

WELLSITE REPORT OF
TOLTEC PEEL RIVER YT N-77
UNIT N. SECTION 77 GRID 6600 134 15
134 29' 12.00" W.L. 65 29' 39.00" N.La

WELL SUMMARY

Well Name:

Toltec Peel River YT N-77

Permittee, Licencee

United Canso Oil & Gas Ltd., and

or Lessee:

Alminex Limited.

Operator:

Toltec Mines Limited,

703 - 5th Street SW, Calgary 2, Alberta

Location:

Unique Well Identifier

300N-77-66-00-134-151

Lat. 65°56'46" Long. 134°29'12"

Universal Well Loc. Ref.

65.94611°N Lat. 134.48666°W Long.

Co ordinates:

Not Available.

Permit No.:

5714

Drilling Contractor:

(1) Connors Drilling Ltd., and

(2) Heath & Sherwood (Western) Limited,

Kirkland Lake, Ontario.

Rig No.:

Rig Type: Diamond Core Rig

Canadian Longyear Model 44

Drilling Authority:

No. 321

Dated - August 27, 1968.

Classification:

Wildcat

Elevation:

Ground 480'(?) *

K.B. 487'(?)

Spudded:

October 7, 1968

11:15 A.M.

Completed Drilling:

July 19, 1970

4:00 P.M.

Total Depth:

3683!

Well Status:

Abandon - Mechanical Failure.

Rig Released:

July 23, 1970

4:00 P.M.

^{*} Elevation from topographic map.

Hole Size T. D.:

0' - 39'

7 3/8"

39' - 2036'

3 7/8"

2036' - 3683'

3 1/4"

Casing:

Conductor Pipe-

39' of 7" set at 46' K.B.

with 18 sx cement.

Surface Casing -

421.08' J-55 9 1/2# set at 429.08' K.B. with 55 sx

cement plus 150# CaCl.

ZONE DRILLING

TERMINATED:

Devonian (Fort Creek Shale)

SAMPLES:

Samples in 10 foot intervals from 450 feet.

DRILLING FLUID:

Black Magic oil base fluid supplied by Milchem.

CORES:

Well was cored from 985' to T.D.

LOGS:

No logs were run due to deteriorated hole conditions.

ABANDONMENT PLUGS:

Cement Sx. Interval

Felt Plug

Plug 1 3000-3100

6

Not Req'd.

Plug 2 370- 470

10

365'

Surface casing was cut off 3' below ground level & a steel plate welded over open end of casing. A five sx cement plug was mixed and placed

over the steel plate.

Erected identification marker.

Geological Information

GEOLOGICAL INFORMATION

FORMATION

DEPTH

SUB-SEA EL.

FORMATION TOPS: Fort Creek Shale

30'?

+457

SAMPLE DESCRIPTION

450-60	Shale, dark grey to dark brown in part petroliferous pyritic, silty & micaceous, silty & pyritic shale (80-85%), siltstone, dark grey, argillaceous, hard. (10%), Pyrite - (3-5%) (Reconstruction of strata from samples would suggest stringers of silt and argillaceous silt in shale that is in part petroliferous & has stringers nodules & dissiminated pyrite. Deposition was in a reducing environment).
470	As above with slickenside on some shale.
480	As above less slickenside. Trace of shale showes carbonized "Grass".
500	Shale: dark grey to dark brown in part petroliferous pyritic, silty & micaceous 95% Siltstone: dark grey, highly argillaceous - (2-3%) Sandstone: white, fine to med. grained tightly cemented with siliceous cement - (trace).
510	Shale & Siltstone as above 95%. Microbreccia: white to pink with soft chalky matrix.
520	As above less microbreccia.
530	Shale & Siltstone as above plus trace of black sub rounded chert pebels up to 5 mm in diameter. Siltstone becoming more abundant.
540	Siltstone: dark grey, argillaceous, arenaceous, pyritic & calcareous - very hard (95%) Shale: as above (5%)
580	Siltstone & Shale as above in approx. equal amounts.
590	Shale: dark grey, hard, slightly silty & petroliferous in part. Bands of disiminated pyrite cyrstals common throughout samples. Trace of slickenside. (95%) Siltstone: dark tan to dark grey slightly calcareous & pyritic (5%)
600	Shale: as above trace of slickenside (96-98%) Chert: black - (noduel fragments) (trace) Siltstone: as above (trace)
620	Shale: as above (95%) Chert: black with very small milk-white dots. (5%)

630	Shale & Chert as above. Sandstone: dark grey brown, fine to very fine grained, cemented with calcite, argillaceous silty & petroliferus. (less than 5%)
650	Shale & Chert as above. Fracturs in shale are lines with clear quartz terminating in euhedral crystals with petroliferous inclutions.
660	Shale & Chert as above.
680	п п п
690	As above with limestone increasing to 10 to 15%. The limestone has higher percentage of earthy matrix than above sample.
700	Shale & Chert as above with trace of dog tooth calcite.
710	Shale & Chert as above.
750	Shale as above, but somewhat softer.
770	Shale as above, plus chert, dull black.
790	Shale as above. Limestone: dark brown, fine to very fine skeletal (?) Cemented with calcite, argillaceous & petroliferous (5%)
800	Shale & Limestone as above. L.S. increasing to (15%)
810	Shale as above.
	Samples between 830 & 950 are poor due to poor sampling of drill cuttings from the diamond bit. However, the cuttings were of shale as above with a trace of siltstone that may not have been in place.
950-80	Shale: dark grey, hard, petroliferous, pyritic & probably siliceous grading to chert (95%). Chert: dark grey, dult (may be siliceous shale) (5%).

Core No. 1 985-975 Rec. 10'
Shale: Dark grey to black, hard, petroliferous, pyritic with very small nodules (3 MM) & highly siliceous (previously logged as chert) grading to argillaceous chert? Core is highly fractured with hairline vertical & diagonal open fractures. Some exhibiting slickenside. Core is sporatically inbedded with inclusions seldom larger than 2 MM of tan fine to medium grained skeletal limestone with a chalky matrix. Trace of horizontal poker chip bedding.

Core No. 2 995-1005 Rec. 10' Shale as above.

Core No. 3 1005-1015 Rec. 10* As above.

Core No. 4 1015-1025 Rec. 10'
As above with fewer fractures
Fewer limestone inclusions & legs siliceous shale.

Core No. 5 1025-1035 Rec. 10' As above.

Core No. 6 1035-1045 Rec. 10' As above.

Core No. 7 1045-1055 *Rec. 10' As above.

Core No. 8 1055-1065 Rec. 10' As above.

Core No. 9 1065-1075 Rec. 10' As above.

Core No. 10 1075-1085 Rec. 10' As above.

Core No. 11 1085-1095 Rec. 10 $^{\circ}$ As above with increase in fractures.

Core No. 12 1095-1105 Rec. 10'
Shale as above with fewer fractures - Fractures for most part have held with coarse white blades of crystallin calcite. Core is spotted with thin bands (up to 1" thick) dark gray, highly argillaceous & silty meaceous fine to very fine angular.

Grained sandstone - tight.

Core No. 13 1105-1115 Rec. 10' As above.

Core No. 14 1115-1145 Rec. 10'
Shale as above. Little or no sand. Horiz. bedding.

Core No. 15 1125-1132 Rec. 6'
As above. Core jammed at 1132.

Core No. 16 1132-1142 Rec. 10'

As above with bands of argillaceous

Silty fine to med. angular grained sandstone.

Bedding Plane = 25° Change from horiz.

to 25° appears to be at 1137.

Core No. 17 1142-1152 Rec. 10'
4' shale: as above with dip changing from horiz.
to 25° at 1143.
6' sandstone: dark grey, fine to med. angular grained
silty & highly argillaceous & slightly
calcareous, tight & hard.

Core No. 18 1152-1162 Rec. 10'
2 : Siltstone: Dark grey, highly argillaceous
& siliceous, hard bedding dip of 25 slickenside
8 · Shale as above very hard. Horizontal bedding.
Shale appears silty in part. Highly siliceous - Chert

Core No. 19 1162-1172 Rec. 10' Shale as above sparsly fractured.

Core No. 20 1172-1182 Rec. 10' As Above.

Core No. 21 1182-1192 Rec. 10' As Above.

Core No. 22 1192-1202 Rec. 10' As Above.

Core No. 23 1202-1212 Rec. 10' As Above.

Core No. 24 1212-1219 Rec. 7'
As Above.

Core No. 25 1219-1227 Rec. 8' As above.

Core No. 26 1227-1237 Rec. 10' As Above.

Core No. 27 1237-1247 Rec. 10*
As Above.

Core No. 28 1247-1253 Rec. 2066

1260:

Shale: Dark grey, pyritic & petroliferous. Siliceous grading to chert. (sample fine grained. Cut with diamond plug.) Trace slickenside & pyrite.

1310:

As above plus trace of clear coarse crystal blades of calcite.

1320:

As above plus trace of dogtooth spar.

1340:

As above less spar.

1380:

As above plus dogtooth spar.trace.

1400:

As above less dogtooth spar trace.

1460:

As above plus dogtooth spar trace.

Core No. 29 1476-1486 Rec. 10'
Shale: dark grey, pyritic, petroliferous, siliceous grading to chert (?) with lenses or hard argillaceous.

Very fine grained, skeletal limestone, core sporatically fractured with short (up to one foot) vertical & diagonal fractures. Most fractures are open. Closed fractures are healed with white calcite. Horizontal bedding.

Core No. 30 7486-1496 Rec. 9.6' As above.

Core No. 31 1496-1506 Rec. 10'
As Above. Less fracturing & limestone.

Core No. 32 1506-1516 Rec. 9.7'
As Above. Slightly calcareous in part.

Core No. 33 1516-1526 Rec. 10'
As above. Recoming more calcareous.

Core No. 34 1526-1536 Rec. 10'
Shale: as above. Lime content of core is not uniform & can be seen to change within the paper thin caminations of the core.

Core No. 35 1536-1546 Rec. 9.5' As above.

Core No. 36 1546-1556 Rec. 10' As above.

Core No. 37 1556-1566 Rec. 9.7' As above.

Core No. 38 1566-1576 Rec. 10' As above.

Core No. 39 1576-1586 Rec. 10'
As above plus thin bands of scattered skeletal debris - may be crinoid fragments.

Core No. 40 1586-1596 Rec. 10'
Shale as above with streaks of very fine to fine grained, dark brown, highly argillaceous limestone may be skeletal - streaks up to 1' wide.

Core No. 41 1596-1606 Rec. 10'
As Above. Shale becoming softer & flaky in streaks near bise.

Core No. 42 1606-1616 Rec. 10' As Above.

Core No. 43 1616-1626 Rec. 10'
As Above.

Core No. 44 1626-1634 Rec. 8'
3' · Shale: Dark grey. Pyritic & calcareous alternations of paper thin soft & hard (siliceous)
5' · Limestone: As above showing false bedding plans dips up to 40°.

Core No. 45 1634-1644 Rec. 10'
3.4' Limestone: As above with false & cross bedding.
1.4' Shale: dark grey, calcareous, pyritic with scattered skeletal deris
1.2' Limestone: As above with flow structures.
3.6' Shale: Dark grey, pyritic, calcareous with alternating paper thin hard & thin paper thin layers.
:4' Limestone: As above.

Core No. 46 1644-1654 Rec. 10'
.7' Shale: As above.
1.8' Limestone: As Above.
4.4' Shale: As Above.
1.0' Limestone: As above.
2.1' Shale: As Above.

Core No. 47 1654-1664 Rec. 10'
3.0' Shale: As Above
1.7' Limestone: As Above
1.2' Shale: As Above
1.0' Limestone: As Above
.8' Shale: As Above
.9' Limestone: As Above
1.8' Shale: As Above

Core No. 48 1664-1674 Rec. 10'
3.8' Shale: As Above
0.5' Limestone: As Above
4.0' Shale: As Above
.5' Limestone: As Above
1.2' Shale: As Above

Core No. 49 1674-1684 Rec. 9.6'
1.0' Shale as above
0.8' Limestone: As Above
3.3' Shale: As Above
0.4' Limestone: As Above
4.1' Shale: As Above

Core No. 50 1684-1694 Rec. 10'
Shale: black, thinnly bedded with alternate layers of hard & soft platy layers; pyritic, non-calcareous for most part.

Core No. 51 1694-1704 Rec. 10'
Shale: As Above with a 5" stringers of limestone as above one foot from base of core.

Core No. 52 1704-1714 Rec. 10
Shale: As Above with 5" stringer of limestone as above 3' from top of core. Shale becoming softer in places.

Core No. 53 1714-1724 Rec. 10'
Shale: As Above with an eight inch limestone as above streak five feet from top of core. Shale slightly calcareous & becoming softer in part.

Core No. 54 1724-1734 Rec. 10'
Shale: As Above with 2.5' limestone (as above) streak
4½ feet from top of core.
Shale slightly calcareous.

Core No. 55 1734-1744 Rec. 10'
Shale: As Above with scattered thin (up to 4") bands of limestone as above. Some diagonal fracturing & slickenside.

Core No. 56 1744-1754 Rec. 9' As Above.

Core No. 57 1754-1764 Rec. 10'
Shale: dark gray, very slightly pyritic & slightly calcareous solft may be bentonitic in part.
Forms thin "poker chips" in part.
Few thin limestone (as above) stringers.

Core No. 58 1764-1768 Rec. 4' As Above.

Core No. 59

1768-1771 Rec. 3'
Shale: dark gray, thinnly bedded, slightly calcaeous & fairly hard but not as hard as the siliceous petroliferous shales higher in the section.

Core No. 60 1771-1781 Rec. 10'
Shale: dark gray, thinnly bedded, slightly calcareous, soft, bentonitic in part with thin stringers (up to 4") of microgranined highly argillaceous limestone.

Core No. 61 1781-1791 Rec. 10' As Above.

Core No. 62 1791-1801 Rec. 10'
As Above.

Core No. 63 1801-1811 Rec. 10'
As above, very little to no bentonite.

Core No. 64 1811-1821 Rec. 10' As Above.

Core No. 65

1821-1831 Rec. 10'

Shale: as above with hard calcareous bands throughout,

Shale harder with only trace of bentonitic shale.

Core No. 66

1831-1841 Rec. 10'
Shale as above with thin laminations (approx 1 mm) of micrograined highly argillaceous limestone showing cross bedding & flow structures. Limestone content between 20%-30%.

Core No. 67 1841-1851 Rec. 10* As Above.

Core No. 68 1851-1361 Rec. 10' As Above.

Core No. 69 1861-1871 Rec. 10' As Above.

Core No. 70 1871-1881 Rec. 10' As Above. Core No. 71 1881-1891 Rec. 10' As Above.

Core No. 72 1891-1901 Rec. 10' As Above.

Core No. 73 1901-1911 Rec. 10' As Above.

Core No. 74 1911-1921 Rec. 10' As Above.

Core Nc. 75 1921-1932 Rec. 10' (Plus 1' correction) As Above.

Core No. 76 1932-1942 Rec. 10'
As Above with flow structure more pronounced.

Core No. 77 1942-1952 Rec. 10' As Above.

Core No. 78 1952-1962'2" Rec. 10'2"

As Above with a little less limestone than in previous cores.

Core No. 79 1962'2"-1972'5" Rec. 10'3"

As Above with a little more limestone.

(5% to 10%)

Core No. 80 1972'5"-1982'6" Rec. 10'1" As Above.

Core No. 81 1982'6"-1993 Rec. 10'6"

As Above with very few limestone stringers (less than 5%)

Core No. 82 1993-2003 Rec. 10' As Above.

Core No. 83 2003-2013 Rec. 10'

Core No. 84 2013-2023 Rec. 10' As Above.

Core No. 85 2023-2033 Rec. 10'
Shale: as above with approx. 35% of core composed of micrograined highly argillaceous limestone laminated with the dark gray calcareous shale. _The laminations ranged from 1 mm. to 4 inches wide. Horizontal bedding prevails with some cross bedding & flow structures.

Core No. 86 2033-2042 Rec. 10' As Above with 5% limestone.

Core No. 87 2043-2053 Rec. 10' As Above less than 5% limestone.

Core No. 88 2053-2063 Rec. 10'
As Above. Limestone between 5-10%.

Core No. 89 2063-2073 Rec. 10' Shale as above. Limestone less than 5% Uniform bedding between 9° to 11° .

Core No. 90 2073-2083 Rec. 10' As Above.

Core No. 91 2083-2093 Rec. 10' As Above.

Core No. 92 2093-2103 Rec. 10'
As Above bedding between $-3^{\circ}-5^{\circ}$

Core No. 93 2103-2112 Rec. 10' As Above bedding between 9° & 12° One 4" band of tan dolomitic fine grained sparry limestone. Argillaceous limestone as above, less than 5%.

Core No. 94 2113-2123 Rec. 10'
As Above with argillaceous limestone making up
20-25% of core. 2 thin (3-5 mm) stringers of dolomitic
limestone as above. Horizontal bedding.

Core No. 95 2123-2133 Rec. 10'
Shale as above with trace of argillaceous limestone as above (less than 5%).

Core No. 96 2133-2143 Rec. 10' As Above.

Core No. 97 2143-2153 Rec. 10' Shale as above. (No limestone).

Core No. 98 2153-2163 Rec. 10' $\stackrel{\cdot}{\text{LS}}$ Above with a 5° bedding plane.

Core No. 99 2163-2173 Rec. 10' As Above.

Core No. 100 2173-2183 Rec. 10'
Shale as above with near horizontal bedding.

Core No. 101 2183-2193 Rec. 10' As Above.

Core No. 102 2193-2203 Rec. 10' As Above.

Core No. 103 2203-2213 Rec. 10' As Above with 10° - 12° bedding dip.

Core No. 104 2213-2223 Rec. 10' As Above.

Core No. 105 2223-2233 Rec. 10' As Above.

Core No. 106 2233-2243 Rec. 10' As Above.

Core No. 107 2243-2253 Rec. 10'

As Above with few thin bands of tan fine skeletal grained sparry slightly argillaceous & delomitic limestone three feet from base of core .

Horizontal bedding.

Core No. 108 2253-2263 Rec. 10'
As Above with the limestone making up less than 1%.

Core No. 109 2263-2268 Rec. 5'

Sha Shale as above with the limestone making up less than 1%. Cross bedding & flow structures.

Core No. 110 2268-2277 Rec. 9'
Shale as above with trace of limestone bedding plane of 18 degrees.

Core No. 111 2277-2287 Rec. 10'
As Above bedding plane horizontal to 12".

Core No. 112 2287-2297 Rec. 10' As Above.

Core No. 113 2297-2307 Rec. 10'
As Above with flow structures.

Core No. 114 2307-2317 Rec. 10'
As Above with diagonal bands of tan very fine grained argillaceous limestone in lower three feet of core.

Core No. 115 2317-2327 Rec. 10'
As Above with diagonal limestone as above throughout core (22 diagonal bands).

Core No. 116 2327-2337As Above (with 16 diagonal bands) bedding dip = 15°

- Core No. 117 2337-2347 Rec. 10'
 As Above (with 35 diagonal limestone bands)
 Bedding dip: 15
- Core No. 118 2347-2357 Rec. 10'
 Shale: dark gray, dull, calcareous, somewhat softer than shale above. There is no distinct bedding although core crumbles along the diagonal. Crumbling appears to be caused by depositional conditions that gives a "dumpping" streamer. Core is cut by 36 diagonally contourted have of tan very fine grained argillaceous limestone.
- Core No. 119 2357-2367 Rec. 10'
 Shale: dark gray, calcareous with numerous bands (tan argillaceous limestone. Bedding dip of 15°. The core also has "dumpping" structure as above. (with 62 diagonal limestone bands).
- Core No. 120 2367-2377 Rec. 10'
 As Above (with 32 diagonal limestone bands).
- Core No. 121 2377-2387 Rec. 10'
 As Above (with 27 diagonal limestone bands).
- Core No. 122 2387-2397 Rec. 10'
 As Above. (with 37 diagonal limestone bands).
- Core No. 123 2397-2407 Rec. 10!
 As Above. (with 19 diagonal limestone bands).
- Core No. 124 2407-2417 Rec. 10'
 As Above (with 5 diagonal limestone bands).
 One 8' open diagonal fracture 5' from top of core.
- Core No. 125 2417-2427 Rec. 10'
 Shale as above with cross bedding. Bedding dips between horizontal & 10° (with 16 diagonal limestone bands).
- Core No. 126 2427-2437 Rec. 10* Shale as above (with 5 diagonal limestone bands)
- Core No. 127 2437-2447 Rec. 10° Shale as above with 16° bedding dip & flow structures. (20 diagonal limestone bands).
- Core No. 128 2447-2457 Rec. 10'
 5.5' Shale as above (with 13 diagonal to horizontal limestone bands)
 4.5' Shale dark gray very hard, highly calcareous massive bedding.
- Core No. 129 2457-2467 Rec. 10'
 Shale: dark gray, calcareous, with thin bands of tan argillaceous limestone & thin bands of soft bentonitic shale. Gross bedding & flow structures.

Core No. 130 2467-2477 Rec. 10¹ As Above.

Core No. 131 2477-2487 Rec. 10' As Above with horizontal bedding.

Core No. 132 2487-2497 Rec. 10'
Shale: dark gray, calcareous with thin bands of micrograined, argillaceous, tan, limestone & a few specks & thin bands of tan very fine to coarse grained skeletal recrystallized, argillaceous limestone. Cross bedding & flow structures throughout core.

Core No. 133 2497-2507 Rec. 10' As Above.

Core No. 134 2507-2513 Rec. .6'
Shale: dark gray, calcareous with trace of limestone.
Bedding horizontal to approx. 3°.

Core No. 135 2513-2527 Rec. 4.5' Shale: as above.

Core No. 136 2527-2537 Rec. 10' As Above.

Core No. 137 2537-2547 Rec. 10' As Above.

Core No. 138 2547-2555'11" Rec. 8'11"
As Above. Bedding - horizontal with flow structures.

Core No. 139 2555'11"-2566 Rec. 10'1" As Above & cross-bedding.

Core No. 140 2566-2576 Rec. 10' As Above.

Core No. 141 2576-2586 Rec. 10' As Above.

Core No. 142 2586-2596 Rec. 10' As Above.

Core No. 143 2596-2606 Rec. 10' As Above.

Core No. 144 2606-2616 Rec. 10'
As Above.

Core No. 145 2616-2626 Rec. 10' As Above.

Core No. 146 2626-2636 Rec. 10'
As Above.

Core No. 130 2467-2477 Rec. 10' As Above.

Core No. 131 2477-2487 Rec. 10'
As Above with horizontal bedding.

Core No. 132 2487-2497 Rec. 10'
Shale: dark gray, calcareous with thin bands of micrograined, argillaceous, tan, limestone & a few specks & thin bands of tan very fine to coarse grained skeletal recrystallized, argillaceous limestone. Cross bedding & flow structures throughout core.

Core No. 133 2497-2507 Rec. 10' As Above.

Core No. 134 2507-2513 Rec. 6'
Shale: dark gray, calcareous with trace of limestone.
Bedding horizontal to approx. 3°.

Core No. 135 2513-2527 Rec. 4.5' Shale: as above.

Core No. 136 2527-2537 Rec. 10' As Above.

Core No. 137 2537-2547 Rec. 10' As Above.

Core No. 138 2547-2555'11" Rec. 8'11"
As Above. Bedding - horizontal with flow structures.

Core No. 139 2555'11"-2566 Rec. 10'1" As Above & cross-bedding.

Core No. 140 2566-2576 Rec. 10' As Above.

Core No. 141 2576-2586 Rec. 10' As Above.

Core No. 142 2586-2596 Rec. 10'

Core No. 143 2596-2606 Rec. 10' As Above.

Core No. 144 2606-2616 Rec. 10' As Above.

Core No. 145 2616-2626 Rec. 10' As Above.

Core No. 146 2626-2636 Rec. 10' As Above.

Core	No.	147	2636-2646	Rec.	10'
			Ac Above		

- Core No. 148 2646-2656 Rec. 10' As Above.
- Core No. 149 2656-2666 Rec. 10' As Above.
- Core No. 150 2666-2671 Rec. 5' As Above.
- Core No. 151 2671-2681 Rec. 10' As Above.
- Core No. 152 2681-2691 Rec. 10'
 As Above. (L.S. streaks wider)
- Core No. 153 2691-2701 Rec. 10' As Above.
- Core No. 154 2701-2711 Rec. 10' As Above.
- Core No. 155 2711-2721 Rec. 2' As Above.
- Core No. 156 2721-2731 Rec. 10'
 As Above with horizontal bedding.
- Core No. 157 2731-2741 Rec. 10'
 As Above. Becoming more calcareous.
- Core No. 158 2741-2751 Rec. 10'
 As Above with more streaks of tan micro-grained argillaceous limestone. Limestone approx. 20% of core.
- Core No. 159 2751-2761 Rec. 7.4' As above.
- Core No. 160 2761-2764 Rec. 2.4'

 As Above with only trace of limestone streaks.

 Less than 1%.
- Core No. 161 2764-2774 Rec. 7'
 As Above.
- Core No. 162 2774-2784 Rec. 10' As Above.
- Core No. 163 2784-2794 Rec. 10'
 As above with few diagonal stringers of micro-grained limestone. Bedding horizontal.

Core	No.	147	2636-2646	Rec.	10'
			As Above.		

- Core No. 148 2646-2656 Rec. 10' As Above.
- Core No. 149 2656-2666 Rec. 10' As Above.
- Core No. 150 2666-2671 Rec. 5' As Above.
- Core No. 151 2671-2681 Rec. 10' As Above.
- Core No. 152 2681-2691 Rec. 10'
 As Above. (L.S. streaks wider)
- Core No. 153 2691-2701 Rec. 10' As Above.
- Core No. 154 2701-2711 Rec. 10' As Above.
- Core No. 155 2711-2721 Rec. 2' As Above.
- Core No. 156 2721-2731 Rec. 10' As Above with horizontal bedding.
- Core No. 157 2731-2741 Rec. 10'
 As Above. Becoming more calcareous.
- Core No. 158 2741-2751 Rec. 10'

 As Above with more streaks of tan micro-grained argillaceous limestone. Limestone approx. 20% of core.
- Core No. 159 2751-2761 Rec. 7.4' As above.
- Core No. 160 2761-2764 Rec. 2.4¹
 As Above with only trace of limestone streaks.
 Less than 1%.
- Core No. 161 2764-2774 Rec. 7'
 As Above.
- Core No. 162 2774-2784 Rec. 10' As Above.
- Core No. 163 2784-2794 Rec. 10'
 As above with few diagonal stringers of micro-grained limestone. Bedding horizontal.

Core No. 164 2794-2804 Rec. 10'
As Above less diagonal streaks of limestone.

Core No. 165 2804-2814 Rec. 10'
As Above with thin open fractures in basal three feet.

Core No. 166 2814-2824 Rec. 10'
As above less fractures.

Core No. 167 2824-2834 Rec. 10' As above.

Core No. 168 2834-2842 Rec. 8'
As above becoming more calcareous in part.
Flow structures.

Core No. 169 2842-2852 Rec. 9.6'
As above with 4.5' foot section.
(2846-2850.5') composed of alternating layers between
1 mm & 6 mm thick of dark gray calcareous shale & tan
micro-grained argillaceous limestone.

Core No. 170 2852-2862 Rec. 4.7'
Shale as above with cross bedding with dips to 18°
& flow structures.

Core No. 171 2862-2872 Rec. 10' As Above.

Core No. 172 2872-2882 Rec. 10'
Shale: dark gray, calcareous with horizontal bedding.

Core No. 173 2882-2892 Rec. 10'
As above with several streaks of tan micro-grained argillaceous limestone & flow structures.

Core No. 174 2892-2902 Rec. 10' As Above.

Core No. 175 2902-2912 Rec. 10' As Above.

Core No. 176 2912-2922 Rec. 10' As Above.

Core No. 177 2922-2932 Rec. 10' As Above.

Core No. 178 2932-2942 Rec. 10' As Above.

Core No. 179 2942-2952 Rec. 10' As Above. Core No. 180 2952-2962 Rec. 10' As Above.

Core No. 181 2962-2972 Rec. 10' As Above.

Core No. 182 2972-2982 Rec. 10¹ As Above.

Core No. 183 2982-2992 Rec. 10' As Above.

Core No. 184 2992-3002 Rec. 10' As Above.

Core No. 185 3002-3012 Rec. 10'
As Above with frace of bentonitic shale & slickenside.

Core No. 186 3012-3022 Rec. 10³ As Above.

Core No. 187 3022-3032 Rec. 10' As Above.

Core No. 188 3032-3042 Rec. 10'
As Above less bentonitic shale. Tan limestone streaks as above more abundant. Approx. 10% of core.

Core No. 189 3042-3052 Rec. 10' As Above L.S. approx. 5% or less.

Core No. 190 3052-3062 Rec. 10'
As above with trace of bentonitic shale.

Core No. 191 3062-3072 Rec. 10'
As above with only occational L.S. streak.

Core No. 192 3077-3082 Rec. 10'
As above with few short (4"- 5") vertical fracture.
Shale more bentonitic.

Core No. 193 3082-3092 kec. 10'

Core No. 194 3092-3102 Rec. 10'
As Above with one open diagonal fracture at top of core lines with coarse clear euhedrals of calcite.

Core No. 195 3102-3112 Rec. 10'
Shale as above, with dump structures, that show irregular distorted bedding & crumbles when broken.

Core No. 196 3112-3122 Rec. 10' Shale as above.

Core No. 197 3122-3128 Rec. 5'
Shale: dark gray, slightly calcareous with few thin
L.S. stringers as above. Horizontal bedding. Trace
slicken side.

Core No. 198 3128-3137 Rec. 9'
Shale as above badly fractured throughout.

Core No. 199 3137-3147 Rec. 10'
Shale as above with fractures dieing out in lower four feet. Bedding approx. 12°.

Core No. 200 3147-3157 Rec. 10' Shale as above less fractures.

Core No. 201 3157-3167 Rec. 10' Shale as above, with diagonal fracture in bottom foot. Bedding approx. 4° .

Core No. 202 3167-3177 Rec. 10'
Shale as above no fracturing.
Bedding horizontal.

Core No. 203 3177-3187 Rec. 10'
Shale as above with flow structures & perhaps drag folding. Some slicken side.

Core No 204 3187-3197 Rec. 7'
Shale: as above, more calcareous. Horizontal bedding.
Horizontal & near horizontal slicken side.

Core No. 205 3197-3207 Rec. 10° As Above with $12^{\circ}-15^{\circ}$ bedding plane.

Core No. 206 3207-3217 Rec. 10'
As Above. Less conspicuous slicken side.

Core No. 207 3217-3227 Rec. 10'

Core No. 208 3227-3237 Rec. 10^4 Shale as above with diagonal & horizontal slicken side plane very abundant in lower three feet.

Core No. 209 3237-3247 Rec. 10' Shale as above with $12^{\circ}-15^{\circ}$ bedding plane with few diagonal (in bedding) slicken side planes in upper two feet.

Core No. 210 3247-3257 Rec. 10' Shale as above less conspicuous slicken side.

Core No. 228 3427-3437 Rec. 10' As Above.

Core No. 229 3437-3447 Rec. 10' As Above.

Core No. 230 3447-3457 Rec. 10' As Above.

Core No. 231 3457-3467 Rec. 10° As Above.

Core No. 232 3467-3477 Rec. 10' As Above.

Core No. 233 3477-3487 Rec. 10'
As above with open diagonal fractures in lower foot of core.

Core No. 234 3487-3491 Rec. 4' Shale as above less fracture.

Core No. 235 3491-3501 Rec. 10' Shale as above with few vertical fractures.

Core No. 236 3501-3503 Rec. 2' Shale as above.

Core No. 237 3503-3513 Rec. 10' Shale as above.

Core No. 238 3513-3517 Rec. 4' Shale as above.

Core No. 239 3517-3523 Rec. 6'
Shale, as above, (black with abundant medium grey bands, inclusions (50-50)

Core No. 240 3523-3533 Rec. 10'
Core essentially as above. In part clight dip.
Shale is micronucorceous. Horizontal bedding.

Core No. 241 3533-3553 Rec. 20* (a & b).

Pred. shale as above, with - 12" break, 5* from bottom.

1* limy shale, hard with pyrite and traces fine fossil remains. Crinoid dises?

Core No. 242 3553-3574 Rec. 20' (a & b)
Black shale as above high angle fracturing and horizontal wafers common. Wire line creeps a few inches each trip, making 3574 rather than 3573.

Core No. 243 3574-3594 Rec. 20' (a & b) 20' shale as above.

Core No. 211 3257-3267 Rec. 10' Shale as above trace diagonal slicken side.

Core No. 212 3267-3277 Rec. 10' As Above.

Core No. 213 3277-3287 Rec. 10' As Above.

Core No. 214 3287-3297 Rec. 10'

Core No. 215 3297-3307 Rec. 10' As above with a 4° bedding plane.

Core No. 216 3307-3317 Rec. 10' As Above.

Core No. 217 3317-3327 Rec. 10' As Above.

Core No. 218 332/-3337 Rec. 10'
Shale as above with a bedding plane dip of 20° - 25°
(cross-bedding & flow structure)

Core No. 219 3337-3347 Rec. 10 Shale as above with a bedding plane dip of $12^{\circ}-27^{\circ}$.

Core No. 220 3347-3357 Rec. 10 $^{\circ}$ Shale as above. Bedding horizontal to 12 $^{\circ}$.

Core No. 221 3357-3367 Rec. 10' As Above.

Core No. 222 3367-3377 Rec. 10'
As above with numerous thin bands of tan argillaceous micro-grained L.S. flow structures.

Core No. 223 3377-3387 Rec. 10' As Above.

Core No. 224 3387-3397 Rec. 10*
As Above.

Core No. 225 3397-3407 Rec. 10'
As above with vertical fractures sealed with white micro-crystallin calcite. Bedding appears horizontal with horizontal slicken side.

Core No. 226 3407-3417 Rec. 10'
As Above less fractures.

Core No. 227 3417-3427 Rec. 10'
As Above with horizontal & diagonal slicken side.

Core No. 244 3594-3614 Rec. 20' Same as above.

Core No. 245 3614-3634 Rec. 20' (a & b)
Shale as above, dense, compact, dark grey, separates into thin wafers.

Core No. 246 3634-3640 Rec. 6'
Shale, alt. bands hard & soft shale, bll plugged.

Core No. 247 3640-3657 Rec. 17' Shale, dark grey as above.

Core No. 248 3657-3669 Rec. 12'
Shale as above with thin bands blads shale.

Core No. 249 3669-3674 Rec. 5' Shale as above.

Core No. 250 3674-3682 Rec. 8'
Shale, dark grey, compact, hard, breaks into thin $\frac{\pm}{2}$ 1"
wafers, showing horizontal bedding between alternating hard med. grey & dark grey thin beds.

Core No. 251 3683 TD 3683

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ENGINEERING INFORMATION

CASING:

Conductor Pipe: 39' of 7" pipe set at 46'

with 18 sax cement

Surface Casing: 421.08' J-55 9 1/2# set at

429.08' K.B. with 55 sax cement

plus 150# CaCl.

MUD RECORD:

Black Magic (bbls.)

100

Black Magic (sax) 200

Add. 58 Diesel Gel

(sax) (bbls.) (sax)

LOST CIRCULATION	MATERIAL	CORRECTIVE
ZONES: *	LOST:	MEASURES:
54'	water	cemented hole with 15 sx
63'		
	water	cement, felt plug 39'
104'	water	mixed 2 sx gel
880'	14 bbls drilling mud	thickened mud, added 10 sx saw dust mud
942'	21 bbls drilling mud	
1250'		
1320'	2 bbls drilling mud	added saw dist to mud
30021	6 bbls drilling mud	thickened mud
3080'	12 bbls drilling mud	thickened mud & added saw dust
3140'	5 bbls drilling mud	thickened mud & added 2 sx saw dust
3149'	3 bbls drilling mud	added 1 1/2 sx saw dust & 3 sx quick seal
3274'	6 bbls drilling mud	added l sx saw dust & 5 sx quick seal
3440'	8 bbls drilling mud	thickened mud & added 3 sx quick seal
3491'	No Record	No Record
3501'	4 bbls drilling mud	added saw dust to mud
3513'		
3630	No Record	added l sx quick seal to mud

Lost Circulation Zones all in 'Fort Creek Shale' formation.

DEVIATION SURVEY:	Depth	Deviation
	1055'	1/20
	1760'	1/40
	2447'	1/40
	31271	3 1/2 ⁰

ABANDONMENT PLUCS:

1st plug: 3100' - 3000' with 6 sax plug down

at 8:05 a.m. July 22.

2nd plug: 470' - 370' with 10 sax plug down

at 4:00 p.m. July 22
Felt plug at 365' 8:30 a.m. July 23
Surface casing was cut off 3' below ground and steel plate welded over casing open end. A five sack cement plug was mixed and placed

over the steel plate.

DRILLING CONTRACTOR:

Connors Drilling Ltd. & Heath & Sherwood Drilling (Conners drilled to 3513 with their rig & crew. Heath & Sherwood furnished crew using the Conner's

rig from 3513 to T.D.)

DRILLING EQUIPMENT:

Draw Works: Canadian Longyear Model 44. Diamond core rig powered by one GMC 353 3 cylinder 48 H.P. Diesel.

Oilwell Model C-323 Triplex plunger pump

powered by one GMC 4 cylinder 52 H.P. Diesel.

Rods: 3900' NQ Rods.

160' H Rods.

Mast: Pre-fabricated wood.

ENGINEERING INFORMATION

CASING:

Conductor Pipe:

39' of 7" pipe set at 46' with

18 sax cement.

Surface Casing:

421.08' J-55 9 1/2# set at 429.08' K.B. with 55 sax

cement plus 150# Ca Cl.

MUD RECORD:

Black

100

Magic BBLS. Magic Sacks

200

Black Additive 58 Diesel Sacks

21

BBLS. Sacks

245

Gel 77

LOST CIRCULATION

ZONES:

54 63'

104

880' 942

1250'

1320'

30021

3080'

3140'

3491' 3501'

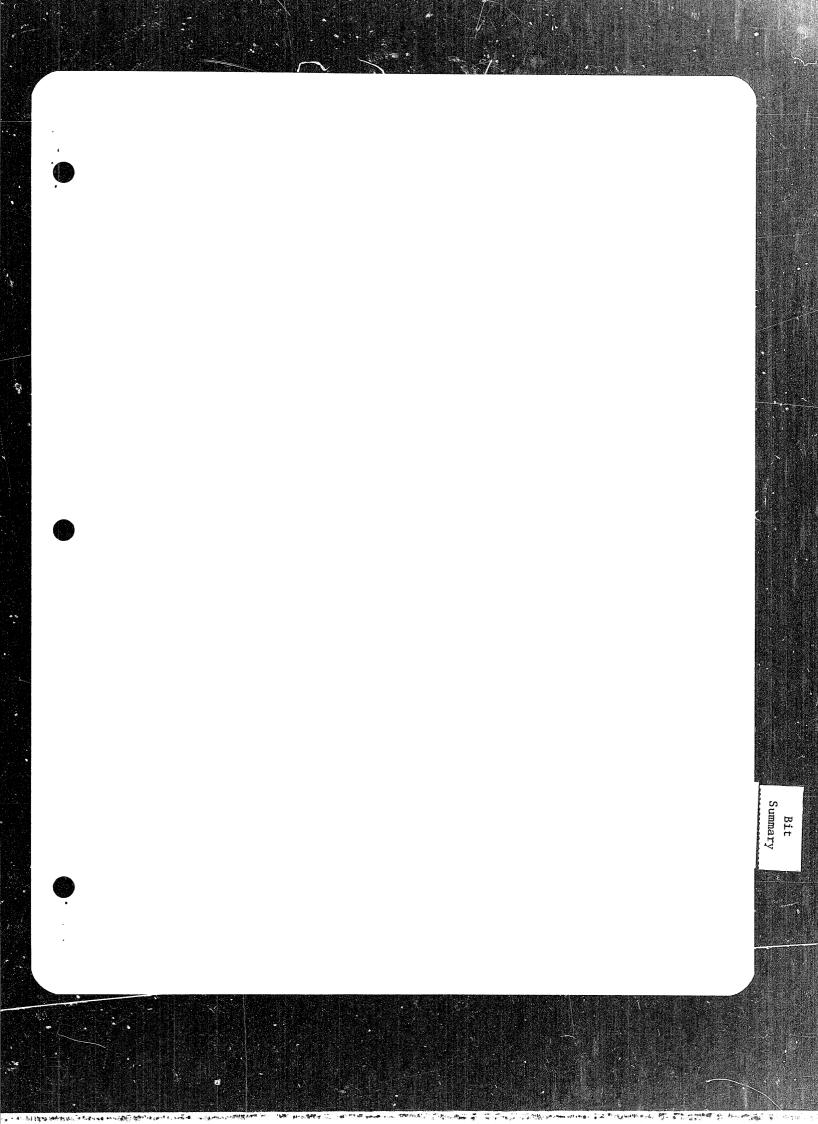
3513'

DEVIATION SURVEY:

Depth Deviation 1/2° 1/4° 1/4° 3 1/2° 1055'

1760' 2447

3127'



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