32-14-29W
C S/2 NW

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Petroleum Geologist
PHONE AMHERST 7-3971
706 ORPHEUM BUILDING
WICHITA 2, KANSAS

November 6, 1963

S & C Drilling, Inc.
Box 271
Hays, Kansas

Re: Lundgren No. 2
C/ S/2 NW/4 32-14-29W
Gove County, Kansas.

Gentlemen:

Drilling progress was observed at the above captioned well from 3550' to total depth. Five foot samples were saved and examined from 3400' to total depth. One foot drilling time was kept from 3400' to total depth.

MISCELLANEOUS DATA

Surface Hole: October 15, 1963.
Surface Casing: 8 5/8" set at 90 feet, cemented with 125 sacks.
Oil String: 5 1/2" set at 4265, cemented with 250 sacks.
Centralizers at: 4255, 4187, 4085, 3825, 3660.
Rotary Drilling Completed: November 5, 1963.

FORMATION TOPS

Elevation 2586' K.B.

	By Samples and Drilling Time		By Welex	
Anhydrite (driller's)	1983	+ 603	1988	+ 598
Heebner	3609	-1023	3606	-1020
Toronto	3629	-1043	3627	-1041
Lansing	3647	-1061	3645	-1059
Base KC	3956	-1370	3952	-1364
Marmaton	3976	-1390	3976	-1390
Pawnee	4066	-1480	4063	-1477
Ft. Scott	4133	-1547	4131	-1545
Cherokee Shale	4159	-1573	4157	-1571
Conglomerate	4218	-1632	4215	-1629
Mississippian (St. Louis)	4224	-1638	4220	-1644
Spergen Dolomite	4265	-1679	4263	-1677
Total Depth	--	--	(4250	-1664)

Note: Welex measurements are all approximately 2 feet higher than rotary measurements and are used for all sample descriptions in this report.

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STRUCTURAL POSITION

On Pennsylvanian and Marmaton beds No. 2 Lundgren is from 8 to 9 feet lower than No. 1 Lundgren; on the Mississippian (St. Louis) it is 17 feet lower than No. 1 Lundgren. The St. Louis section is thick and the Spergen Dolomite at 4263 (Welex estimated measurement) is -1677, which is 24 feet lower than No. 1 Lundgren and 2 feet lower than No. 2 Phelps, the lowest Mississippian producer in the Pool.

The structural position of No. 2 Lundgren confirms exactly, the estimated formation tops made by Seis-Tech.

TORONTO SECTION

3626-32: Dolomite, cherty, fine vugular porosity, no odor, small show of free oil, light to dark stain.

Halliburton DST No. 1, 3616-45: Open 1 hour, weak blow 17 mins. Recovered 15 feet of mud, no oil. IBHP 1164#/30 mins. FBHP 1067#/30 mins. IFP, 9#, FFP 14#. Zone of no value.

LANSING SECTION

3846-50: "K" Zone - Limestone, crystalline, fair vugular porosity, very faint odor, small show of free oil, dark stain.

Halliburton DST No. 2, 3838-60: Open 1 hour, weak blow 15 mins. Recovered 2 feet of mud. IBHP 890#/30 mins. FBHP 810#/30 mins. IFP 9#, FFP 9#. Zone of no value.

3865-72: "L" Zone - Limestone, faintly oolitic, no odor, no free oil, no stain. (Circulated at 3880') Zone of no value.

3895-98: "M" Zone - Limestone, crystalline, fossiliferous, poor vugular porosity. No odor, very slight show of free oil, light stain. (Circulated at 3900 and at 3910') Zone of no value.

UPPER MARMATON SECTION

4021-28: "O" Zone - Limestone, medium crystalline, trace of cellular limestone, poor porosity, no odor, faint show of free oil, poor to fair staining. (Circulated at 4030') Zone of no value.

32-14-29W
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PAWNEE SECTION

4066-74: "Q" Zone - Limestone, oolitic, poor porosity, faint odor, good show of free oil, light stain.

Halliburton DST No. 3, 4055-76: Open 1 hour, weak blow 40 mins, recovered 5' of slightly oil cut mud, 60 feet of oil specked mud. IBHP 465#/30 mins. FBHP 85#/30 mins. IFP 18#, FFP 45#.
This zone is not considered to be of any value.

Diamond Core No. 1, 4110-4140 (100% recovery)

Lower Pawnee

4110' - 4112' Limestone dense, thin shale partings upper 8".
4112' - 4112'-8" Limestone, scattered vugular porosity, bleeding oil.
4112' - 8" - 4113' - 2" Limestone dense, few small vugs bleeding oil.
4113' - 2" - 4115' - 6" Limestone, good vugular porosity, " " "
4115' - 6" - 4116' Limestone, few small vugs, bleeding oil.
4116' - 4123' - 6" Limestone dense, fossiliferous.
4123' - 6" - 4130' - 6" Shale, black.
4130' - 6" - 4132' - 6" Shale, gray, thin, irregular shale partings, last 8".
4132' - 6" - 4133' - 6" Gray limestone, breccia.

Top Ft. Scott 4132' - 6"

4133' - 6" - 4134' Limestone, gray, dense.
4134' - 4135' - 6" Limestone, gray, oolitic, poor porosity, bleeding oil.
4135' - 6" - 4138' Limestone, gray, oolitic, dense, hair-line vertical fractures, bleeding oil.
4138' - 4138' - 8" Shale, gray to black.
4138' - 8" - 4140' Limestone, dense, few horizontal fractures.

Halliburton DST No. 4, 4094-4140: Open 2 hours, good blow throughout test, recovered 90 feet of slightly oil cut mud and 300 feet of very slightly oil cut water. IBHP 1034#/30 mins. FBHP 776#/30 mins. IFP, 17#, FFP 164#.

DST No. 4 covered the "S" Zone in the lower Pawnee (4112 - 4115½) and the "T" Zone in the upper Ft. Scott (4134 - 4135½) and it is the writer's opinion that most of the fluid recovered in the test came from the "S" zone in the lower Pawnee.

The only other DST of the "S" zone in the area was in

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Wycoff Bros. No. 3 Lundgren "A", a low dry hole in the C NE SE of 31-14-29W, resulting in a similar recovery of 100' of oil and 200' of water. It appears that this zone has an excellent chance for production in structurally high wells in the area.

Diamond Core No. 2, 4173-4195 (100% recovery)

4173' - 0" - 4174' - 6:	Limestone, bluish gray, chalky, thin shale partings.
4174' - 6" - 4176' - 2"	Shale, dark gray, laminated.
4176' - 2" - 4178' - 4"	Limestone, very fossiliferous, fair to good vugular and fossil-cast porosity, bleeding oil.
4178' - 4" - 4179' - 4"	Limestone as above, less porosity, bleeding oil.
4179' - 4" - 4179' - 8"	Limestone, dense.
4179' - 8" - 4180' - 0"	Shale, black.
4180' - 0" - 4181' - 9"	Limestone, dark gray, dense, hair-line vertical fractures, bleeding oil slightly.
4181' - 9" - 4183' - 4"	Limestone, fossiliferous, poor vugular porosity, hair-line vertical fractures, bleeding oil slightly.
4183' - 4" - 4185' - 0"	Limestone, gray, dense.
4185' - 0" - 4186' - 2"	Shale, dark gray.
4186' - 2" - 4189' - 0"	Limestone, gray dense.
4189' - 0" - 4190' - 8"	Shale, black.
4190' - 8" - 4194' - 6"	Limestone, gray, dense, vertical fractures.
4194' - 6" - 4195' - 0"	Shale, black, crumbly.

Halliburton DST No. 5, 4148-4195: Open 2 hours, good steady slightly diminishing blow throughout, recovered 60 feet of oil and gas cut mud, 60 feet of heavy oil and gas cut mud, 90 feet of muddy oil and 35 feet of oil. IBHP 1138#/30 mins. FBHP 855#/30 mins. IFP 26#, FFP 125#.

This oil came from the "W" zone, which was only 26" thick (4176' - 2" - 4178' - 4". as compared to 1000 feet of oil recovered in No. 1 Lundgren from 4 feet of the same zone, found 12 feet higher in No. 1 Lundgren.

4207-4211: "Y" Zone - Limestone, fair to good vugular porosity, fair to good stain (samples not examined wet). This interval was included in the Diamond Core in No. 1 Lundgren and the pay zone was absent and was not anticipated in No. 2 Lundgren.

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Halliburton DST No. 6, 4205-4250: Open 2 hours, weak, steady, slightly diminishing blow throughout test. Recovered 150 feet of muddy oil. IBHP 1167#/30 mins. BFHP 968#/30 mins. IFP 18#, FFP 71#.

CONGLOMERATE SECTION

4215-4220: Various colored cherts, gray, fine grained, tight sandstone clusters. No odor, no free,oil, no stains.

MISSISSIPPIAN SECTION

4220-4263: (St. Louis member) Limestone, dense, slightly cherty, occasional pieces with little or no porosity, showing some free oil and staining, probably representing shows of oil in minor fractures.

4263-68: (Spergen member) Dolomite, fine grained, sucrosic, good odor, good show of free oil, fair porosity and staining. (Measurements are adjusted 2 feet up the hole to conform with Welex measurements to 4250).

Since the show of oil and the dolomite drilled appeared to be as good or better than other wells in the pool, no drill stem test was taken and casing was run to the top of the Spergen dolomite pay section for an open hole completion.

Yours very truly,

Lee H. Cornell,
Petroleum Geologist.

LHC/mlb
encls.

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S & C Drilling, Inc. - Lundgren No. 2

Core Analysis, Core No. 1: 4110-4140
(Received too late to include in original report)

Sample Number	Depth Feet	Permeability Millidarcys	Porosity Percent	Oil Saturation	Water Saturation
1	4113' 6" - 4114	1.0	16.8	21.5	29.2
2	4114' 2" - 4114' 7"	19	13.4	17.2	30.6
3	4114' 7" - 4115	211	13.8	10.9	31.8
4	4115' 2" - 4115'7"	0.7	8.7	17.3	38.0

The above four samples are from the "S" Zone in the Pawnee limestone.

5	4134' 3" - 4134' 8"	139	8.0	13.8	22.6

Sample No. 5 is from the "T" Zone in the Ft. Scott limestone.

No samples from Core No. 2 were sent to the laboratory for analysis.

S & C Drlg. Co
Lundgren #2

Top of the Heebner Shale
Contour Interval - 10 ft.
By Lee H. Cornell

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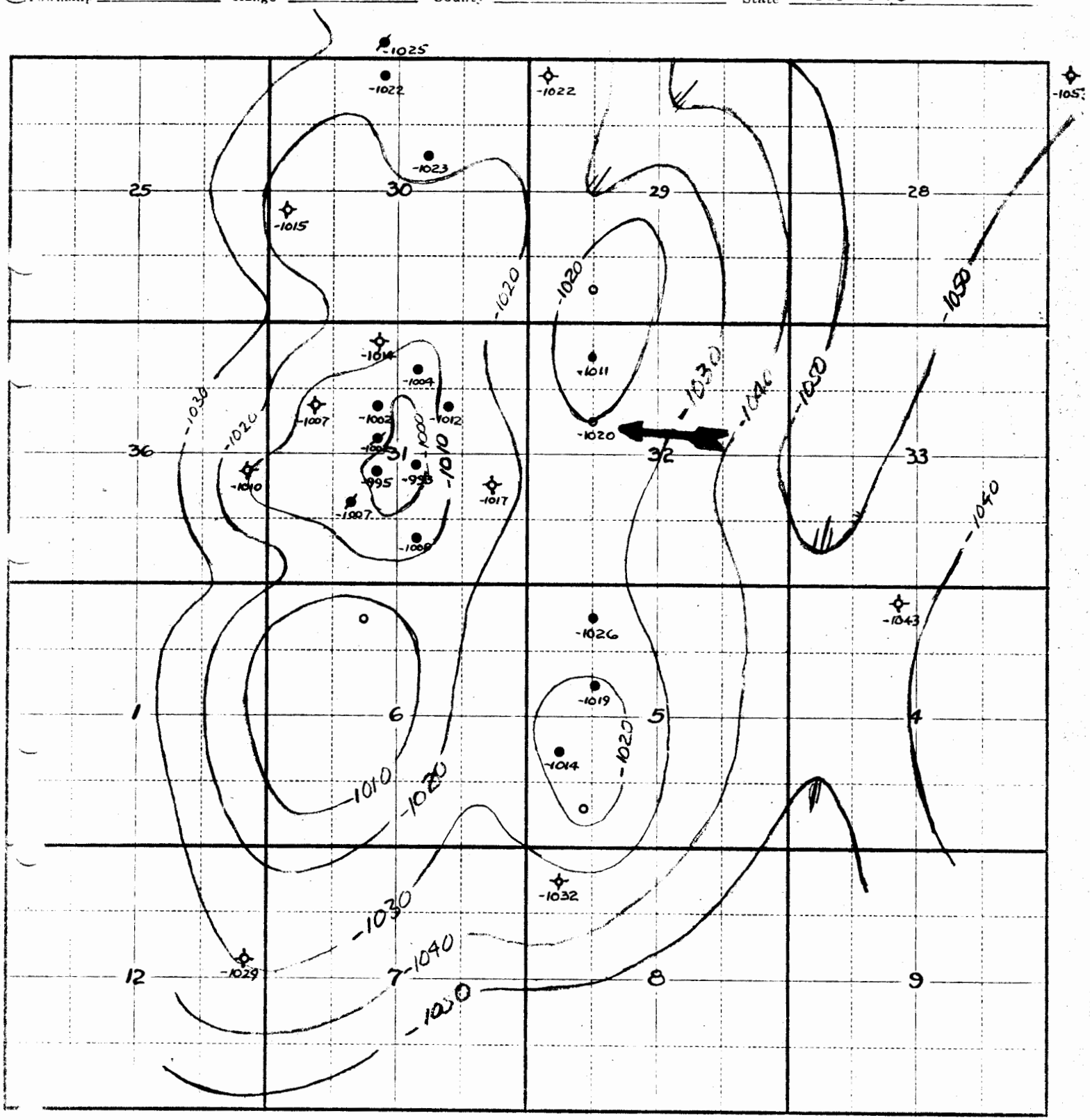
Township 14 & 15s Range 29 & 30 w County Gove State Kansas



S&C Drlg. Co.
Lindgren #2

Top of the Spergen Dolomite
Contour Interval - 10 ft.
By Lee H. Cornell

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Township 14 & 15s Range 29 & 30w County Gove State Kansas