocarbon shows (good stain, fluorescence, and residual black oil) in the cuttings; but the test of this sand yielded water. Obviously, the hydrocarbons were present at one time but have since been flushed out - probably by the fresh water from the fault zone. A lower sand at 2268' to 2278' likewise yielded water when tested.

The formations with their tops, thicknesses, and datum points which were encountered in the Cisco #4 well, as determined from the electric logs are as follows:

<u>Formation</u>	<u>Depth to Top</u>	<u>Thickness</u>	<u>Datum</u>
Mancos	Surface	1746'	4855' K.B.
Dakota	1746'	88'	3109'
Cedar Mountain	1834'	82'	3021'
Morrison (Brushy Basin)	1916'	174'	2939'
(Salt Wash)	2090'	230'	2765'
Summerville	2320'	—	2535'
Total Depth	2351'		

As noted above, comparison of the datum points of the two wells indicate that the subject well is about 80 to 100 feet higher than the Cisco #3 well. Without the intervening fault the difference should have been about 180'.

Conclusion

The results of the Cisco #4 well were disappointing and cast some doubt as to the favorability of the area for good natural gas production. However, it has been found in the past that local areas of poor sand development exist in the region, and a good

well with good sand development can be offset by one with few or no sands and no production. It is believed that the poor results of the subject well may have been due in part to its proximity to a northeast trending fault and the potential hydrocarbon sand reservoirs were flooded with water. Also there was some induration in the sediments, suggesting that the position of the well may have been close to a fault.

There is quite definitely an area of poor sands in the Cedar Mountain and Morrison formations in the vicinity of the subject well. This area probably encompasses most of Sections 27, 28, 33, and 34, plus additional lands to the west and south. The Dakota sands, however, are present and offer prospects for natural gas production. The Cisco #4 well was simply too close to the fault and the sediments were dipping downward into the fault zone and thus were flushed with water. The sands in the Dakota in the Cisco #4 were better developed and more porous than in the Cisco #3 well and would have had natural gas production if the well had been farther removed from the fault.

It is recommended that future wells in the area be located further to the east and north of the Cisco #4 well if possible, and must be at least 600 feet from any fault zone. The Dakota is still a good prospect on the S $\frac{1}{2}$ of Section 27. Based on the data developed from the two Cisco wells, it is quite probable that the former location in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 27 would have been a good site for potential Dakota production. This well should be drilled sometime in the future; but only to commercial production or to the first water, whichever is at the lesser depth. This site would not be very favorable for good Cedar Mt. and Morrison sands with production.

Another location which could be favorable in Section 27 would be the SE $\frac{1}{4}$ NE $\frac{1}{4}$. This location should be removed far enough from the fault to be clear of the water flooding. It should also be good for Dakota sands and possibly far enough east for Cedar Mt. and Morrison sands.

W. Don Quigley
W. Don Quigley
Consulting Geologist
AAPG #1296
APGS #3038

1000 *Relg. Time*
min/ft

Grised Relg. & Dev. Co.

1200' to 2000'

Grised #4 Well
N.E. 5th Sec 27-20S-23E
4855' K.B.

1100

1200

1300

1400

1500

1600

1700

KR
1740

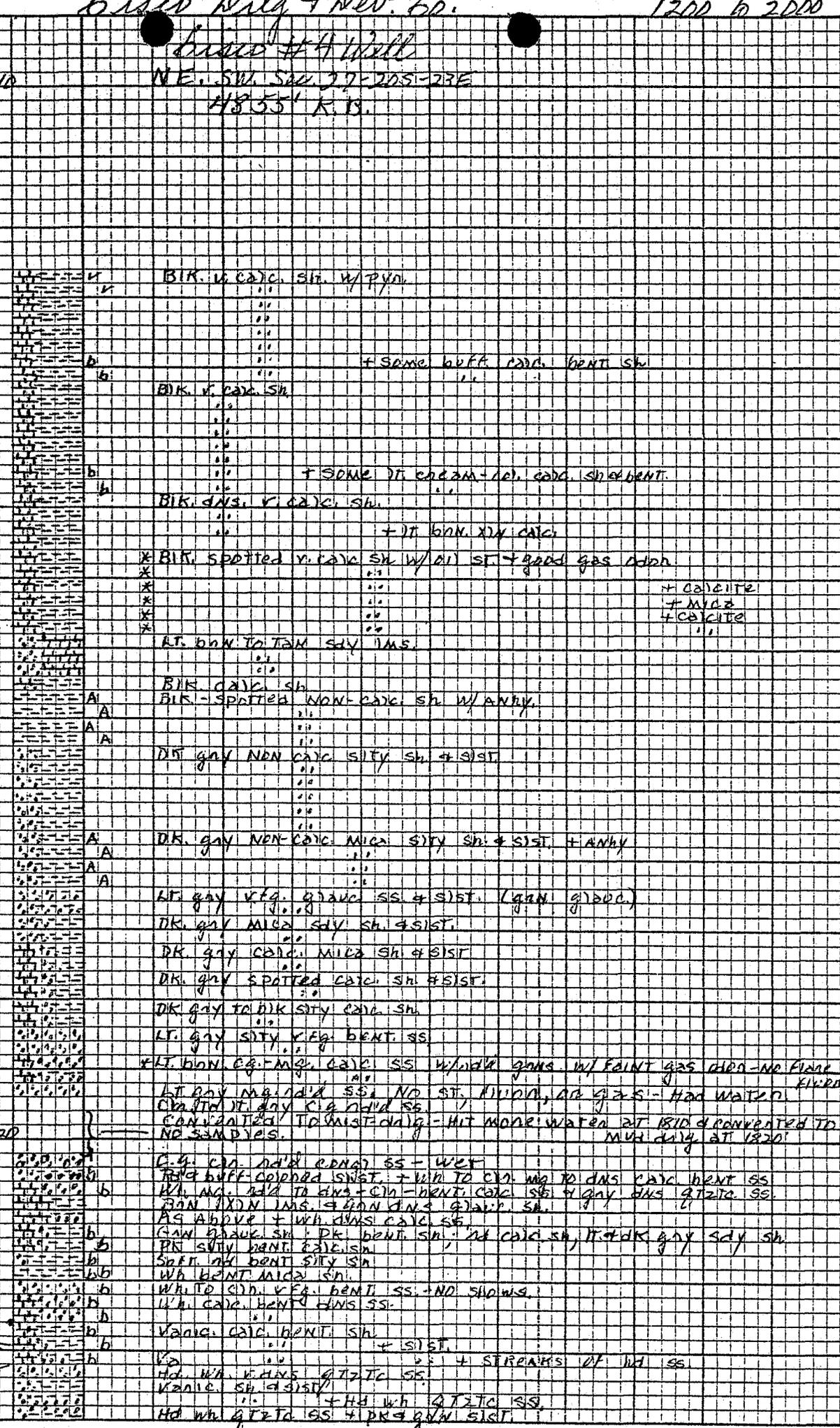
1800

KCR
1830 M

1900

Jan
1910

2000



KEUFFEL & ESSER CO.
MADE IN U.S.A.
5 X 5 TO 1/2 INCH
7 X 10 INCHES

Cisid #4 Well

2000 10 20 30

Jmsv

2100
NEW BIT

2200
NEW BIT

Jsw

2300

2400

2500

11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0	20.5	21.0	21.5	22.0	22.5	23.0	23.5	24.0	24.5	25.0	25.5	26.0	26.5	27.0	27.5	28.0	28.5	29.0	29.5	30.0	30.5	31.0	31.5	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0	36.5	37.0	37.5	38.0	38.5	39.0	39.5	40.0	40.5	41.0	41.5	42.0	42.5	43.0	43.5	44.0	44.5	45.0	45.5	46.0	46.5	47.0	47.5	48.0	48.5	49.0	49.5	50.0	50.5	51.0	51.5	52.0	52.5	53.0	53.5	54.0	54.5	55.0	55.5	56.0	56.5	57.0	57.5	58.0	58.5	59.0	59.5	60.0	60.5	61.0	61.5	62.0	62.5	63.0	63.5	64.0	64.5	65.0	65.5	66.0	66.5	67.0	67.5	68.0	68.5	69.0	69.5	70.0	70.5	71.0	71.5	72.0	72.5	73.0	73.5	74.0	74.5	75.0	75.5	76.0	76.5	77.0	77.5	78.0	78.5	79.0	79.5	80.0	80.5	81.0	81.5	82.0	82.5	83.0	83.5	84.0	84.5	85.0	85.5	86.0	86.5	87.0	87.5	88.0	88.5	89.0	89.5	90.0	90.5	91.0	91.5	92.0	92.5	93.0	93.5	94.0	94.5	95.0	95.5	96.0	96.5	97.0	97.5	98.0	98.5	99.0	99.5	100.0
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WH. TD. OF. SAND. HD. GZTS. SS. G. SAND. SH.
 Rd. Silt. clay. vfg. (TST. AD. SS. & WH. SAND. SS.
 Rd. Silt. & vfg. & vfg. sh.
 Rd. vfg. silt. ss. & silt. + sand. sh.
 (SAND & gray. vfg. hd. ss. & vfg. sh.
 Rd. silt. & vfg. ad. ang. ss.
 + some wh. mg. bent. ss.
 WH. mg. ang. anhy. ss. w/ orange spots.
 Lt. md. vfg. dnt. ss. & silt.
 WH. fg. calc. ss. + lt. blue clay. (MANT)
 WH. silt. bent. sh. & wh. mica. bent. silt. ss.
 (WH. TD. SAND. mica. bent. sh. + lt. gray. ang. ms.
 gray. hd. silt. ss.
 Rd. tan. calc. vfg. ss. & silt.
 Gray. mica. bent. calc. sh. & tan. calc. silt.
 Lt. gray. & lt. gray. vfg. + GZTS. ss.
 *A. Mg. vfg. bent. calc. ss. w/ oil. silt. & bent. ss. - good. Fluor. out.
 Lt. gray. silt. & sh.
 + lt. tan. ms. & wh. mica. bent. sh.
 TAN. ms. + wh. silt. & wh. mica. bent. sh.
 AS. silt. + wh. bent. fg. ang. ss.
 vfg. calc. bent. sh.
 WH. mg. calc. silt. + wh. ss.
 Rd. vfg. calc. silt. & sh.
 vfg. calc. sh.
 Rd. v. silt. calc. sh.
 Dk. gray. silt. sh. + lt. gray. tan. ms. gray. vfg. & vfg. wh. ss.
 Rd. Nph. gray. calc. sh.
 + some. cl. Ag. mg. ang. ss.
 RUFF. TD. orange. calc. sh. & ms. + wh. GZTS. ss. + wh. fg. pyro.

Division of Oil, Gas and Mining
PHONE CONVERSATION DOCUMENTATION FORM

Route original/copy to:

Well File Disc Orig. + Dev.
Disc Fed. #4
(Location) Sec 27 Twp 20, Rng 23e
(API No.) 43-019-30408

Suspense
(Return Date) _____
(To - Initials) _____

Other

1. Date of Phone Call: 5-24-90 Time: 2:00 PM

2. DOGM Employee (name) Chris Kierst (Initiated Call
Talked to:
Name Fred Oneyear (Initiated Call - Phone No. () 259-6111
of (Company/Organization) BLM

3. Topic of Conversation: Improper seating of P+A mkr. on well

4. Highlights of Conversation: Related results of a June 89 inspection by Frank Mathews of this P+Ats Fred Oneyear. He said he would check the location next week to see what the circumstances are. Will call back around 2 wks from now to see what Fred found out.

FLUID SAMPLE DATA				Date	Ticket Number			
Sampler Pressure <u>25</u> P.S.I.G. at Surface				5-17-78	336897			
Recovery: Cu. Ft. Gas _____				Kind of Job	Halliburton District			
cc. Oil _____				OPEN HOLE TEST	VERNAL			
cc. Water <u>1850</u>				Tester	R. RIPPLE Witness DON QUIGGLY			
cc. Mud _____				Drilling Contractor	JACOBS DRILLING COMPANY PW			
Tot. Liquid cc. <u>1850</u>				EQUIPMENT & HOLE DATA				
Gravity _____ ° API @ _____ °F.				Formation Tested	Morrison			
Gas/Oil Ratio _____ cu. ft./bbl.				Elevation	<u>4855'</u> K.B. Ft.			
RESISTIVITY _____ CHLORIDE CONTENT _____				Net Productive Interval	Ft.			
Recovery Water <u>.82</u> @ <u>55</u> °F. <u>9000</u> ppm				All Depths Measured From	Kelly Bushing			
Recovery Mud _____ @ _____ °F. _____ ppm				Total Depth	<u>2351'</u> Ft.			
Recovery Mud Filtrate _____ @ _____ °F. _____ ppm				Main Hole/Casing Size	<u>6 1/4"</u>			
Mud Pit Sample <u>.85</u> @ <u>70</u> °F. <u>7000</u> ppm				Drill Collar Length	<u>302'</u> I.D. <u>2 1/16"</u>			
Mud Pit Sample Filtrate <u>.60</u> @ <u>100</u> °F. <u>7500</u> ppm				Drill Pipe Length	<u>1864'</u> I.D. <u>2.764"</u>			
Mud Weight <u>9.5</u> vis <u>35</u> sec				Packer Depth(s)	<u>2194' - 2200'</u> Ft.			
				Depth Tester Valve	<u>2174'</u> Ft.			
Cushion				TYPE	AMOUNT	Depth Back Pres. Valve	Surface Choke	Bottom Choke
							<u>1" - 1/8"</u>	<u>3/4"</u>
Recovered <u>650</u> Feet of <u>water cut mud.</u>				Field Area				MILD CAT
Recovered _____ Feet of _____				Med. From Tester Valve				
Recovered _____ Feet of _____								
Recovered _____ Feet of _____								
Recovered _____ Feet of _____								
Recovered _____ Feet of _____								
Remarks				SEE PRODUCTION TEST DATA SHEET.....				
				County				
				State				
				GRAND				
				UTAH				
				CISCO DRILLING & DEVELOPMENT				
				Lease Owner/Company Name				
				CISCO				
				Lease Name				
				27 NE-SW-20 S - 23 E				
				Well No. 4				
				Test No. 1				
				Tested Interval 2200' - 2351'				
				Legal Location Sec. - Twp. - Rng.				

TEMPERATURE	Gauge No. 490		Gauge No. 198		Gauge No.		TIME	
	Depth:	2179 Ft.	Depth:	2348 Ft.	Depth:	Ft.	Tool	A.M.
Est. °F.	12 Hour Clock		12 Hour Clock		Hour Clock		Opened	0220 P.M.
Actual 100 °F.	Blanked Off No		Blanked Off Yes		Blanked Off		Opened	A.M.
	Pressures		Pressures		Pressures		Bypass	0835 P.M.
	Field	Office	Field	Office	Field	Office	Reported	Computed
Initial Hydrostatic	1012	1140	1213	1228			Minutes	Minutes
First Period Flow	Initial	13	13	67	96			
	Final	107	91	160	172		15	15
	Closed in	666	793	846	875		90	90
Second Period Flow	Initial	107	100	160	186			
	Final	267	293	359	370		120	120
	Closed in	773	779	847	856		150	150
Third Period Flow	Initial							
	Final							
Final Hydrostatic	1145	1134	1213	1215				

Gauge No. 490			Depth 2179'			Clock No. 7127			12 hour		Ticket No. 336897			
First Flow Period		First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.
0	.000	13		91	.000	100	.000		293					
1	.0208	32		676	.1385	169	.0698		688					
2	.0416	49		727	.2770	201	.1396		721					
3	.0624	64		749	.4155	227	.2094		737					
4	.0832	79		762	.5540	251	.2792		747					
5	.1040	91		769	.6925	272	.3490		754					
6				774	.8310	293	.4188		759					
7				778			.4886		763					
8				781			.5584		767					
9				783			.6282		769					
10				785			.6980		773					
11				786			.7678		774					
12				789			.8376		775					
13				790			.9074		777					
14				791			.9772		778					
15				793			1.0470		779					

Gauge No. 198			Depth 2348'			Clock No. 2797			12 hour		
Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.
0	.000	96		172	.000	186	.000		370		
1	.0208	116		755	.1362	249	.0679		764		
2	.0416	132		810	.2723	279	.1359		798		
3	.0624	146		832	.4085	306	.2038		815		
4	.0832	160		844	.5447	328	.2717		824		
5	.1040	172		852	.6809	350	.3397		832		
6				857	.8170	370	.4076		837		
7				861			.4755		840		
8				864			.5434		844		
9				866			.6114		846		
10				867			.6793		849		
11				870			.7472		852		
12				871			.8152		852		
13				873			.8831		854		
14				874			.9510		856		
15				875			1.0190		856		

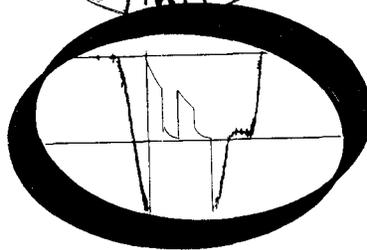
Reading Interval	3	6	20	10	Minutes
REMARKS:					

	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing	4 3/4"	2 1/2"	1'	
Reversing Sub				
Water Cushion Valve				
Drill Pipe	3 1/2"	2.764"	1864'	
Drill Collars	4 3/4"	2 1/16"	302'	
Handling Sub & Choke Assembly				
Dual CIP Valve	5"	.87"	6.90'	2169'
Dual CIP Sampler	5"	.75"	5'	2174'
Hydro-Spring Tester				
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	4'	2179'
Hydraulic Jar	5"	1.75"	5'	
VR Safety Joint	5"	1"	3'	
Pressure Equalizing Crossover				
Packer Assembly	5 1/2"	1.53"	5.75'	2194'
Distributor				
Packer Assembly	5 1/2"	1.53"	5.75'	2200'
Flush Joint Anchor	4 5/8"	2.37"	22'	
Pressure Equalizing Tube X-Over	5 1/4"	2 5/8"	.70'	
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars	4 3/4"		121'	
Flush Joint Anchor X-Over	5 3/4"	2 3/8"	.80'	
Blanked-Off B.T. Running Case	5"	2.44"	4'	2348'
Total Depth				2351'

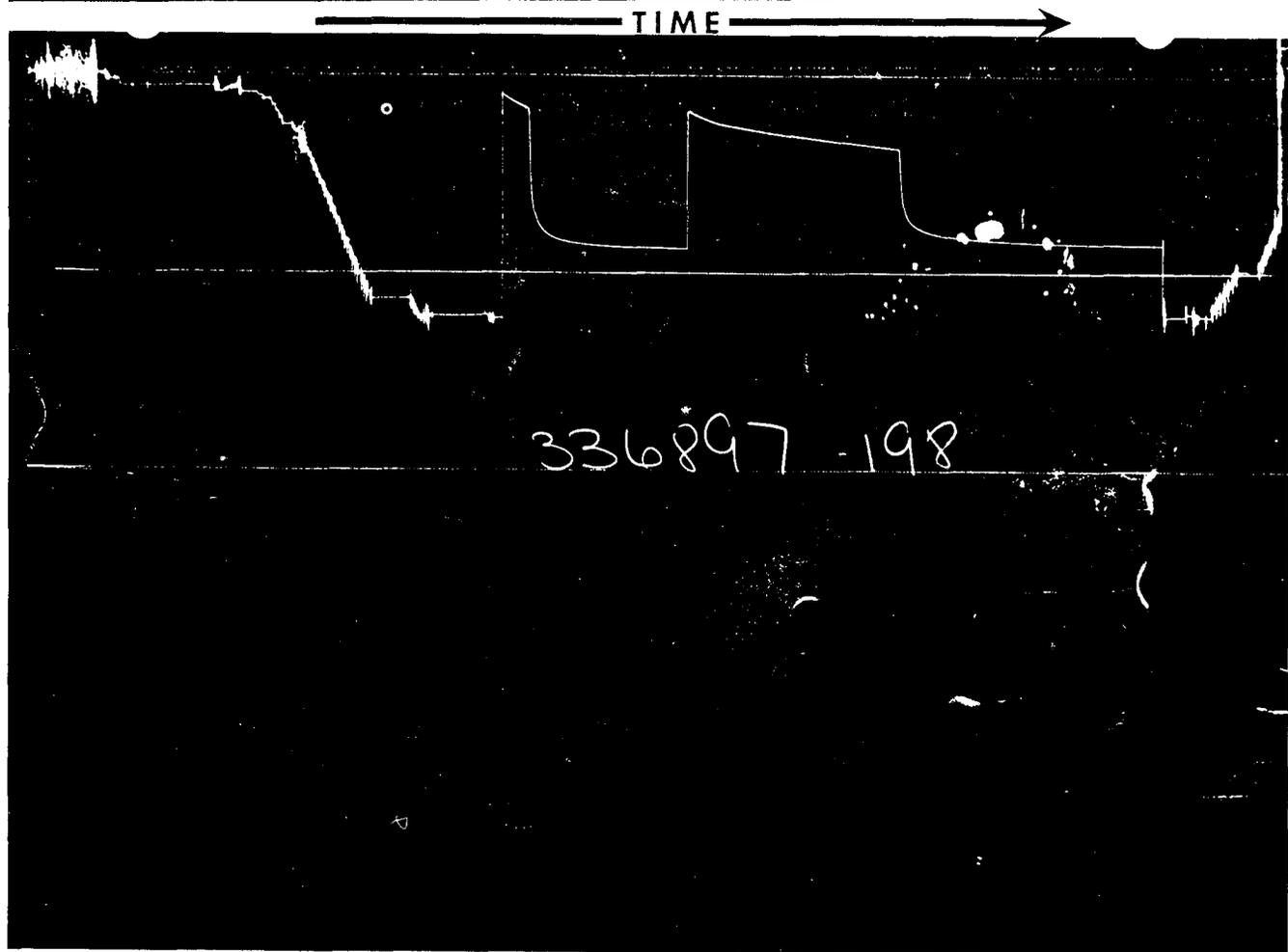
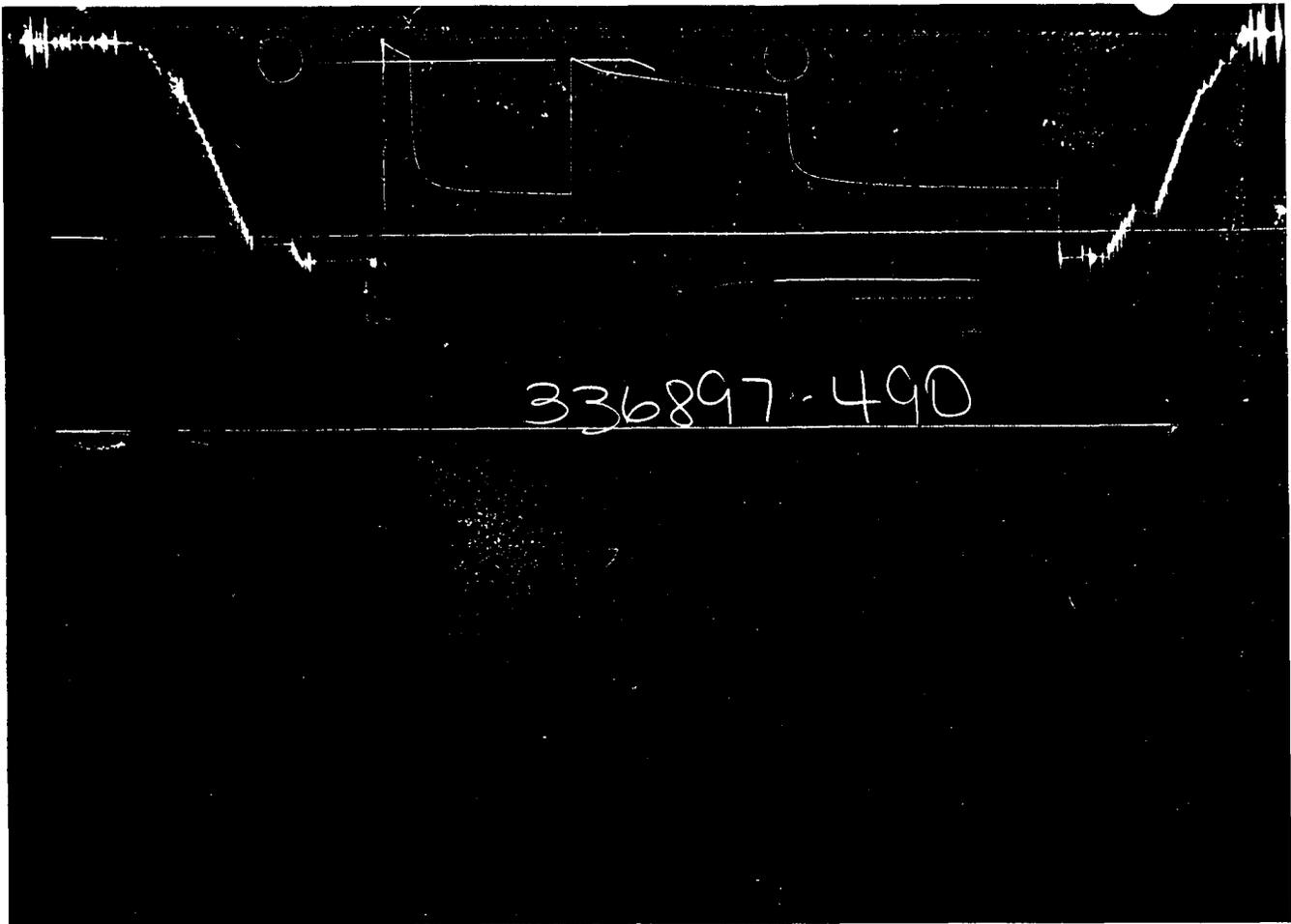
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Formation Testing Service Report

2



HALLIBURTON SERVICES
DUNCAN, OKLAHOMA



Each Horizontal Line Equal to 1000 p.s.i.