

M. J. 9/13/82

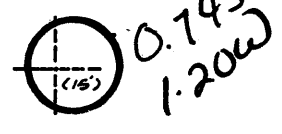
Plot Card CSD

6300' W

LATITUDE 38°30'00" (75)  
38°30'00" (15)

- Ⓐ - 538°16'E-1611'
- Ⓑ - 522°29'E-330'
- Ⓒ - 524°06'E-513'
- Ⓓ - 521°09'W-932'
- Ⓔ - 571°52'W-920'
- Ⓕ - 555°00'E-1099'
- Ⓖ - 513°23'E-965'

W-1 TO W-9 -  
S. 20°-08'E. 1275.1

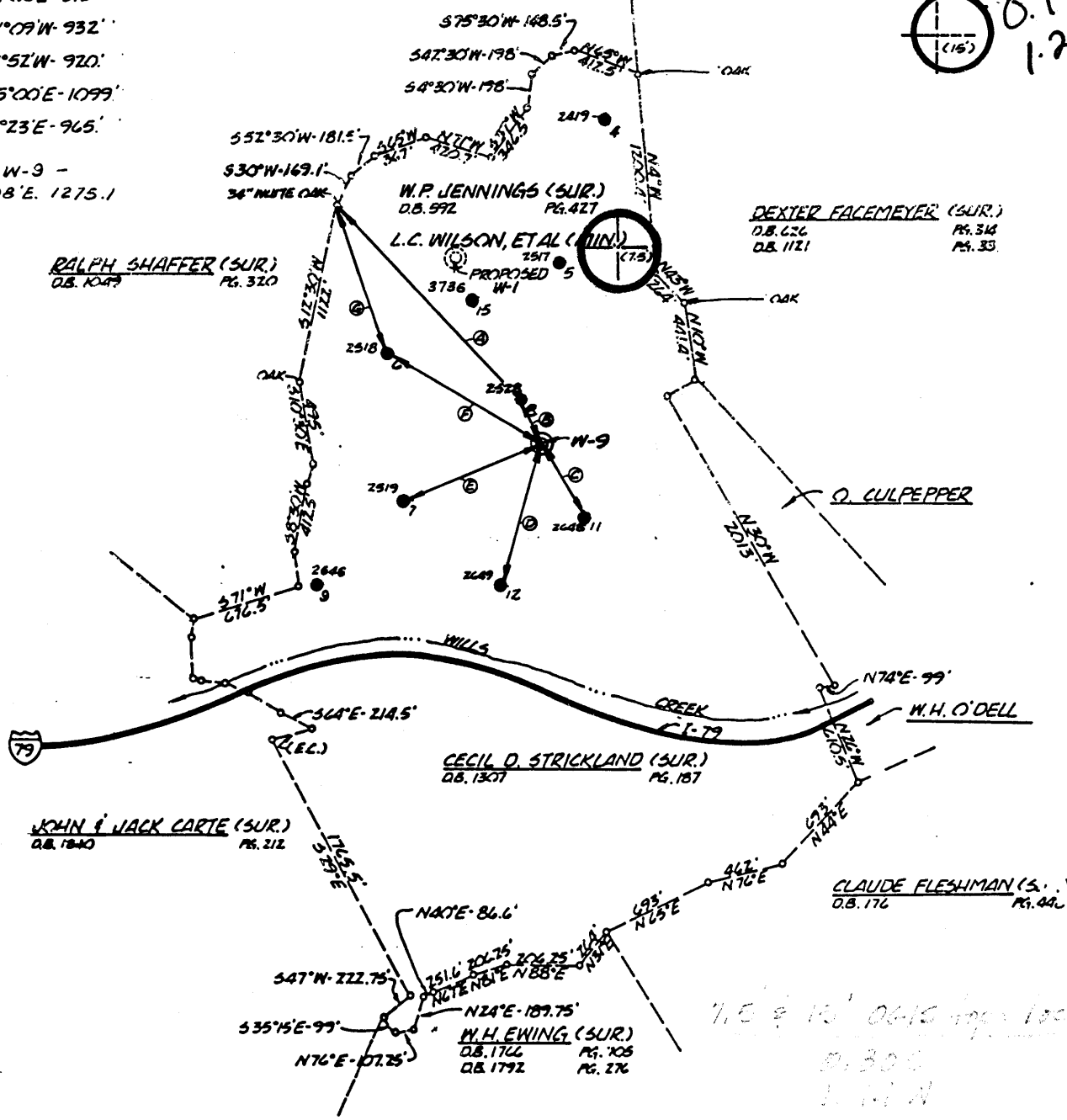


81°25'00" (15)  
81°25'00" (75)

LONGITUDE

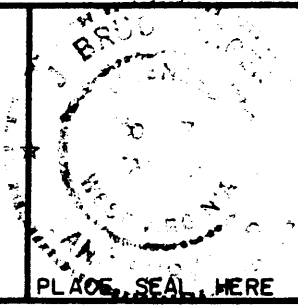
4180'S

1982 MAG. NORTH



FILE NO. 8293-2  
DRAWING NO. \_\_\_\_\_  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY 1 IN 1500'  
PROVEN SOURCE OF ELEVATION EXIST. L.C. WILSON WELL # 15 ELEV. 997'

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF MINES.  
(SIGNED) Bruce Hager  
R. P. E. \_\_\_\_\_ V. L. S. 577



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
FORM IV-6  
(8-78)



DATE AUGUST 5, 19 82  
OPERATOR'S WELL NO. W-9  
API WELL NO. 47-039-3912-41  
STATE COUNTY PERMIT

Department of Mines  
Oil & Gas Division

WELL TYPE: OIL \_\_\_ GAS \_\_\_ LIQUID INJECTION X WASTE DISPOSAL \_\_\_  
(IF "GAS", PRODUCTION \_\_\_ STORAGE \_\_\_ DEEP \_\_\_ SHALLOW \_\_\_)  
LOCATION: ELEVATION 852' WATER SHED WILLS CREEK OF LITTLE SANDY  
DISTRICT ELK COUNTY KANAWHA  
QUADRANGLE BLUE CREEK 7.5' / CLENDENIN 15' (N.W.)  
SURFACE OWNER W.P. JENNINGS ACREAGE 139.91  
OIL & GAS ROYALTY OWNER L.C. WILSON LEASE ACREAGE 279  
LEASE NO. W-1099  
PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE \_\_\_ PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_  
PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
TARGET FORMATION BIG INJUN ESTIMATED DEPTH 1945'  
WELL OPERATOR QUAKER STATE OIL REF. CORP. DESIGNATED AGENT CARL J. CARLSON  
ADDRESS P.O. BOX 1327 PARKERSBURG, W.V. 26101 ADDRESS P.O. BOX 1327 PARKERSBURG, W.V. 26101

OCT 18 1982

8-0 Blue Creek (217)

# QUAKER STATE OIL REFINING CORPORATION

PARKERSBURG PRODUCTION DEPARTMENT  
1226 PUTNAM HOWE DRIVE  
BELPRE, OHIO 45714

PHONE: (614) 423-9543

Mail Address:  
Post Office Box 1327  
Parkersburg, West Virginia 26101

September 29, 1982

Mr. Theodore M. Streit, Administrator  
Office of Oil and Gas  
Department of Mines  
1615 Washington Street, East  
Charleston, WV 25311

Dear Ted:

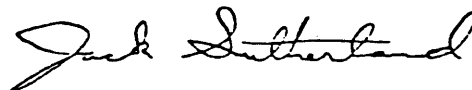
This is a written request for variance from Regulation 9.01, as discussed in our phone conversation of September 20th. The two subject wells are the L.C. Wilson #W-1 and #W-9, Elk District of Kanawha County.

The planned procedure for completion of these wells is as follows. The surface casing will be run to approximately 350 feet (through the freshwater zone) and cemented back to surface. The long string casing will be ran to the top of the Big Injun formation, set on a formation packer shoe, and cemented up through the Salt Sand. Annular pressure between these two strings will be monitored regularly to indicate the injection string integrity during operation.

The well permit applications were both filed the week of September 6, 1982 and form IV-37 will be completed following the casing integrity test. If you have any problems with these plans, please contact me.

Sincerely,

QUAKER STATE OIL REFINING CORPORATION



Jack Sutherland  
Engineer

JES:crb

xc: Carl Carlson  
Wayne McMillan ✓

JAN 03 1983



State of West Virginia  
Department of Mines  
Oil and Gas Division  
Charleston 25305

BEFORE THE OFFICE OF OIL AND GAS, DEPARTMENT OF MINES  
OF THE STATE OF WEST VIRGINIA

IN THE MATTER OF A REQUEST FOR A )  
VARIANCE OF REGULATION 9.01 OF THE )  
OPERATIONAL REGULATIONS ON LIQUID )  
INJECTION AND WASTE DISPOSAL WELLS. )

CAUSE NO. 23  
ORDER NO. 1

ORDER

By letter dated September 29, 1982, Quaker State Oil Refining Corporation requested a variance from Regulation 9.01.

The two (2) subject wells are: L. C. Wilson No. W-1, Permit 47-039-3911-LI, and L. C. Wilson No. W-9, Permit 47-039-3912-LI.

The wells will be completed as follows: The surface casing will be run to approximately 350 feet (through the fresh water zones), and cemented back to surface. The long string casing will be run to the top of the Big Injun formation, set on a formation packer and cemented up through the Salt sand.


Annular pressure between these two strings will be monitored regularly to indicate the integrity of the injection string during operation.

Dated this 15th day of October, 1982.  
Charleston, West Virginia

IN THE NAME OF THE STATE OF WEST VIRGINIA:

OFFICE OF OIL AND GAS OF  
THE DEPARTMENT OF MINES OF  
THE STATE OF WEST VIRGINIA

By:

  
Theodore M. Streit, Administrator

IV-35  
(Rev 8-81)

RECEIVED  
DEC 27 1982



OIL & GAS DIVISION  
DEPT. OF MINES  
State of West Virginia  
Department of Mines  
Oil and Gas Division

Date December 20, 1982  
Operator's  
Well No. W-9  
Farm L.C. WILSON  
API No. 47 - 039 - 3912 L.I.

JAN 03 1983

WELL OPERATOR'S REPORT  
OF  
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil \_\_\_ / Gas \_\_\_ / Liquid Injection XX / Waste Disposal \_\_\_ /  
(If "Gas," Production \_\_\_ / Underground Storage \_\_\_ / Deep \_\_\_ / Shallow \_\_\_ /)

LOCATION: Elevation: 852 Watershed Wills Creek of Little Sandy  
District: Elk County Kanawha Quadrangle Blue Creek 7.5'

COMPANY QUAKER STATE OIL REFG. CORP.  
ADDRESS P.O.Box 1327, Parkersburg, WV 26102-1327  
DESIGNATED AGENT Carl J. Carlson  
ADDRESS same as above  
SURFACE OWNER W.P. Jennings etal  
ADDRESS Box 142, Sissonville, WV  
MINERAL RIGHTS OWNER L.C. WILSON ETAL  
ADDRESS 1618 Kanawha Blvd, E., Charleston, WV  
OIL AND GAS INSPECTOR FOR THIS WORK Martin Nichols  
ADDRESS Clendenin, WV  
PERMIT ISSUED 9/10/82  
DRILLING COMMENCED 10/18/82  
DRILLING COMPLETED 10/24/82

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cord.			
13-10"			
9 5/8			
8 5/8	267	267	75 sx
7			
5 1/2			
4 1/2	1855	1855	150 sx
3			
2			
Liners used			

IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON \_\_\_\_\_

GEOLOGICAL TARGET FORMATION Big Injun Depth 1856 - 1912 feet  
Depth of completed well 1950 feet Rotary xx / Cable Tools \_\_\_\_\_  
Water strata depth: Fresh na feet; Salt 1131 feet  
Coal seam depths: none Is coal being mined in the area? no

OPEN FLOW DATA

Producing formation Big Injun Pay zone depth 1856 - 1912 feet  
Gas: Initial open flow --- Mcf/d Oil: Initial open flow --- Bbl/d  
Final open flow --- Mcf/d Final open flow --- Bbl/d  
Time of open flow between initial and final tests --- hours  
Static rock pressure 530 psig (surface measurement) after est. hours shut in  
(If applicable due to multiple completion--)  
Second producing formation \_\_\_\_\_ Pay zone depth \_\_\_\_\_ feet  
Gas: Initial open flow \_\_\_\_\_ Mcf/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow \_\_\_\_\_ Mcf/d Oil: Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ hours  
Static rock pressure \_\_\_\_\_ psig (surface measurement) after \_\_\_\_\_ hours shut in

(Continue on reverse side)

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

Frac'd open hole with 173 bbl. gelled water and 1600# of 20/40 sand.  
Breakdon at 1000 psi, treated at 1460 psi and 10 BPM. I.S.I. 1000 psi.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Shale			0	120	
Sandsonte			120	162	
Shale			162	255	
Sandstone			255	298	
Shale			298	368	
Sandstone			368	559	
Shale & Siltstone			559	722	
Sandstone			722	796	
Shale & Sandstone			796	1131	
Salt Sands			1131	1538	
Shale & Siltstone			1538	1668	
Little Lime			1668	1717	
Pencil Cave			1717	1724	
Big Lime			1724	1854	
Big Injun			1856	1912	
Siltstone & Shale			1912	1950 LTD	

(Attach separate sheets as necessary)

QUAKER STATE OIL REFINING CORPORATION

Well Operator

By: Michael C. Brannock

Date: Michael C. Brannock - 12/20/82

Note: Regulation 2.02(i) provides as follows:  
"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including coal, encountered in the drilling of a well."

STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES, OIL AND GAS DIVISION

PRE-OPERATION CERTIFICATE  
FOR LIQUID INJECTION OR WASTE DISPOSAL WELL

WELL OPERATOR Quaker State Oil Refining Corporation DESIGNATED AGENT Carl J. Carlson  
Address P.O. Box 1327 Address P.O. Box 1327  
Parkersburg, WV 26101 Parkersburg, WV 26101

GEOLOGICAL TARGET FORMATION Big Injun Depth 1856' feet(top) to 1912' feet(bottom)K.B.  
Virgin reservoir pressure in target formation 530 psig  
Source of information on virgin reservoir pressure \_\_\_\_\_  
Perforation intervals \_\_\_\_\_ Open-hole intervals \_\_\_\_\_

MAXIMUM PROPOSED INJECTION OPERATIONS  
Volume per hour: 20 BBL/Hour Bottom hole pressure: 2000 psig

DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED  
Liquids to be injected for oil recovery under Code § 22-4-10a: Produced brine from the Big Injun formation.  
Wastes to be disposed of: See above.

Additives (slurry mediums, inhibitors, solvents, oxidizers, deoxidizers, etc.): Bacteriacide, Corrosion Inhibitor, and Scale Inhibitor continuously treated with Visco 3905. Also, weekly batch treatment with Visco 3951, Bacteriacide, and Corrosion Inhibitor (Nalco Chemical Company).

SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL None

FILTERS (IF ANY) Two stage filter system: first stage involving a 75 micron cartridge vessel on main line and second stage involving a 5 micron cartridge vessel at the injection well.

ADDITIONAL DRILLING AS PART OF THE CONVERSION  
(Complete and submit Form IV-35, "Well Operator's Report of Drilling, Fracturing and/or Stimulating or Physical Change".)

DETAILS ON NEW CASING AND TUBING PROGRAM AS PART OF THE CONVERSION:  
(To be completed below unless the new casing and tubing program is described on a Form IV-35, "Well Operator's Report of Drilling, Fracturing and/or Stimulating or Physical Change", submitted in connection with the permit to which this Form IV-37 pre-operation certificate relates.)

CASING OR TUBING TYPE	SPECIFICATIONS				FOOTAGE INTERVALS		CEMENT PILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft	New	Used	For drilling		
Conductor								Kinds Formation
Fresh water	8 5/8	F-25	24#	X		267'	267'	75 sacks Packer Shoe
Coal								Sizes 5 1/2" X 6 3/4"
Intermediate								
Production	5 1/2	J-55	14#	X		1855'	1855'	150 sacks Deaths set 1859' K.B.
Tubing								
Liners								Perforations: Top Bottom

MECHANICAL INTEGRITY TEST

Test method: Casing was pressured up to 1500 psig and monitored for 20 minutes. No leak-off was observed (see pressure chart attached).

The undersigned certifies that the test described above was made on October 24, 19 82, and demonstrated the mechanical integrity of the well.

FACILITIES OR SYSTEMS TO PROTECT THE INTEGRITY OF THE GEOLOGICAL TARGET FORMATION OR TO PREVENT FRACTURING THE CONFINING STRATA A two stage safety system has been installed to avoid over-pressuring the formation and the injection facilities.

APPLICATION FOR VARIANCE (IF ANY) FROM REGULATION 9.01(a)  
[Specify purpose, necessity, and justification]

See Attachment: Case No. 23  
Order No. 1

QUAKER STATE OIL REFINING CORPORATION

Well Operator

By

Its

[Signature]  
Agent





PROPOSED WORK ORDER

THIS IS AN ESTIMATE ONLY:
ACTUAL INFORMATION MUST BE SUBMITTED ON
FORM IV-35 AND/OR FORM IV-37 UPON COMPLETION

DRILLING CONTRACTOR (IF KNOWN) unknown

Address

GEOLOGICAL TARGET FORMATION, Big Injun

Estimated depth of completed well, 1945 feet Rotary xx/ Cable tools /

Approximate water strata depths: Fresh, 152 feet; salt, 1199 feet.

Approximate coal seam depths: NONW Is coal being mined in the area? Yes / No XX /

CASING AND TUBING PROGRAM

Table with columns: CASING OR TUBING TYPE, SPECIFICATIONS (Size, Grade, Weight, New, Used), FOOTAGE INTERVALS (For drilling, Left in well), CEMENT FILL-UP OR SACKS (Cubic feet), PACKERS (Kind, Formation, Sizes, Deaths set). Rows include Conductor, Fresh water, Coal, Intermediate, Production, Tubing, and Liners.

NOTE 1: Regulation 7.02 of the Department of Mines provides that the original and four copies of Form IV-3 must be filed with the Department, accompanied by (i) a plat in the form prescribed by Regulation 11, (ii) a bond in one of the forms prescribed by Regulation 12, or in lieu thereof the other security allowed by Code § 22-4-2a, (iii) unless previously paid on the same well, the fee required by Code § 22-4-12a, (iv) Form IV-9, "Reclamation Plan", applicable to the reclamation required by Code § 22-4-12b and Regulation 23, and (v) if applicable, the consent required by Code § 22-4-8a from the owner of any water well or dwelling within 200 feet of the proposed well.

A separate Form IV-3 shall not be required for fracturing or stimulating a well where fracturing or stimulating is to be part of the work for which a permit is sought and is noted as such on the Form IV-3 filed in connection therewith.

NOTE 2: In addition to the permit required from the Department of Mines, the operator of a disposal well must obtain a separate permit from the Department of Natural Resources under the provisions of Code § 20-5A-5(b)(7).

THIS PERMIT MUST BE POSTED AT THE WELL SITE.

ALL PROVISIONS BEING IN ACCORDANCE WITH CHAPTER 22,

ARTICLE 4 OF THE W. VA. CODE, THE LOCATION IS HEREBY

APPROVED FOR THIS PERMIT SHALL EXPIRE

IF OPERATIONS HAVE NOT COMMENCED BY

BY [Signature]

The following waiver must be completed by the coal operator and by any coal owner or coal lessee who has recorded a declaration under Code § 22-4-20, if the permit is to be issued within thirty (30) days of receipt thereof:

W A I V E R

The undersigned coal operator / owner / lessee / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of the well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

Date: , 19

By

Its

WELLSERVICES COMPANY  
Well No. W-9 LEASE. Wilson

Wellbore ID No. 212476

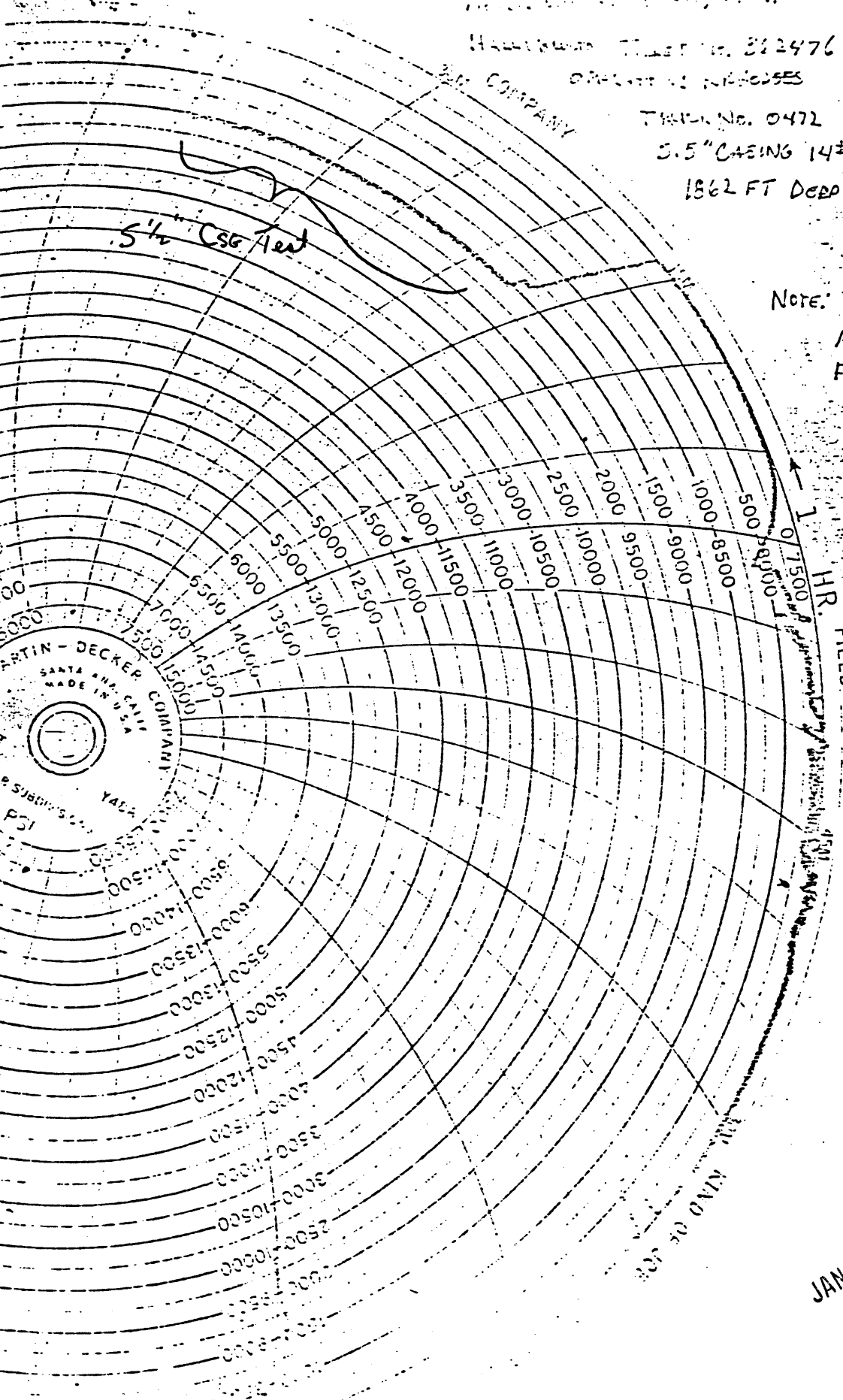
OPERATOR: WELLSERVICES

WELLSERVICES COMPANY

TRIP No. 0472

3.5" CASING 14#/FT

1862 FT DEEP



NOTE: PRESSURE TESTED CASING  
AT END OF CEMENT JOB  
FOR 23 MINUTES

*K K Hodges*

JAN 03 1983