C-NE-NW 17-17-24W

walters drilling co.

510 ORPHEUM BLDG.
WICHITA 2, KANSAS
AMherst 3-6683

GEOLOGICAL REPORT

May 8th, 1962

WALTERS DRILLING CO. & BEARDMORE DRILLING CO.
DICKMAN #1
C NE/4 NW/4 Section 17-17S-24W
Ness County, Kansas

CONTRACTOR: Walters Drilling Co.

ELEVATION: 2474 GL
2476 DF
2479 KB

COMMENCED: April 25th, 1962
COMPLETED: May 7th, 1962

CASING RECORD: 8-5/8" set @ 152' w/100 sacks cement.
5-1/2" set @ 4499' w/125 sacks cement.

DRILL STEM TESTS:
#1 4427-41' Mississippian
#2 4441-55' Mississippian

WIRE LINE TESTS:
#1 4460-61' Mississippian
#2 4332½-33½' Fort Scott
#3 2505½-08' Herrington
#4 2645½-48' Fort Riley

ELECTRICAL SURVEYS: Schlumberger Laterolog-Gamma Ray-Sonic, Barold gas detector.

SAMPLES: Samples were examined and drilling time was logged from 550' to 4500', rotary total depth.

MEASUREMENTS: All datums below are from kelly bushing elevation.

FORMATION	SAMPLE TOPS	SCHLUMBERGER TOPS
BLAINE	1132 (1347)	1131 (1348)
STONE CORRAL	1749 (730)	1754 (725)
HERRINGTON	2500 (- 21)	2499 (- 20)
WINFIELD	2560 (- 81)	2555 (- 76)
FORT RILEY	2635 (- 156)	2636 (- 157)
FLORENCE FLINT	2700 (- 221)	2700 (- 221)
WREFORD	2825 (- 346)	2818 (- 339)
PENNSYLVANIAN	3347 (- 868)	3346 (- 867)
TOPEKA	3510 (-1031)	3512 (-1033)
HEEBNER	3789 (-1310)	3789 (-1310)
LANSING	3830 (-1351)	3830 (-1351)
BASE KANSAS CITY	4126 (-1647)	4123 (-1644)
PAWNEE	4248 (-1769)	4248 (-1769)
FORT SCOTT	4330 (-1851)	4330 (-1851)
CONGLOMERATE CHERT	4416 (-1937)	4418 (-1939)
MISSISSIPPIAN	4423 (-1944)	4424 (-1945)
TOTAL DEPTH	4500	4500 (-2021)

FILE

17-17-24W
Cne nw

ZONES OF INTEREST

Note: Formation tops and depths below are based on drill pipe measurements which tie exactly to electric log measurements.

CHASE GROUP

Herrington @ 2500

2500-20 Dolomite, buff, very finely to finely granular, fairly tight and compact, some soft and friable, part discolored pale green and slightly shaley; having very fine pinpoint porosity and slight show free gas in wet samples. Reading of 12 units on gas detector.

W.L.T. #3 - 2505½-2508, Open 61 minutes, Recovered 3400 cc water with slight fluorescence. ISIP 820#/41 minutes, FSIP 780#/30 minutes.

Krider @ 2520

2520-35 Dolomite, gray to cream and buff, very finely granular to medium crystalline, slightly fossiliferous, some fairly dense, siliceous; most with fine vugular and fossil-cast porosity and fair show free gas in wet samples. Reading of 6-7 units on gas detector.

Winfield @ 2560

2560-95 Dolomite, cream to light buff, very finely sucrose to finely crystalline, mostly fairly tight and compact with some fine pinpoint porosity at top, becoming oolicastic below 2570 with occasional trace coarsely crystalline rhombic dolomite; most with good oocastic and vugular porosity and fair show free gas in wet samples. Reading of 8 units on gas detector.

Fort Riley @ 2635

2635-75 Dolomite, buff, very finely sucrose to crystalline, some fairly dense, cherty, most with fair vugular and some oocastic porosity, having fair to good show free gas in wet samples. Reading of 10-12 units on gas detector.

W.L.T. #4 - 2645½-48, Open 30 minutes, recovered 20,600 cc water, ISIP 800#/10 minutes, FSIP 780#.

Florence Flint @ 2700

2700-05 Dolomite, cream to buff, finely sucrose to crystalline, good vugular and some fossil-cast porosity and slight show free gas in wet samples. Little or no gas recorded on gas detector.

17-17-24W
C ne nw

Florence Flint (Continued)

2705-27 Limestone, dirty gray, micro-crystalline, dense, cherty, part sub-chalky and slightly dolomitized, having no visible porosity and no shows.

2727-33 Shale, brick red, waxy.

2733-65 Limestone, dirty gray, finely crystalline to dense, part slightly dolomitized with abundant gray-brown mottled white fresh translucent chert; having no visible porosity and no shows.

Lansing-Kansas City @ 3830

3885-91 Limestone, white to cream, finely to coarsely crystalline, vaguely oolitic, most with very fine pinpoint porosity, some soft and chalky. No shows, poor to fair reservoir.

3934-42 Limestone, light brown, finely to medium crystalline, fairly dense, sub-oolitic, some secondary calcite crystals having poorly developed very fine pinpoint porosity and no shows. Poor reservoir.

3942-52 Limestone, cream to light buff, sub-translucent, finely to medium crystalline, vaguely fossiliferous and oolitic, having good fossil-cast and fine vugular porosity and no shows. Good reservoir.

3996-4000 Limestone, light brown and buff, finely to medium crystalline, fossiliferous, oolitic, some poor fossil-cast and fine vugular porosity. No shows. Poor reservoir.

4050-58 Limestone, cream to buff, very finely to medium crystalline, oolitic and oolicastic, having very good oocastic porosity and no shows. Excellent reservoir.

4081-90 Limestone, white to cream and buff, finely crystalline to micro-crystalline, vaguely oolitic and oolicastic, some dense siliceous to soft and sub-chalky. Little or no visible porosity, no shows. Poor reservoir.

Fort Scott @ 4[illegible]

4332-34 Limestone, gray-brown, finely to medium crystalline, slightly fossiliferous, recrystallized, having some poorly developed fossil-casts and fine vugular porosity, some larger isolated vugs, fair odor, brown [illegible] free oil, scattered brown staining and saturation and [illegible] fluorescence. [illegible]

WLT #2 - 4332-4333½ Open 51 minutes No recovery, no pressures.

Best Copy Avail.
(K65-DRL)

17-17-24W
C new

Conglomerate Chert @ 4416

4416-22 Chert, yellow mottled white, fresh, sharp, sub-translucent, part spicular, with vari-colored sub-waxy to sandy clay-shale. No porosity, shows of oil, or fluorescence were encountered through this interval.

Mississippian @ 4423 (Spergen)

4423-27 Limestone, gray-brown, finely to medium crystalline, fossiliferous, dolomitic, some discolored green and shaley, having poor vugular porosity, with fair odor, no free oil, and black dead asphalt staining. Poor reservoir. Judged not worth testing.

4427-64 Dolomite, cream to buff and light gray, very finely sucrose to finely crystalline, dense, fossiliferous, with good vugular and fossil-cast porosity, occasional trace coarse crystalline rhombic dolomite, having good odor, abundant light to dark brown globules free oil, brown scattered staining and saturation and bright fluorescence.

D.S.T. #1 - 4427-4441, Open 1 hour, good blow throughout, recovered 150' gas in pipe, 550' clean, gassy oil (EST 40 gravity), and 265' froggy oil. No water.

Initial Shut-In Pressure in 30 minutes	1310#
Initial Flow Pressure	54#
Final Flow Pressure	307#
Final Shut-In Pressure in 30 minutes	1278#

D.S.T. #2 - 4441-55, Open 1 hour, strong blow throughout, recovered 210' gas in pipe, 3000 feet clean gassy oil (37 gravity). No water.

Initial Shut-In Pressure in 30 minutes	1318#
Initial Flow Pressure	323#
Final Flow Pressure	1105#
Final Shut-In Pressure in 30 minutes	1270#

W.I.T. #1 - 4460-61, Open 61 minutes, recovered 9,700 c.c. oily water. ISIP 1525#/2 minutes. FSIP 1425#/10 minutes.

Warsaw @ 4464

4464-91 Dolomite, white to cream, very finely sucrose to cryptosucrose, slightly glauconitic, soft and friable to dense, siliceous, part soft and chalky; having fine vugular and fossil-cast porosity (less than the above interval), with little or no visible staining but spotty show free oil to 4480.

4491-4500 Dolomite as above, with fairly abundant white-gray and smoky gray, fresh, sharp, sub-opaque chert. No shows.

Rotary Total Depth @ 4500

17-17-24W
C NE NW

CONCLUSIONS AND RECOMMENDATIONS

In the Dickman #1 the Mississippian appears to be the only producing formation. Sample and electric log analysis as well as drill stem test recoveries and pressures indicate that excellent reservoir conditions are present in the Mississippian at this location. The oil-water contact of this formation as determined by electric log analysis and W.L.T. #1 is at 4460. There is, therefore, 36 feet of gross pay in the Mississippian. 100% wtr

The gas shows logged in the Permian Chase group on the gas detector and in the samples were tested by W.L.T. #3 in the Herrington, and W.L.T. #4 in the Fort Riley. Because water and no free gas was recovered on these tests, the above zones, as well as the untested Krider and Winfield, are considered as having no commercial value at this location.

The show of oil encountered in the Fort Scott was considered not worth drill stem testing at the time it was cut in view of the thin pay interval and poor development of porosity and permeability. However, electric log analysis indicates 18% porosity and 17% water saturation from 4332-34, therefore W.L.T. #2 was taken in this interval. Because no fluid or pressures were recovered from this test, the Fort Scott is considered as having no commercial value at this location, and needs no further testing through casing.

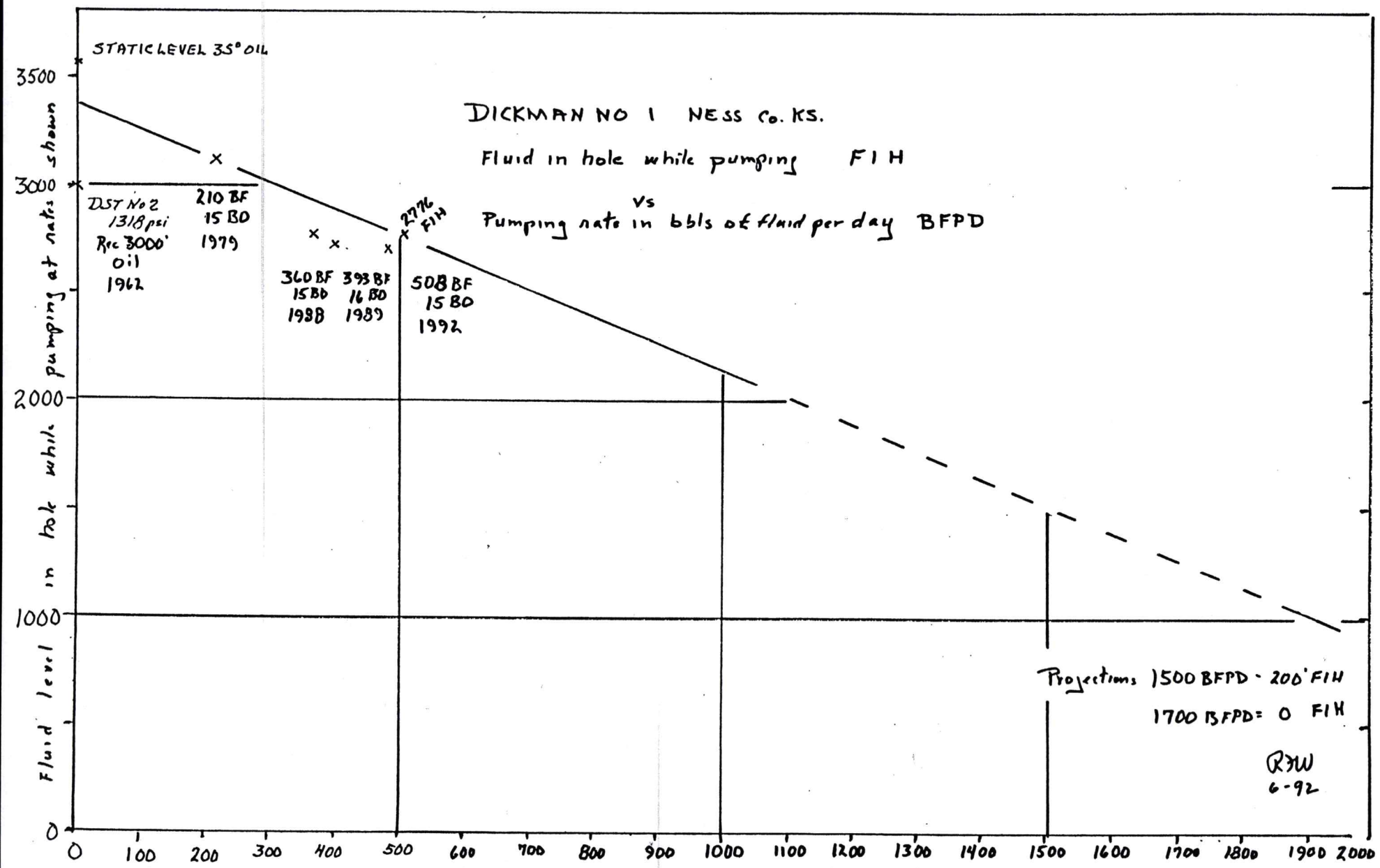
In view of the above recommendation was made to set 5-1/2" casing at 4499 feet, one foot off bottom on May 6th, 1962. The Dickman #1 should make a good well by natural completion through perforations.

Respectfully submitted,

Don W. Beauchamp

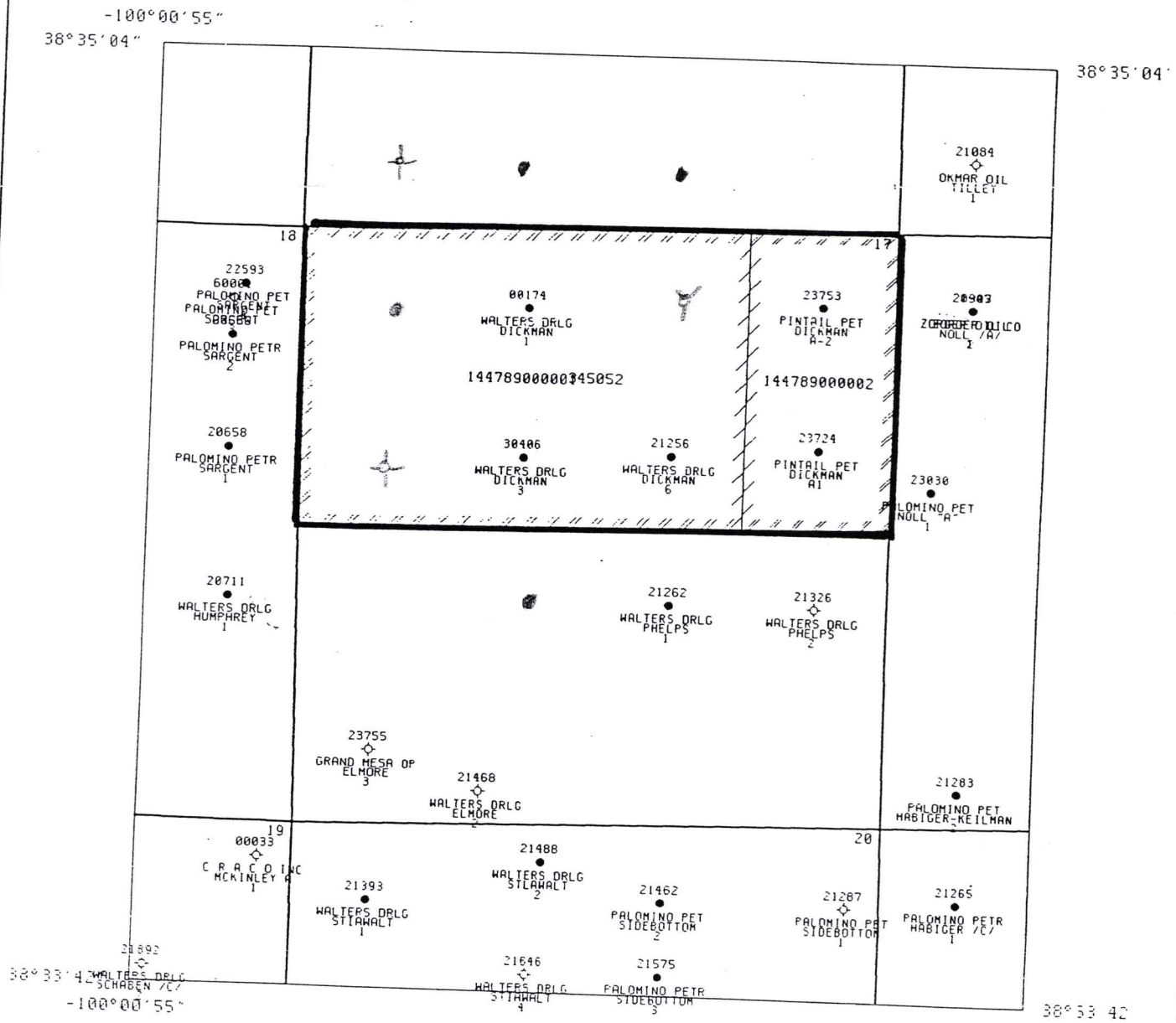
DON W. BEAUCHAMP, Geologist

DWB:vld


STATIC LEVEL 35° OIL
DICKMAN NO 1 NESS Co. KS.
Fluid in hole while pumping FIH
Vs
Pumping rate in bbls of fluid per day BFPD
DST No 2
1318 psi
Rec 3000'
oil
1962
210 BF
15 BO
1979
360 BF
15 BO
1988
393 BF
16 BO
1989
2776 FIH
508 BF
15 BO
1992
Projections 1500 BFPD - 200' FIH
1700 BFPD = 0 FIH
RJW
6-92
Fluid level in hole while pumping at rates shown
3500
3000
2000
1000
0
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000

Lot 12.00 (260)
PC# 345052 WALTERS-DICKMAN

Lot 12.01 (260)
PC# 4233 DICKMAN A #1
NESS, KS



PHILLIPS PETROLEUM COMPANY

AREA DICKMAN

TYPE INFORMATION LOT 12.00 & 01

TWP T17S RGE R24W SURVEY N/2 17

COUNTY NESS STATE KANSAS COUNTRY USA

MAPPED BY GMW DATE 25 OCT 93 17:07

PROJECTION LAMBERT CENTRAL MERIDIAN -100.00130

SPHEROID CLARKE 1866 BASE PARALLELS 38.56534 38.58055

SCALE 1 = 0001400

0 1,400 2,800

SCALE (FEET)

WALTERS DRILLING CO. & BEARDMORE DRILLING COMPANY
DICKMAN #1
C NE/4 NW/4 Section 17-17S-24W
Ness County, Kansas

DRILLING TIME LOG

From-To	Minutes	Remarks
4200-10	3-4-3-4-6-5-3-5-4-6	
10-20	5-5-5-4-5-5-5-4-3-5	
20-30	5-2-3-2-5-7-6-7-6-7	
30-40	9-7-8-7-6-6-8-7-6-5	
40-50	6-7-6-5-6-5-6-3-7-8	
50-60	10-8-9-8-9-8-6-10-8-7	
60-70	9-7-7-9-7-12-10-10-9-9	
70-80	9-9-10-10-10-8-10-8-7-7	
80-90	9-10-8-8-9-7-9-8-7-7	
90-4300	8-9-9-10-9-8-8-8-9-9	
4300-10	9-8-8-9-9-9-15-10-9-9	
10-20	9-9-9-8-7-7-8-7-8-7	
20-30	8-7-5-7-5-4-3-3-4-4	
30-40	6-9-4-4-9-9-9-12-11-11	Trip @ 4340'
40-50	5-6-6-5-5-4-5-8-9-9	
50-60	6-5-6-7-7-7-6-6-5-3	
60-70	4-9-8-9-8-10-9-8-8-11	
70-80	9-10-9-6-7-9-8-9-7-6	
80-90	5-7-9-9-7-7-6-8-8-9	
90-4400	10-8-7-6-7-11-9-9-10-9	
4400-10	8-8-10-7-7-6-7-11-6-8	
10-20	9-8-6-7-7-7-10-9-9-15	
20-30	13-11-16-12-10-9-15-9-8-6	
30-40	9-11-9-8-8-7-9-8-9-10	
40-50	12-4-2-3-4-8-6-4-6-5	Circulate for D.S.T. #1
50-60	3-3-3-3-3-2-2-2-3-3	Circulate for D.S.T. #2
60-70	4-3-2-2-4-4-3-5-5-4	
70-80	3-4-3-4-5-5-3-4-5-5	
80-90	5-5-4-2-4-4-5-5-4-4	
90-4500	4-6-6-6-4-3-6-7-7-7	

Total Depth 4500'

Dickman #1

CURRENT REQUIREMENT TESTS ON FIVE WELLS IN THE NESS CITY, KANSAS AREA FOR WALTERS DRILLING COMPANY

PURPOSE:

Log Current-Potential curves were run on five wells in the Ness City, Kansas area to determine the amount of cathodic protection current required to mitigate external corrosion of the casing in contact with the formation.

PROCEDURE:

Using a temporary ground bed located approximately 100 feet from the well, current was applied to the casing in increasing increments, as noted on the enclosed curves. Each increment of current was applied for exactly two minutes. At the end of each time interval, the current circuit was momentarily opened and the well-to-earth potential using a copper-copper sulphate electrode, measured.

The well-to-earth potential was measured across a 40 Mcf condenser, placed in the circuit between the well and the half-cell, using a Digital vacuum tube boltmeter.

In each instance, the half-cell electrode was located a distance of approximately 100 feet for every 1,000 foot depth of casing from the well head.

CONSLUSIONS:

It was found from these tests that the current required for cathodic protection of the casings ranged from 5.8 to 7.4 amperes. The magnitude of these requirements indicates a definite need for protection.

To meet these current requirements will require a rectifier type installation.

Respectfully submitted,

CORROSION SERVICES INCORPORATED

Y. W. Titterington

Y. W. Titterington

May 1963