OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS 66720 - PHONE (316) 431-2650

March 31, 1982

Inco Resources, Inc.
8100 Marty Suite 117
Overland Park, Kansas 66204

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary cores taken from the Brady Lease, Well No. 21, located in Franklin County, Kansas and submitted to our laboratory on March 24, 1982.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

Sanford A. Michel

SAM/kas

3 c to Overland Park, Kansas
2 c to Hutchinson, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Inco Resources, Inc. Lease Brady Well No. 21

Location

Section 33 Twp. 17S Rge. 21E County Franklin State Kansas

	Upper Squirrel	Lower Squirrel	Cattleman
Elevation, Feet			
Name of Sand			
Top of Core	573.0	655.0	707.0
Bottom of Core	593.0	663.0	717.6
Top of Sand * (Tested)	573.0	655.0	*710.4
Bottom of Sand * (Tested)	592.8	*658.0	715.5
Total Feet of Permeable Sand	8.8	0.4	2.4
Total Feet of Floodable Sand	4.0	0.0	0.9

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
	UPPER SQUIRREL SAND	
0 - 5	4.0	4.0
5 - 15	3.7	7.7
19 - 32	1.1	8.8
	LOWER SQUIRREL SAND	
0 - 2.5	0.4	0.4
	CATTLEMAN SAND	
0 - 7	1.5	1.5
60 - 83	0.9	2.4

Average Permeability Millidarcys	7.9	2.4	29.2
Average Percent Porosity	18.7	14.2	17.5
Average Percent Oil Saturation	40.6	34.4	38.4
Average Percent Water Saturation	40.7	56.8	45.9
Average Oil Content, Bbls./A. Ft.	588.	379.	527.
Total Oil Content, Bbls./Acre	5,464.	757.	1,264.
Average Percent Oil Recovery by Laboratory Flooding Tests	5.5	0.	3.7
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	81.	0.	57.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	323.	0.	51.
Total Calculated Oil Recovery, Bbls./Acre	See "Cal. Rec." Section	0.	See "Cal. Rec." Section

The core was sampled by a representative of Oilfield Research Laboratories. Air and KCC water were used as a drilling fluid. The core was reported to be from a non-virgin area.

In as much as only the Upper Squirrel sand and the Cattleman sand responded to flooding susceptibility tests, a calculated recovery is given for these sands only.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
	UPPER SQUIRREL SAND
573.0 - 574.4	Hard grayish brown calcareous shaly sandstone.
574.4 - 576.7	Hard gray calcareous shaly sandstone.
576.7 - 584.6	Gray shale.
584.6 - 585.1	Gray shale with brown sandstone partings.
585.1 - 586.7	Brown shaly sandstone with gray shale partings.
586.7 - 588.9	Brown slightly shaly sandstone with scattered gray shale partings.
588.9 - 589.2	Gray shaly sandstone.
589.2 - 589.8	Brown sandstone.
589.8 - 591.3	Brown slightly shaly sandstone.
591.3 - 592.8	Brown sandstone with scattered gray shale partings.
592.8 - 593.0	Gray shale.
	LOWER SQUIRREL SAND
655.0 - 655.4	Brown shaly sandstone.
655.4 - 656.6	Grayish brown very shaly sandstone.

656.6 - 657.6 Gray and brown laminated shale and sandstone.

657.6 - 658.0 Brown very shaly sandstone.

658.0 - 659.2 Gray and brown laminated shale and sandstone.

659.2 - 661.5 Gray shale with scattered brown sandstone partings.

661.5 - 663.0 Gray shale.

CATTLEMAN SAND

707.0 - 709.6 Gray calcareous shale.

709.6 - 710.4 Light brown shaly sandstone.

710.4 - 711.3 Brown sandstone.

711.3 - 714.0 Gray shale.

714.0 - 714.5 Gray and brown laminated shale and sandstone.

714.5 - 715.5 Grayish brown shaly sandstone.

715.5 - 717.6 Gray shale.

LABORATORY FLOODING TESTS

UPPER SQUIRREL SAND

The Upper Squirrel sand in this core responded to laboratory flooding tests, as a total recovery of 323 barrels of oil per acre was obtained from 4.0 feet of sand. The weighted average percent oil saturation was reduced from 46.1 to 40.6, or represents an average recovery of 5.5 percent. The weighted average effective permeability of the samples is 0.26 millidarcys, while the average initial fluid production pressure is 38.8 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 10 samples tested, 4 produced water and oil. This indicates that approximately 40 percent of the sand represented by these samples is floodable pay sand.

CATTLEMAN SAND

The Cattleman sand in this core responded to laboratory flooding tests, as a total recovery of 51 barrels of oil per acre was obtained from 0.9 feet of sand. The weighted average percent oil saturation was reduced from 36.3 to 32.6, or represents an average recovery of 3.7 percent. The weighted average effective permeability of the samples is 2.99 millidarcys, while the average initial fluid production pressure is 25.0 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 4 samples tested, 2 produced water and oil. This indicates that approximately 50 percent of the sand represented by these samples is floodable pay sand.

CALCULATED RECOVERY

It would appear from a study of the core data, that efficient primary and waterflood operations in the vicinity of this well should recover approximately 850 barrels of oil per acre from the Upper Squirrel sand, and approximately 340 barrels of oil per acre from the Cattleman sand. This is an average recovery of 213 barrels per acre foot from 4.0 feet of floodable sand from the Upper Squirrel sand, and an average recovery of 376 barrels per acre foot from 0.9 feet of floodable sand from the Cattleman sand.

These recovery values were calculated using the following data and assumptions:

	Upper Squirrel Sand	Cattleman Sand
Original formation volume factor, estimated	1.04	1.05
Reservoir water saturation, percent, estimated	25.0	20.0
Average porosity, percent	19.4	20.2
Oil saturation after flooding, percent	40.6	32.6
Performance factor, percent, estimated	45.0	55.0
Net floodable sand, feet	4.0	0.9

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Inco Resources, Inc. Lease Brady Well No. 21

Sample No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content Bbls. / A Ft.	Perm., Mill.	Feet of Sand		Total Oil Content	Perm. Capacity Ft. X md.
			Oil	Water	Total			Ft.	Cum. Ft.		
						UPPER SQUIRREL SAND					
1	573.5	20.2	45	25	70	705	3.5	1.4	1.4	987	4.90
2	584.7	11.3	31	66	97	272	Imp.	0.5	1.9	136	0.00
3	585.4	18.8	41	55	96	598	0.41	1.0	2.9	598	0.41
4	586.4	16.3	45	50	95	569	1.3	0.6	3.5	341	0.78
5	587.4	19.6	35	49	84	532	5.2	1.2	4.7	638	6.24
6	588.5	17.9	60	33	93	833	4.9	1.0	5.7	833	4.90
7	589.5	21.2	34	31	65	559	31.	0.6	6.3	335	18.60
8	590.4	18.7	36	39	75	522	6.9	1.5	7.8	783	10.35
9	591.5	18.4	33	42	75	471	14.	1.0	8.8	471	14.00
10	591.6	20.5	43	30	73	684	19.	0.5	9.3	342	9.50
						LOWER SQUIRREL SAND					
11	655.3	15.9	36	50	86	444	2.4	0.4	0.4	178	0.96
12	656.5	14.0	35	59	94	380	Imp.	1.2	1.6	456	0.00
13	657.8	12.8	31	57	88	308	Imp.	0.4	2.0	123	0.00
						CATTLEMAN SAND					
14	710.6	20.2	38	24	62	596	82.	0.5	0.5	298	41.00
15	711.2	20.1	34	29	63	530	60.	0.4	0.9	212	24.00
16	714.4	14.2	25	71	96	275	6.0	0.5	1.4	138	3.00
17	715.4	16.9	47	51	98	616	2.1	1.0	2.4	616	2.10

Oilfield Research Laboratories

SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Inco Resources, Inc. Lease Brady Well No. 21

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
		UPPER SQUIRREL SAND	
573.0 - 592.8	8.8	7.9	69.68
		LOWER SQUIRREL SAND	
655.0 - 658.0	0.4	2.4	0.96
		CATTLEMAN SAND	
710.4 - 715.5	2.4	29.2	70.10

Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.	Total Oil Content Bbls./Acre
			UPPER SQUIRREL SAND			
573.0 - 592.8	9.3	18.7	40.6	40.7	588	5,464
			LOWER SQUIRREL SAND			
655.0 - 658.0	2.0	14.2	34.4	56.8	379	757
			CATTLEMAN SAND			
710.4 - 715.5	2.4	17.5	38.4	45.9	527	1,264

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Inco Resources, Inc. Lease Brady Well No. 21

Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation			Volume of Water Recovered cc*	Effective Permeability Millidarcys**	Initial Fluid Production Pressure Lbs./Sq./In.
			%	Bbls./A. Ft.	%	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.			
					UPPER SQUIRREL SAND							
1	573.5	20.1	45	702	3	47	42	39	655	21	0.40	10
2	584.7	11.6	30	270	0	0	30	68	270	0	Imp.	-
3	585.4	18.8	41	598	5	73	36	61	525	16	0.15	45
4	586.4	16.0	46	571	0	0	46	50	571	0	Imp.	-
5	587.4	19.9	34	525	0	0	34	51	525	0	Imp.	-
6	588.5	18.0	60	838	11	154	49	46	684	12	0.22	50
7	589.5	21.3	34	562	3	50	31	53	512	4	0.15	50
8	590.4	18.2	37	522	0	0	37	40	522	0	Imp.	-
9	591.5	18.0	34	475	0	0	34	43	475	0	Imp.	-
10	592.6	20.4	43	681	0	0	43	32	681	0	Imp.	-
					LOWER SQUIRREL SAND							
11	655.3	16.0	36	447	0	0	36	55	447	50	0.82	35
12	656.5	14.1	35	383	0	0	35	60	383	0	Imp.	-
13	657.8	12.9	31	310	0	0	31	59	310	0	Imp.	-
					CATTLEMAN SAND							
14	710.6	20.2	38	596	5	78	33	53	518	60	1.05	30
15	711.2	20.2	34	533	2	31	32	58	502	330	5.40	20
16	714.4	14.5	24	270	0	0	26	70	270	0	Imp.	-
17	715.4	16.6	48	618	0	0	48	50	618	0	Imp.	-

Notes: cc—cubic centimeter.

*—Volume of water recovered at the time of maximum oil recovery.

**—Determined by passing water through sample which still contains residual oil.

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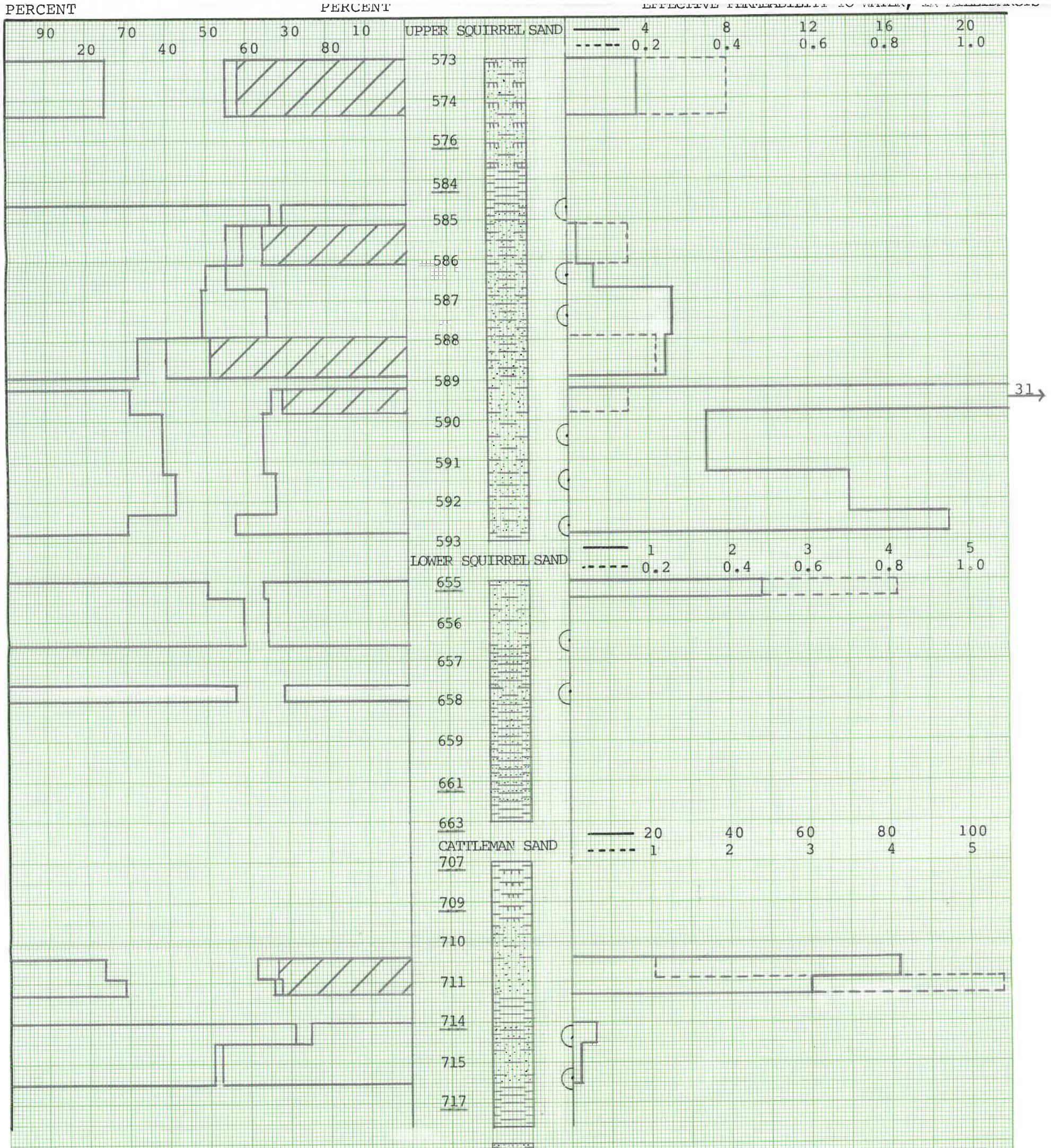
SUMMARY OF LABORATORY FLOODING TESTS

TABLE V

Company Inco Resources, Inc. Lease Brady Well No. 21

	UPPER SQUIRREL SAND	CATTLEMAN SAND
Depth Interval, Feet	573.0 - 592.8	710.4 - 715.5
Feet of Core Analyzed	4.0	0.9
Average Percent Porosity	19.4	20.2
Average Percent Original Oil Saturation	46.1	36.3
Average Percent Oil Recovery	5.5	3.7
Average Percent Residual Oil Saturation	40.6	32.6
Average Percent Residual Water Saturation	48.4	55.2
Average Percent Total Residual Fluid Saturation	89.0	87.8
Average Original Oil Content, Bbls./A. Ft.	689.	568.
Average Oil Recovery, Bbls./A. Ft.	81.	57.
Average Residual Oil Content, Bbls./A. Ft.	608.	511.
Total Original Oil Content, Bbls./Acre	2,756.	511.
Total Oil Recovery, Bbls./Acre	323.	51.
Total Residual Oil Content, Bbls./Acre	2,433.	460.
Average Effective Permeability, Millidarcys	0.26	2.99
Average Initial Fluid Production Pressure, p.s.i.	38.8	25.0

NOTE: Only those samples which recovered oil were used in calculating the above averages.



KEY:

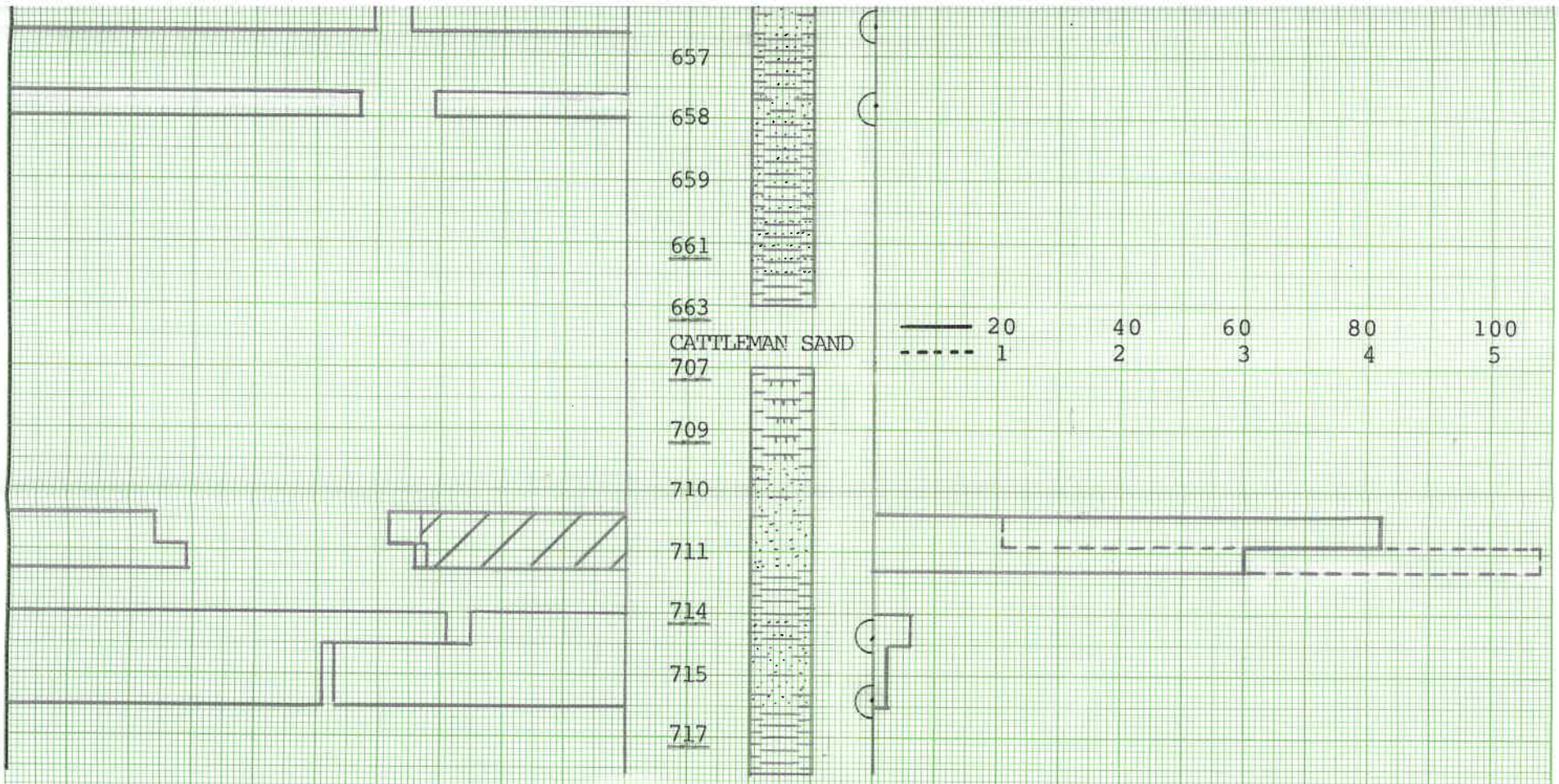
SANDSTONE	SHALE WITH SANDSTONE PARTINGS
SHALE	SANDSTONE WITH SHALE PARTINGS
CALCAREOUS SHALE	LAMINATED SANDSTONE AND SHALE
SHALY SANDSTONE	SHALY CALCAREOUS SANDSTONE
IMPERMEABLE TO WATER	SHALY SANDSTONE WITH SHALE PARTINGS
	FLOODPOT RESIDUAL OIL SATURATION

INCO RESOURCES, INC.

BRADY LEASE WELL NO. 21

FRANKLIN COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE PERCENT POROSITY	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY, MILLIDARCYS	CALCULATED OIL RECOVERY BBLS. /ACRE
		UPPER SQUIRREL SAND				
573.0 - 592.8	9.3	18.7	40.6	40.7	7.9	850 (PRIMARY AND WATERFLOODING)
		LOWER SQUIRREL SAND				



KEY:

SANDSTONE

SHALE

CALCAREOUS SHALE

SHALY SANDSTONE

IMPERMEABLE TO WATER

SHALE WITH SANDSTONE PARTINGS

SANDSTONE WITH SHALE PARTINGS

LAMINATED SANDSTONE AND SHALE

SHALY CALCAREOUS SANDSTONE

SHALY SANDSTONE WITH SHALE PARTINGS

FLOODPOT RESIDUAL OIL SATURATION

INCO RESOURCES, INC.

BRADY LEASE WELL NO. 21

FRANKLIN COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE PERCENT POROSITY	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY, MILLIDARCYS	CALCULATED OIL RECOVERY BBLS. /ACRE
UPPER SQUIRREL SAND						
573.0 - 592.8	9.3	18.7	40.6	40.7	7.9	850 (PRIMARY AND WATERFLOODING)
LOWER SQUIRREL SAND						
655.0 - 658.0	2.0	14.2	34.4	56.8	2.4	-
CATTLEMAN SAND						
710.4 - 715.5	2.4	17.5	38.4	45.9	29.2	340 (PRIMARY AND WATERFLOODING)

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CHANUTE, KANSAS MARCH, 1982 PDC