

## APPENDIX II

### Logs of wells A-05 to P-75

(including metric conversion, see text, p. 2 )

Borehole footage was derived from drill cuttings and adjusted to wireline log, except where (S) denotes sample data only, or (R) denotes reported data from Well History Report.

All elevations and the thickness of each rock unit are shown both in metres, as used throughout the text and figures, and in feet for easy reference to borehole footage.

Sample quality is to be taken as good except where otherwise noted.

Thicknesses of grouped rock units under the following time terms have been included to facilitate reference to isopach and superimposed structure contour maps (Figs. 10, 18):

Upper Paleozoic - refers to the Upper Devonian-Permian succession,  
Ford Lake to Jungle Creek Formations;

Devonian - refers to the Lower to Upper Devonian succession, Devonian Carbonates Assemblage and Horn River Groups and Road River Formation equivalents.

For any well which was drilled into, but not to the base of, either Ronning Group or Devonian Carbonates Assemblage, an estimated total thickness of the group has been included, if the thicknesses of the undrilled formations could reasonably be read from isopachs (Figs. 6, 10, and see text, p. 14 ).

1. A-05

Log of Richfield Point Separation No. 1  
Location: 67°34'06"N., 134°00'10"W.  
Elevation of Kelly Bushing: 19 m (62 ft)  
Well log prepared by the writer based on drill cuttings;  
depth adjusted to gamma ray-neutron log.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at bedrock, 15 m (50 ft) above sea-level.  
Thickness: 1540 m (5050 ft).

0-40

No samples

40(S)-5061

Sandstone, siltstone and shale: sandstone, grey, very fine- and fine-grained, chert/quartz/feldspar, silty; siltstone, grey, coarse-grained, micaceous; siltstone, brown-grey, argillaceous, micromicaceous; shale, dark grey, silty, micromicaceous; sandstone decreasing, shale increasing toward base.

DEVONIAN

Thickness: 570 m (1870 ft).

Horn River Formation

Top at 1524 m (4999 ft) below sea-level.  
Thickness: 41 m (134 ft).

5061-5195

Shale, black, bituminous, slightly pyritic

5185

Top Bluefish Member, thickness: 3 m (10 ft).

Devonian carbonates assemblage

Thickness: 529 m (1736 ft).

Borehole footage

Lithology

Hume Formation

Top at 1565 m (5133 ft) below sea-level.  
Thickness: 76 m (249 ft).

5195-5444

Limestone, grey, very argillaceous, with interbedded shale, brown-grey, calcareous, micromicaceous, grading downward to limestone, brown, dark grey-brown, white, argillaceous and silty, with some shale, grey, micromicaceous.

Landry Formation

Top at 1640 m (5382 ft) below sea-level.  
Thickness: 347 m (1140 ft).

5444-6584

Limestone, dark brown, grey brown, some buff, in part pelletoid, in part aphanitic and cryptograined, mostly argillaceous, grading downward to limestone, dark brown-grey, argillaceous, in part dolomitic.

Arnica Formation

Top at 1988 m (6522 ft) below sea-level.  
Thickness: 87 m (284 ft).

6584-6868

Dolomite, brown, buff, micro- to very finely and finely crystalline, in part sucrosic; some intercrystalline porosity; some limestone, grey-brown, cryptocrystalline, dolomitic, argillaceous.

Tatsieta Formation

Top at 2074 m (6806 ft) below sea-level.  
Thickness: 19 m (63 ft).

6868-6931

Limestone, pale grey-buff, aphanatic; some limestone, white, "chalky"; some shale, pale grey-green, micropyrritic.

Borehole footage

Lithology

CAMBRIAN LOWER DEVONIAN

Ronning Group

Thickness estimated at 1372 m (4500 ft).

Peel Formation

Top at 2094 m (6869 ft) below sea-level.  
Thickness 234 m (769 ft).

6931-c. 7700

Dolomite, pale buff, pale grey, micro- and very finely crystalline grading downward to dolomite, pale grey to buff-grey, aphanatic to micro-crystalline except finely crystalline around 7350-7450 ft; some interbedded shale, buff-grey, dark grey.

Mount Kindle Formation

Top at 2328 m (7638 ft) below sea-level.  
Thickness: >98 m (>323 ft).

c. 7700-8023

Dolomite, grey-brown to very dark grey, micro-crystalline, argillaceous; some limestone, dark brown, brown-grey, argillaceous. 7984.5-7993 ft - age: Silurian, probably late Llandovery (B.S. Norford, in Norford et al., 1973, p. 25). 8007 ft and 8017-8019 ft - age: Silurian (B.S. Norford, *ibid*).

Total depth: 2445 m

2. A-22

Log of Amoco A-1 Cranswick A-22

Location: 65°31'01"N., 131°48'55"W.

Elevation of Kelly Bushing: 768 m (2521 ft)

Well log prepared by the writer based on drill cuttings;  
depth adjusted to gamma ray-sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 69 m (228 ft).

Basal beds (Lower Cretaceous?)

384-454

Sandstone, medium grained, poorly sorted, very argillaceous (or very sandy shale); some granules and coarse sand grains of quartz, sub-rounded; sandstone, pale grey, fine-grained, poorly sorted with coarse grains; some glauconite; siltstone, brown-grey, coarse-grained, argillaceous.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 630 m (2067 ft) above sea-level.

Thickness: 84 m (276 ft).

M4 sandstone, "prodelta facies", (after Lutchman, 1977)

454-620

Siltstone, buff, coarse-grained, argillaceous.

620-714

Shale, very dark grey; siltstone, black, argillaceous.

714-730

Siltstone, brown-grey, coarse-grained, argillaceous.

UPPER DEVONIAN

Imperial Formation

Top at 546 m (1791 ft) above sea-level.

Thickness: 865 m (2838 ft).

730-1900

Shale, dark grey.

Borehole footage

Lithology

- 1900-3220 Shale, very dark grey, very silty, grading to argillaceous siltstone.
- 3220-3310 Shale, very dark grey, silty.
- 3310-3568 Siltstone, sandstone, shale: siltstone, brown-grey, coarse-grained; sandstone, grey-brown and grey, very fine-grained, very silty; shale very dark grey, silty; toward base some siltstone, dark brown-grey, argillaceous.

DEVONIAN

Thickness: 693 m (2272 ft)

Horn River Formation

Top at 319 m (1047 ft) below sea-level.  
Thickness: 86 m (281 ft).

- 3568-3810 Shale, black, hard, bituminous, pyritic.
- 3810 Bluefish Member, thickness: 12 m (39 ft).
- 3849 Shale, black, bituminous

Devonian carbonates assemblage

Thickness: 607 m (1991 ft)

Hume Formation

Top at 405 m (1328 ft) below sea-level.  
Thickness: 157 m (515 ft).

- 3849-4320 Limestone, grey-brown, pale grey-brown, silty, argillaceous, fossiliferous; some siltstone, dark brown, argillaceous, dolomitic, grading to silty dolomite; below about 4075 ft, with some shale, grey, calcareous.  
(Samples missing 4000-4170 ft and 4210-4300 ft).
- 4320-4364 Limestone, grey-brown, argillaceous, fossiliferous.

Borehole footage

Lithology

Landry Formation

Top at 562 m (1843 ft) below sea-level.  
Thickness: 331 m (1086 ft).

4364-5450

Limestone, brown, dark brown, grading downward through brown to buff, pale buff and brown, mainly aphanitic; at 5070-5200 ft, some dolomite, brown, buff, dark brown, very finely crystalline, sucrosic.

Arnica Formation

Top at 893 m (2929 ft) below sea-level.  
Thickness: 85 m (279 ft).

5450-5729

Dolomite, brown, dark brown, very finely crystalline, sucrosic.

Tatsieta Formation

Top at 978 m (3208 ft) below sea-level.  
Thickness: 34 m (111 ft).

5729-5740

Shale, pale blue-green, slightly calcareous, waxy, in part micropyrritic; limestone, pale buff, some white, aphanitic, variably dolomitic.

5740-5840

Limestone, pale buff, some white, aphanitic (thin flat chips in the samples); some shale, pale blue-green, as above.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness: 1064 m (3490 ft).

Peel Formation

Top at 1012 m (3319 ft) below sea-level.  
Thickness: 163 m (536 ft).

5840-6075

Dolomite, brown, dark brown, buff, microsucrosic, in part argillaceous grading to shale, black, dolomite, silty.

Borehole footage

Lithology

6075-6376

Dolomite, pale buff, buff, pale grey, brown, microsugrosic, possible with interbedded shale.

Mount Kindle Formation

Top at 1175 m (3855 ft) below sea-level.  
Thickness: 221 m (724 ft).

6376-7100

Dolomite, buff, brown grading downward to brown and dark brown, micro- and very finely crystalline; some chert, brown at base.

Franklin Mountain Formation

Top at 1396 m (4579 ft) below sea-level.  
Thickness: 680 m (2230 ft).

7100-7832

Dolomite, pale buff grading downward to buff and grey-buff, micro- and very finely crystalline, some finely crystalline.

Cherty member, thickness: 66 m (218 ft).

7832-8050

Dolomite, pale buff and buff, very finely to finely and medium crystalline; some chert, milky white, at top; traces of chert and some clear quartz throughout.

8050-8750

Dolomite, buff, pale buff and brown, micro-, very finely and finely crystalline; some white calcite in lower part.

8750-8950

Dolomite, brown and dark brown, very finely crystalline; some dolomite, pale buff, medium and coarsely crystalline.

8950-9050

Dolomite, creamy white and pale buff, medium and coarsely crystalline.

9050-9200

Dolomite, grey-buff, brown, microcrystalline.

9200-9330

Dolomite, buff, microcrystalline to aphanitic.



Borehole footage

Lithology

PROTEROZOIC

Top at 2075 m (6809 ft) below sea-level.

Orthoquartzite unit, thickness: >24 m (>80 ft).

9330-9410

Orthoquartzite, trace of pyrite.

9410

Total depth: 2869 m.

3. A-23

Log of Candel Mountain River A-23

Location: 65°42'14"N., 129°19'12"W.

Elevation of Kelly Bushing: 116 m (379 ft).

Well log prepared by the writer based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 421 m (1382 ft).

Basal beds (Lower Cretaceous?)

1418-1422

(Below dark shale with local concentrations of  
glauconite pellets)  
Sandstone, grey, coarse-grained, very poorly  
sorted, quartzose, sub-rounded, argillaceous,  
very glauconitic.

UPPER DEVONIAN

Imperial Formation

Top at 318 m (1043 ft) below sea-level.

Thickness: 213 m (700 ft).

1422-2122

Siltstone, brown, grey, dark grey: in part  
coarse-grained, very micaceous, grading to  
very silty sandstone; in part argillaceous,  
micromicaceous, grading to very silty shale;  
increasingly argillaceous downward, grading  
to shale, dark grey, silty, micromicaceous,  
with siltstone, grey, argillaceous.

DEVONIAN

Thickness: 763 m (2504 ft).

Horn River Group

Thickness: 274 m (900 ft).

Canol Formation

Top at 531 m (1743 ft) below sea-level.

Thickness: 18 m (58 ft).

Borehole footage

Lithology

2122-2180

Shale, black, bituminous, pyritic.

Allochthonous limestone unit, thickness: 10 m  
(32 ft).

2180-2212

Limestone, dark grey-brown, argillaceous.

Ramparts Formation

Top at 559 m (1833 ft) below sea-level.  
Thickness: 232 m (762 ft).

Reef member, thickness: 37 m (122 ft).

2212-2334

Limestone, brown, buff and white, reef, porosity filled with black bituminous material).

Platform member, thickness: 132 m (432 ft).

2334-2412

Carcajou marker, 24 m (78 ft) (many carvings).  
Limestone and shale: limestone, dark brown, very argillaceous; shale, dark grey, calcareous, micromicaceous.

2412-2766

Limestone, grey-brown to buff, microcrystalline, variably silty, in part grading to very calcareous siltstone.

Siltstone lentil, thickness: 63 m (208 ft).

2766-2974

Siltstone, grey-brown, argillaceous, very calcareous, micaceous, grading to very silty limestone.

Hare Indian Formation

Top at 791 m (2595 ft) below sea-level.  
Thickness: 15 m (48 ft).

Bluefish Member

2974-2998

Shale, black, non-calcareous.

2998-3022

Shale, black; some limestone, brown-black, very argillaceous and bituminous.

Borehole footage

Lithology

Devonian carbonates assemblage

Thickness: 489 m (1604 ft).

Hume Formation

Top at 806 m (2643 ft) below sea-level.

Thickness: 101 m (330 ft).

3022-3182

Limestone, brown, dark brown and buff-grey, microcrystalline, bioclastic; 3035-3070 ft, much shale, grey, dark grey, calcareous, micromicaceous.

3182-3352

Limestone, brown and dark brown to black, argillaceous and bituminous, with some interbedded dark grey shale; grades downward to limestone and shale: limestone, grey, brown and buff, bioclastic, in part silty and argillaceous; shale, grey, splintery, calcareous, micromicaceous, in part fossiliferous.

Landry Formation

Top at 906 m (2973 ft) below sea-level.

Thickness: 205 m (671 ft).

3352-4023

Limestone, brown, dark brown, buff, aphanitic, grading downward to brown, buff and white, aphanitic and pelletoid, in part "chalky" and with some white calcite filling fractures.

Arnica Formation

Top at 1111 m (3644 ft) below sea-level.

Thickness: 120 m (395 ft).

4023-4418

Dolomite, buff, brown, micro- to finely crystalline, grading downward to brown and dark brown, micro- to very finely crystalline, sucrosic with some good vugg and intercrystalline porosity.

Fort Norman Formation (basal tongue)

Top at 1231 m (4039 ft) below sea-level.

Thickness: 63 m (208 ft).

Borehole footage

Lithology

4418-4626

Dolomite, pale grey and grey to pale buff, buff and white, micro- to finely crystalline with some medium crystalline; some shale, pale grey-green, olive-green and grey, in part micropyrritic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 863 m (2830 ft).

Mount Kindle Formation

Top at 1294 m (4247 ft) below sea-level.  
Thickness: >144 m (>471 ft).

4626-5097

Dolomite, brown, buff, micro- to very finely crystalline, in part sucrosic; trace of shale, bright green, pyritic.

5097

Total depth: 1554 m.

4. A-37c

Log of At. North Circle River No. 1

Location: 66°26'10"N., 129°35'53"W.

Elevation of Kelly Bushing: 151 m (495 ft).

Well log prepared by the writer based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 60 m (196 ft).

Basal beds (Lower Cretaceous?)

120-160

(Below shale). Sandstone, pale grey, fine-grained, poorly sorted, quartzose, glauconitic, in part silty.

160-206

Sand, medium to coarse, quartz, angular to sub-rounded.

UPPER DEVONIAN

Imperial Formation

Top at 88 m (289 ft) above sea-level.

Thickness: 23 m (74 ft).

206-280

Shale, dark grey, micromicaceous; some siltstone, grey, argillaceous.

DEVONIAN

Thickness estimated at 736 m (2414 ft).

Horn River Group

Thickness: 287 m (942 ft).

Canol Formation

Top at 66 m (215 ft) above sea-level.

Thickness: 30 m (98 ft).

280-378

Shale, very dark brown-grey to black, bituminous, pyritic.

Borehole footage

Lithology

Ramparts Formation

Top at 36 m (117 ft) above sea-level.  
Thickness: 51 m (167 ft).

Platform member, thickness: 23 m (77 ft).

378-455 Limestone, pale buff to grey-buff, microcrystalline,  
in part silty.

Siltstone lentil, thickness: 27 m (90 ft).

455-545 Limestone and siltstone: limestone, pale buff-grey,  
silty; siltstone, pale grey, very calcareous,  
micromicaceous.

Hare Indian Formation

Top at 15 m (50 ft) below sea-level.  
Thickness: 206 m (677 ft).

545-1162 Shale, pale grey, silty, calcareous, micromicaceous,  
grading downward successively through grey and  
brown-grey to dark brown-grey, variably  
calcareous.

Bluefish Member, thickness: 18 m (60 ft).

1162-1222 Shale, black, non-calcareous; at base with limestone,  
buff to dark brown-grey, argillaceous, pyritic.

Devonian carbonates assemblage

Thickness: >318 m (>1044 ft).

Hume Formation

Top at 222 m (727 ft) below sea-level.  
Thickness: 113 m (372 ft).

1222-1300 Limestone, pale grey-buff, bioclastic.

1300-1550 Limestone and shale: limestone, pale buff, brown,  
grey, bioclastic, fossiliferous; shale, grey,  
calcareous, micromicaceous; grades downward to  
mainly shale with some limestone.

1550-1594 Limestone, pale buff, brown, white, microcrystalline,  
with some interbedded shale, brown-grey.

Borehole footage

Lithology

Landry Formation

Top at 335 m (1099 ft) below sea-level.  
Thickness: >205 m (>672 ft).

1594-2266

Limestone, brown, dark brown and buff, micro-crystalline, grading downward through some pelletoid beds to buff and pale buff, micro-crystalline to aphanitic.

2266

Total depth: 691 m.



5. A-37g

Log of R.O.C. Grandview Hills No. 1  
Location: 67°06'12"N., 130°52'30"W.  
Elevation of Kelly Bushing: 369 m (1212 ft)  
Well log prepared by the writer based on drill cuttings;  
depth adjusted to acoustic log.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at bedrock, 324 m (1062 ft) above sea-level.  
Thickness: 189 m (620 ft).

150-770

Shale, dark brown-grey, micromicaceous, in part  
silty; some siltstone, grey, argillaceous.

180 ft - age: Paleozoic, Devonian (Brideaux, W.W.  
in Cook and Aitken, 1975).

DEVONIAN

Thickness: 821 m (2692 ft).

Horn River Group

Thickness: 246 m (808 ft).

Canol Formation

Top at 135 m (442 ft) above sea-level.  
Thickness: 33 m (108 ft).

770-878

Shale, brown-black, bituminous, pyritic.

Ramparts Formation

Top at 102 m (334 ft) above sea-level.  
Thickness: 19 m (62 ft).

Sandy Member

878-940

Siltstone, brown, micaceous, slightly calcareous,  
oil-stained.

Borehole footage

Lithology

Hare Indian Formation

Top at 83 m (272 ft) above sea-level.  
Thickness: 194 m (638 ft).

940-1538

Shale, pale buff-grey, slightly calcareous, very micromicaceous, very silty, grading to siltstone, pale buff, slightly calcareous, very micaceous; becomes less silty with depth, grading to shale, pale buff-grey, slightly calcareous, very micromicaceous.

Bluefish Member, thickness: 12 m (40 ft).

1538-1578

Shale, black, calcareous, with some interbedded limestone, streaky brown and white, very argillaceous.

Devonian carbonates Assemblage (REPRESENTATIVE SECTION)

Thickness: 574 m (1884 ft).

Hume Formation

Top at 112 m (366 ft) below sea-level.  
Thickness: 90 m (296 ft).

1578-1874

Limestone, buff, grey-buff, some grey, some brown, microcrystalline, some fine-grained, in part silty, argillaceous and fossiliferous; at base, limestone very argillaceous, with shale, grey, flaky.

Landry Formation

Top at 202 m (662 ft) below sea-level.  
Thickness: 244 m (802 ft).

1874-2676

Limestone, mainly brown and buff, aphanitic to micrograined, partly pelletoid; trace dolomite, more near base.

Arnica Formation

Top at 446 m (1464 ft) below sea-level.  
Thickness: 179 m (586 ft).

2676-3262

Dolomite, brown, buff and grey-buff, micro- to finely crystalline, in part sucrosic; some porosity.

Borehole footage

Lithology

Tatsieta Formation (TYPE SECTION)

Top at 625 m (2050 ft) below sea-level.  
Thickness: 61 m (200 ft).

- 3252-3290 Limestone, pale buff, aphanitic, some white, "chalky"; dolomite, pale gray, very silty.
- 3290-3350 Limestone, pale buff, aphanitic; shale, pale green, micropyrritic.
- 3319-3349 (Cored), *see* Tassonyi, 1969, p. 191 for detailed description) - core contains rare dolomite with small bitumen-coated vugs; at 3330-3349, breccia of angular and sub-rounded limestone fragments in green, maroon and brown waxy shale.
- 3350-3462 Limestone, pale buff, mainly aphanitic; some limestone, white, "chalky" and some silty limestone.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1371 m (4498 ft).

Peel Formation

Top at 686 m (2250 ft) below sea-level.  
Thickness: 149 m (488 ft).

- 3462-3950 Dolomite, pale buff, cryptocrystalline, calcareous, grading downward through micro- and very finely crystalline to pale grey-buff, cryptocrystalline, calcareous, silty. 3549 ft - age: Middle Ordovician to Permian (B.S. Norford, *see* Appendix I, OS-7-BSN-1972).

Mount Kindle Formation

Top at 835 m (2738 ft) below sea-level  
Thickness: 232 m (760 ft).

- 3950-4710 Dolomite, brown, very finely to finely crystalline, in part sucrosic; near base, trace of white chert and clear calcite. 4219 ft - age: Middle Ordovician to Permian (B.S. Norford, *see* Appendix I, OS-7-BSN-1972).

Borehole footage

Lithology

Franklin Mountain Formation

Top at 1066 m (3498 ft) below sea-level.  
Thickness: >562 m (>1845 ft).

4710-5080

Dolomite, creamy white to buff, finely to coarsely crystalline.

Cherty member, thickness: 390 m (1280 ft).

5080-6360

Dolomite, creamy white to pale buff, some buff and brown, very finely to coarsely crystalline; some chert, white.

6360-6555

Dolomite, grey-buff to brown, very finely, some finely crystalline.

6555

Total depth: 1998 m.

6. A-42

Log of Amoco B-1 Cranswick, Y.T. A-42

Location: 65°41'13"N., 133°07'52"W.

Elevation of Kelly Bushing: 620 m (2034 ft).

Well log prepared by the writer based on drill cuttings;  
depth adjusted to sonic log below 6500 ft, to induction log  
above 6500 ft.

Borehole footage

Lithology

MESOZOIC

Thickness: 1108 m (3634 ft).

Basal beds (Lower Cretaceous?)

3626-3634

(Below shale). Sandstone, pale grey, pale buff, fine- to medium-grained and very fine-grained, poorly sorted, glauconitic; some sand, coarse, sub-rounded; some siltstone, brown-grey and some shale, dark grey, very glauconitic.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 488 m (1600 ft) below sea-level.

Thickness: 791 m (2596 ft).

3634-3840

Poor samples - sandstone(?).

3840-5855

Shale, very dark grey, platy - poor samples, may include sandstone as below

5855-6230

Sandstone, pale buff, pale grey and grey, fine-grained, siliceous; sandstone kaolinitic at the top.

UPPER DEVONIAN

Imperial Formation

Top at 1279 m (4196 ft) below sea-level.

Thickness: 209 m (686 ft).

6230-6613

Siltstone, grey, siliceous; shale, very dark grey, platy.

6613-6820

Shale, very dark grey, silty.

6820-6916

Siltstone, brown-grey, argillaceous; some pyrite.

Borehole footage

Lithology

DEVONIAN

Thickness: 1022 m (3353 ft).

Horn River Formation

Top at 1488 m (4882 ft) below sea-level.

Thickness: 52 m (172 ft).

6916-7088

Shale, black, bituminous, non-calcareous, pyritic.

7061

Top Bluefish Member, thickness: 8 m (27 ft).

Devonian carbonates assemblage

Thickness: 970 m (3181 ft).

Hume Formation (transitional)

Top at 1540 m (5054 ft) below sea-level.

Thickness: 389 m (1276 ft).

7088-7828

Limestone, grey-buff, grey and white, micrograined, in part silty and argillaceous, bioclastic, fossiliferous.

7828-8215

Shale, black, very calcareous, pyritic; some limestone, argillaceous.

8215-8364

Limestone and pyritic shale, grading downward to limestone, brown, white and pale grey, micrograined, slightly argillaceous, bioclastic, fossiliferous.

Landry Formation

Top at 1929 m (6330 ft) below sea-level.

Thickness: 457 m (1499 ft).

8364-9863

Limestone, brown to grey-buff, aphanitic and microcrystalline, argillaceous, with some shell fragments and some calcite; grades downward through successively dark grey, grey and grey-buff to, below 9700 ft, pale buff, in part dolomitic.

Borehole footage

Lithology

Arnica Formation

Top at 2386 m (7829 ft) below sea-level.  
Thickness: 41 m (133 ft).

9863-9996

Dolomite, grey, brown, microcrystalline; trace pyrite.

Tatsieta Formation

Top at 2427 m (7962 ft) below sea-level.  
Thickness: 83 m (273 ft).

9996-10269

Limestone, pale buff, aphanitic to microcrystalline, slightly dolomitic, in part white, "chalky".

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1153 m (3783 ft).

Peel Formation

Top at 2510 m (8234 ft) below sea-level.  
Thickness: 220 m (721 ft).

10269-10990

Dolomite, pale grey-buff changing downward to grey-buff, mainly microsugrosic, in part microcrystalline and argillaceous and in part calcareous grading to limestone.

Mount Kindle Formation

Top at 2730 m (8956 ft) below sea-level.  
Thickness: 232 m (762 ft).

10990-11752

Dolomite, buff-grey, micro- and very finely crystalline with some finely crystalline; some pyrite.

Franklin Mountain Formation

Top at 2962 m (9718 ft) below sea-level.  
Thickness: >685 m (>2248 ft).

11752-12324

Dolomite, buff-grey, some dark grey-brown, mainly microcrystalline, in part argillaceous and silty; some interbedded black shale.

Borehole footage

Lithology

Cherty member, thickness 61 m (200 ft).

12324-12524

Dolomite, very dark grey, microcrystalline, argillaceous and finely silty; trace chert, smoky (possible replacing oolite at 12370-12380 ft).

12524-12750

Dolomite, black, silty, argillaceous; dolomite, grey, very finely crystalline, silty; some thin black shales.

12750-12900

Dolomite, pale grey-buff, creamy white, finely and medium crystalline.

12900-13450

Dolomite, dark grey, brown-grey, microcrystalline, silty, argillaceous; some thin black shales; some calcite, coarsely crystalline.

13450-13800

Dolomite, creamy white, medium crystalline, grading downward through pale grey-buff, finely crystalline, to grey-buff, microcrystalline.

13800-14000

Dolomite, dark grey, micro- to very finely crystalline, some finely crystalline, silty; trace of dolomite, very sandy, at 13900-13910 ft.

14000

Total depth: 4267 m.



7. A-48

Log of Decalita Rond Lake No. 3

Location: 67°07'00"N., 128°22'36"W.

Elevation of Kelly Bushing: 271 m (889 ft)

Well log prepared by the writer based on drill cuttings.

Borehole footage

Lithology

MESOZOIC

Thickness: 29 m (95 ft).

Cretaceous

170(S)

175(R)-270(S)

Sand, very fine to very coarse, sub-rounded to rounded, quartzose; carbonaceous fragments; no glauconite seen.

DEVONIAN

Thickness: >99 m (>326 ft).

Horn River Group

Hare Indian Formation

Top at 189 m (619 ft) above sea-level.

Thickness: 66 m (215 ft).

270(S)-450(S)

Shale, grey and pale grey, grading downward to grey brown-grey, variably calcareous, micromicaceous.

Bluefish Member, thickness: 11 m (35 ft).

450(S)-485(R)

480(S)

Shale, dark brown-grey, non-calcareous.

Devonian carbonates assemblage

Hume Formation

Top at 123 m (404 ft) above sea-level.

Thickness: >34 m (>111 ft).

485(R)-596

Limestone, brown-grey, grey, grey-buff, bioclastic, fossiliferous, in part argillaceous and silty; trace of shale, grey, calcareous, micromicaceous.

596

Total depth: 182 m.

8. A-53

Log of Triad Hume River A-53

Location: 66°02'12"N., 129°09'46"W.

Elevation of Kelly Bushing: 63 m (206 ft).

Well log prepared by the writer based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 171 m (562 ft).

Basal beds (Lower Cretaceous?)

680-718 (Below glauconitic, pyritic shale) (Poor samples) -  
some sandstone, very fine-grained, glauconitic.

718-740 Coal

740-759 (Poor samples) - some sand, medium and coarse,  
quartz.

DEVONIAN

Thickness: 754 m (2511 ft).

Horn River Group

Thickness: 358 m (1174 ft).

Canol Formation

Top at 169 m (553 ft) below sea-level.

Thickness: 3 m (11 ft).

759-770 (Poor samples) - some shale, black, bituminous.

Allochthonous limestone unit, thickness: 4 m (12 ft).

770-782 (Sonic log determination).

Ramparts Formation

Top at 176 m (576 ft) below sea-level.

Thickness: 160 m (526 ft).

Reef member, thickness: 96 m (314 ft).

782-1096 Limestone, reef.

Borehole footage

Lithology

- Platform member, thickness: 36 m (118 ft).
- 1096-1126 Carcajou marker, 9 m (30 ft).  
Shale, black, bituminous, with some interbedded limestone, grey very argillaceous.
- 1126-1214 Limestone, buff, pale buff, white, bioclastic, in part fragmental.
- Siltstone lenti, thickness: 29 m (94 ft).
- 1214-1308 Limestone and siltstone: limestone, pale buff, some white, microcrystalline, in part fragmental, in part silty; siltstone, pale buff-grey, calcareous, argillaceous, micromicaceous, grading to shale, silty, calcareous.

Hare Indian Formation

- Top at 336 m (1102 ft) below sea-level.  
Thickness: 191 m (625 ft).
- 1308-1390 Shale and siltstone: shale, buff-grey, silty, calcareous; siltstone, grey-buff, calcareous, in part grading to silty limestone.
- 1390-1770 Shale, buff-grey, silty, calcareous, grading to siltstone, grey-buff, argillaceous, calcareous, micromicaceous.
- 1770-1888 Shale, dark brown-grey, calcareous.
- Bluefish Member: 14 m (45 ft).
- 1888-1933 Shale, black, non-calcareous; at base some limestone, dark brown, very argillaceous and bituminous.

Devonian carbonates assemblage

Thickness: 408 m (1337 ft).

Hume Formation

- Top at 526 m (1727 ft) below sea-level.  
Thickness: 97 m (317 ft).
- 1933-2104 Limestone, grey, brown, argillaceous and silty, with some interbedded shale, dark grey, calcareous, grading downward to limestone, brown, buff, microcrystalline, fossiliferous, with some interbedded shale, grey, calcareous.

Borehole footage

Lithology

2104-2250

Shale and limestone: shale, green-grey to dark grey, calcareous; limestone, grey-buff, grey, micrograined, argillaceous.

Landry Formation

Top at 623 m (2044 ft) below sea-level.  
Thickness: 177 m (582 ft).

2250-2703

Limestone, brown, dark brown and buff, aphanatic, in part slightly pyritic; in upper part some pelletoid beds.

2703-2758

Dolomite, brown, micro- to very finely crystalline, sucrosic; trace of porosity.

2758-2832

Limestone, pale buff, microcrystalline, in part with some porosity of possible organic origin.

Arnica Formation

Top at 800 m (2626 ft) below sea-level.  
Thickness: 102 m (335 ft).

2837-3167

Dolomite, brown, dark brown and buff, mainly microcrystalline; trace of vuggy porosity; some fractures filled with white calcite.

Fort Norman Formation (basal tongue)

Top at 903 m (2961 ft) below sea-level.  
Thickness: 31 m (103 ft).

3167-3270

Dolomite, creamy white, pale buff, pale grey and grey, micro- and very finely crystalline; some finely to medium crystalline beds with good intercrystalline porosity; some shale, pale green-grey, sandy (medium, rounded, quartz), in part pyritic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 906 m (2970 ft).

Borehole footage

Lithology

Mount Kindle Formation

Top at 934 m (3064 ft) below sea-level.  
Thickness: >162 m (>530 ft).

3270-3800

Dolomite, pale buff, buff, rare creamy white,  
mainly micro- to finely, rare medium, crystalline;  
trace of intercrystalline porosity.

3800

Total depth: 1158 m.

9. A-59

Log of Candel North Ramparts A-59

Location: 65°28'04"N., 130°39'47"W.

Elevation of Kelly Bushing: 580 m (1904 ft)

Well log prepared by the writer based on drill cuttings;  
depth adjusted to sonic and density logs.

Borehole footage

Lithology

MESOZOIC

Thickness: 1266 m (4153 ft).

Basal beds (Lower Cretaceous?)

4324-4355

(Below shale). Siltstone, dark brown-grey, micaceous, in part argillaceous; some coarse quartz sand.

4355-4398

Sandstone, fine-grained, poorly sorted, quartzose, glauconitic; siltstone, coarse-grained, glauconitic; some coarse quartz sand.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 760 m (2494 ft) below sea-level.

Thickness: 7 m (22 ft).

4398-4420

Siltstone, pale buff, coarse-grained, poorly sorted, slightly glauconitic.

UPPER DEVONIAN

Imperial Formation

Top at 767 m (2516 ft) below sea-level

Thickness: 685 m (2246 ft).

4420-6367

Siltstone and shale: siltstone, grey and brown-grey, in part argillaceous and in part coarse-grained; shale, dark grey silty; siltstone decreases downward and shale is darker grey.

6367-6666

Siltstone, brown, coarse-grained; sandstone, pale brown, very silty; siltstone, brown-grey, argillaceous; some shale, grey, silty.

Borehole footage

Lithology

DEVONIAN

Thickness: 716 m (2349 ft).

Horn River Group

Thickness: 142 m (467 ft).

Canol Formation

Top at 1451 m (4762 ft) below sea-level.  
Thickness: 77 m (254 ft).

6666-6920

Shale, black, silty, hard, bituminous with pyrite.

Ramparts Formation

Top at 1529 m (5016 ft) below sea-level.  
Thickness: 14 m (45 ft).

Siltstone lentil.

6920-6965

Siltstone, black, calcareous, grading to very silty limestone.

Hare Indian Formation

Top at 1543 m (5061 ft) below sea-level.  
Thickness: 51 m (168 ft).

6965-7090

Shale, grey, micromicaceous, grading downward to dark brown-grey, non-calcareous.

Bluefish Member, thickness: 13 m (43 ft).

7090-7133

Shale, black, calcareous, grading to limestone, brown and white, very argillaceous, at the base (much siltstone, black, calcareous in these samples are probably cavings).

Devonian carbonates assemblage

Thickness: 574 m (1882 ft).

Hume Formation

Top at 1594 m (5229 ft) below sea-level.  
Thickness: 129 m (423 ft).

7133-7556

Limestone, brown, pale buff and white, micrograined, fossiliferous, in part silty and argillaceous, some pyrite; at 7500-7520 ft, shale, grey, micromicaceous.

Borehole footage

Lithology

Landry Formation

Top at 1723 m (5652 ft) below sea-level.  
Thickness: 198 m (650 ft).

7556-8206

Limestone, buff, white, brown and dark brown, aphanitic and micrograined, in part pelletoid; possibly some interbedded shale, black, silty.

Arnica Formation

Top at 1921 m (6302 ft) below sea-level.  
Thickness: 225 m (738 ft).

8206-8944

Dolomite, pale buff to dark brown, micro- to very fine crystalline, some finely crystalline, in part sucrosic with some intercrystalline porosity.

Tatsieta Formation

Top at 2146 m (7040 ft) below sea-level.  
Thickness: 22 m (71 ft).

8944-9015

Limestone, buff, pale buff and white, aphanitic to microcrystalline, in part argillaceous and in part pyritic; some shale, pale green, siliceous; trace of siltstone, white, very calcareous.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 885 m (2903 ft).

Peel Formation

Top at 2167 m (7111 ft) below sea-level.  
Thickness: 34 m (111 ft).

9015-9126

Dolomite, pale grey, microcrystalline, grading downward to pale grey-buff to pale buff, microsucrosic, in part silty.



Borehole footage

Lithology

Mount Kindle Formation

Top at 2201 m (7222 ft) below sea-level.  
Thickness: 202 m (662 ft).

- 9126-9390 Dolomite, pale grey-buff, grey brown and brown, finely to medium crystalline; at 9210-9260 ft, some dolomite, dark brown, very finely crystalline with intercrystalline porosity; at 9180-9200, 9300-9320 ft, much white calcite.
- 9390-9788 Dolomite, grey-brown, micro- and very finely crystalline.

Franklin Mountain Formation

Top at 2403 m (7884 ft) below sea-level.  
Thickness: >222m (>727 ft).

Cherty member, thickness: >222 m.

- 9788-10070 Dolomite, buff, grey-buff, micro- and very finely crystalline, in part pyritic; some chert, milky white, pale buff.
- 10070-10110 Dolomite, pale grey-buff, finely to coarsely crystalline; at the top, much chert, pale buff.
- 10110-10130 Dolomite, creamy white, pale buff, microcrystalline to aphanitic; some chert, white.
- 10130-10515 Dolomite, creamy white, pale buff, micro- and very finely crystalline, in part finely and medium, rare coarsely, crystalline; some chert, white.
- 10515 Total depth: 3205 m.

10. A-73

Log of C.D.R. Tenien A-73

Location: 67°52'08"N., 130°43'22"W.

Elevation of Kelly Bushing: 140 m (458 ft)

Well log condensed from core description in Well

History Report, depth adjusted to sonic and gamma-ray-neutron logs; and from columnar section (2800-7344 ft) in Mackenzie, 1974.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at bedrock, 109 m (358 ft) above sea-level.  
Thickness: 113 m (370 ft).

1007-470

Shale, grey, micromicaceous.

DEVONIAN

Thickness: 793 m (2602 ft).

Horn River Group

Thickness: 223 m (733 ft).

Canol Formation

Top at 4 m (12 ft) below sea-level.  
Thickness: 157 m (516 ft).

470-986

Shale, dark grey to black, siliceous, bituminous,  
micromicaceous; some pyrite.

Hare Indian Formation

Top at 161 m (528 ft) below sea-level.  
Thickness: 66 m (217 ft).

986-1142

Shale, grey, micromicaceous, soft, grading downward  
through dark grey to dark brown-grey, non-  
calcareous.

Bluefish Member, thickness: 19 m (61 ft).

1142-1203

Shale, black, siliceous, calcareous below 1170;  
some pyrite.

Borehole footage

Lithology

Devonian carbonates assemblage

Thickness: 570 m (1869 ft).

Jume Formation

Top at 227 m (745 ft) below sea-level.

Thickness: 61 m (199 ft).

1203-1402

Limestone, grey and brown, microcrystalline, fossiliferous; some shale, dark grey, calcareous.

Landry Formation

Top at 288 m (944 ft) below sea-level.

Thickness: 191 m (628 ft).

1402-2030

Limestone, buff to brown, microcrystalline, in part pelletoid.

Arnica Formation

Top at 479 m (1572 ft) below sea-level.

Thickness: 235 m (770 ft).

2030-2213

Dolomite and limestone, microcrystalline.

2213-2431

Dolomite, brown, micro- and very finely crystalline.

2431-2656

Dolomite, as above with limestone.

2656-2800

Dolomite, microcrystalline, in part sucrosic.

Tatsieta Formation

Top at 714 m (2342 ft) below sea-level.

Thickness: 83 m (272 ft).

2800-2846

Shale, green, dolomitic, siliceous; shale, pale brown, very dolomitic, with large green shale inclusions; dolomite, grey to buff, dense, with green shale inclusions; shale, green-grey, very calcareous; much pyrite.

2846-3072

Limestone, pale brown, with interbedded shale, green, waxy, dolomitic.

Borehole footage

Lithology

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness: 1301 m (4270 ft).

Peel Formation

Top at 797 m (2614 ft) below sea-level.

Thickness: 230 m (756 ft).

3072-3828

Dolomite, mainly grey, pale brown and dark brown, banded, in part extensively burrowed; some shale, dark brown, dolomitic; some remains of coral, brachiopod, crinoid and gastropod. 3517 ft - age: probably Late Silurian, Ludlovian or Pridolian, (R. Thorsteinsson, see Appendix I, S-1-RT-1973).

Mount Kindle Formation

Top at 1027 m (3370 ft) below sea-level.

Thickness: 240 m (788 ft).

3828-4616

Dolomite, brown, dark brown and grey, in part finely crystalline and argillaceous, and in part medium and coarsely crystalline; silicified fossil remains of coral, crinoid, gastropod, bryozoa, and nautiloid; some nodular and bedded brown and white chert.

Franklin Mountain Formation

Top at 1267 m (4158 ft) below sea-level.

Thickness: 831 m (2728 ft).

4616-4998

Dolomite, pale brown, coarsely crystalline and sucrosic; secondary glauconite in upper few feet.

Cherty member, thickness: 358 m (1175 ft).

4998-6178

Dolomite, pale brown to dark brown, finely to coarsely crystalline, sucrosic, varyingly argillaceous, silty and sandy (floating rounded quartz sand and silt grains and floating chips of chert common in the upper part); chert, mainly white but also grey, brown and black, occurs throughout as thin beds and nodules; many vugs lined with silica as euhedral quartz crystals.

Borehole footage

Lithology

"Rhythmic unit", thickness: 288 m (945 ft).

6173-7118

Dolomite, pale and dark brown and dark grey, finely, medium and coarsely crystalline, sucrosic, varyingly argillaceous; bedding delineated by dark argillaceous bands and by thin partings of waxy green pyritic shale; green shale often as matrix material in dolomites with coarsely crystalline sucrosic texture.

"Cyclic unit", thickness: 69 m (226 ft).

7118-7310

Dolomite, grey and brown, finely crystalline, argillaceous; some thin shale, grey, dolomitic.

7310-7344

Dolomite, grey and brown, as above, with interbedded, shale, green, micropyrritic with some quartz silt, sand and fine conglomerate.

CAMBRIAN

Clastics-evaporites assemblage

Thickness: 98 m (323 ft).

Saline River Formation

Top at 2099 m (6886 ft) below sea-level.

Thickness: 87 m (284 ft).

7344-7506

Shale, grey, green, red; traces of siltstone, anhydrite and dolomite.

7506-7572

Anhydrite.

7572-7628

Siltstone, dark grey, dolomitic; shale, dark grey and black; some anhydrite.

Mount Cap Formation

Top at 2185 m (7170 ft) below sea-level.

Thickness: 12 m (39 ft).

7628-7667

Shale, dark grey and black, and siltstone, as above; at base, sandstone, dark red.

Borehole footage

Lithology

PROTEROZOIC

Top at 2197 m (7209 ft) below sea-level.

Dolomite unit, thickness >257 m (>843 ft).

7667-8510

Dolomite, pink to buff, microcrystalline, with some chert and siltstone, grading downward to dolomite, brown and grey with some red.

8510

Total depth: 2594 m.

11. B-06

Log of Shell Peel River Y.T. B-06A

Location: 66°35'10"N., 135°45'40"W.

Elevation of Kelly Bushing: 66 m (218 ft).

Well log prepared by the writer based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 324 m (1064 ft).

Basal beds (Lower Cretaceous).

1025-1094

(Below siltstone). Sandstone and siltstone: sandstone, fine-grained, poorly sorted, quartzose, glauconitic, with fair porosity; siltstone, grey, argillaceous, in part very glauconitic; some fragments of chert, white to pale grey (pebbles?). 1060-1090 ft - age: Lower Cretaceous with much reworked material (M.S. Barss; *see* Appendix I, CRS-5-MSB-1969).

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 267 m (876 ft) below sea-level.

Thickness: >733 m (>2406 ft).

(Sandstone markers implied after Lutchman, 1977).

1094-1960

Shale, dark brown-grey to black, in part silty.

(?M6 sandstone "delta plain facies"). 1094-1120, 1310, 1955 ft - age: Tournaisian (M.S. Barss; *see* Appendix I, CRS-5-MSB-1969).

1960-2072

Shale, as above; some thin quartzitic siltstone or sandstone beds.

2072-2305

Shale, as above.

(M5 sandstone, "delta plain facies").

2305-2470

Shale as above, and, at depths 2305-2320 ft, 2410-2420 ft, and 2450-2470 ft, very thin orthoquartzite or quartzitic siltstone or sandstone and very poorly sorted sandstone, conglomeratic sandstone and conglomerate.

Borehole footage

Lithology

2470-2616	Shale, as above. 2612 ft - age: Strunian (M.S. Barss; see Appendix I, CRS-5-MSB-1969).  (M4 sandstone, "delta plain facies").
2616-2791	Sandstone, pale grey, coarse-grained, very poorly sorted, kaolinitic, conglomeratic (pebbles of chert, white, pale buff, pale grey and pale green); some sandstone, grey, fine-grained, poorly sorted, quartzitic.
2791-2955	Shale, very dark grey to black.  (M3 sandstone, "delta fringe facies").
2955-3005	Orthoquartzite and quartzitic siltstone in black shale. 3005 ft - age: Strunian (M.S. Barss; see Appendix I, CRS-5-MSB-1969).
3005-3050	Shale, as above.  (M2 sandstone, "delta front facies").
3050-3320	Shale, very dark grey to black, silty, with thinly interbedded orthoquartzite and quartzitic siltstone and sandstone.
3320-3500	Shale, as above with thinly interbedded quartzitic siltstone. 3491 ft - age: Strunian (M.S. Barss; see Appendix I, CRS-5-MSB-1969).
3500	Total depth: 1067 m.



12. B-25

Log of Union McPherson B-25

Location: 67°14'01"N., 135°34'22"W.

Elevation of Kelly Bushing: 492 m (1615 ft).

Well log prepared by the writer based on drill cuttings;  
depth adjusted to density log.

Borehole footage

Lithology

MESOZOIC

Thickness: 76 m (250 ft).

Jurassic or Lower Cretaceous?

20-270(S)

Sandstone and shale: sandstone, pale grey, very poorly sorted, silty and in part with chert granules; shale, grey, micromicaceous.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 410 m (1345 ft) above sea-level.

Thickness: 943 m (3094 ft).

(Sandstone markers implied after Lutchman, 1977).

(M7 sandstone, "alluvial plain facies").

270(S)-850(S)

Siltstone, shale and sandstone: siltstone, grey, brown-grey, variably sandy, very sandy or argillaceous; shale, grey, brown-grey, micromicaceous; sandstone, brown-grey, poorly sorted, silty; some ironstone, sandy.

850-1706

Shale and siltstone: shale, dark grey and black, micromicaceous, in part silty; siltstone, grey and dark grey-brown, variably silty, rarely sandy, micromicaceous.

(1034-1478 ft - M5 sandstone, "delta plain facies").

(M4 sandstone, "delta plain facies").

1706-2040

Sandstone, siltstone and shale: sandstone, grey, very poorly sorted, in part conglomeratic (chert, white, buff, grey with traces of yellow and green), silty; siltstone, grey and brown-grey, variably sandy or argillaceous; shale, grey and dark grey, in part silty, micromicaceous.

Borehole footage

Lithology

- 2040-2126 Shale, dark brown-grey; some siltstone, grey and brown-grey, argillaceous.  
(M3 sandstone, "delta front facies"?).
- 2126-2788 Sandstone, siltstone and shale: sandstone, brown-grey, very poorly sorted, fine- to coarse-grained, silty and conglomeratic; siltstone, brown-grey, sandy and argillaceous; shale, brown-grey and black, micromicaceous.
- 2788-2915 Shale, dark brown-grey, micromicaceous; some siltstone, argillaceous.  
(M2 sandstone, "delta front facies"?).
- 2915-3079 Sandstone and siltstone: sandstone, buff-grey, very poorly sorted, very fine- to very coarse-grained with sub-angular granules of quartz and chert, white, pale grey and trace of green; siltstone, buff-grey, in part sandy and in part argillaceous, micromicaceous.
- 3079-3282 Shale, dark grey, flaky, micromicaceous; some siltstone, argillaceous.  
(M1 sandstone, ?).
- 3282-3364 Sandstone, buff-grey, very poorly sorted, very fine- to coarse-grained, quartz/chert, silty; some shale, black and some siltstone, dark brown-grey, micromicaceous; trace of puddingstone, brown.

UPPER DEVONIAN

Imperial Formation

Top at 533 m (1749 ft) below sea-level.  
Thickness: 1909 m (6262 ft).

- 3364-9626 Shale, dark grey and black, in part silty; some siltstone, grey, in part argillaceous, occasionally sandy; in the upper part, rare sandstone, fine- and medium-grained, quartz/chert, argillaceous.

Borehole footage

Lithology

DEVONIAN

Thickness: 611 m (2005 ft).

Horn River Formation

Top at 2442 m (8011 ft) below sea-level.

Thickness: 27 m (90 ft).

9626-9716

Shale, black, bituminous; limestone, buff and white, "chalky", argillaceous, some finely and medium granular; trace of chert, brown.

9708

Top Bluefish Member, thickness: 2 m (8 ft).

Devonian carbonates assemblage

Thickness: 548 m (1915 ft).

Hume Formation

Top at 2496 m (8101 ft) below sea-level.

Thickness: 79 m (260 ft).

9716-9976

Limestone, white to grey, predominantly finely granular, with "oolitic" appearance; some limestone, "chalky" and argillaceous (black, argillaceous residue), fossiliferous; some sparry calcite.

Landry Formation

Top at 2548 m (8361 ft) below sea-level.

Thickness: 340 m (1115 ft).

9976-10200(S)

(Poor samples). Limestone, brown, buff, aphanitic, some pelletoid; some shale, brown-grey, black (cavings?), micromicaceous.

10200-10400(S)

Limestone, dark brown, brown and buff, aphanitic, some fine-grained; some sparry calcite; some pyrite.

10400-11091

Limestone, brown-black, grey-buff and pale buff, micrograined, argillaceous.

Borehole footage

Lithology

Tatsieta Formation

Top at 2888 m (9476 ft) below sea-level.  
Thickness: 165 m (540 ft).

11091-11631

Limestone, buff, pale buff, some grey-buff, mainly aphanitic, in part pyritic; trace of shale, pale green-grey.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1149 m (3769 ft).

Peel Formation

Top at 3053 m (10016 ft) below sea-level.  
Thickness: 388 m (1272 ft).

11631-12903

Dolomite and limestone: dolomite, pale buff, pale grey, microcrystalline and some very finely crystalline, in part microsugrosic, in part silty; limestone, buff, aphanitic, some microcrystalline, and some "chalky", in part silty.

Mount Kindle Formation (limestone facies)

Top at 3441 m (11288 ft) below sea-level.  
Thickness: 60 m (197 ft).

12903-13100

Limestone, pale buff and white, finely crystalline and some "chalky"; limestone, pale buff, aphanitic to microcrystalline, dolomitic; some dolomite, pale buff, medium crystalline.

Franklin Mountain Formation

Top at 3501 m (11485 ft) below sea-level.  
Thickness: >143 m (>470 ft).

Cherty member, thickness: >143 m.

13100-13570

Dolomite, pale buff changing downward to creamy white, medium and coarsely crystalline; some clear quartz and trace of milky white chert; intercrystalline porosity.

13570

Total depth: 4136 m.

13. B-34

Log of Socony Birch Y.T. B-34

Location: 66°03'03"N., 136°51'18"W.

Elevation of Kelly Bushing: 668 m (2190 ft).

Well log prepared by the writer based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 291 m (954 ft).

Basal beds (Lower Cretaceous).

944-954

(Below shale). Shale, black, pyritic; sandstone, very fine- to fine-grained, sub-angular to sub-rounded. 944-954 ft - age: Early Cretaceous (M.S. Barss, *in* Norford et al., 1971, p. 7). 900-990 ft - age: Albian (T.P. Chamney, *in* Norford et al., 1973, p. 17).

UPPER PALEOZOIC

Thickness: >1359 m (>4459 ft).

Jungle Creek Formation

Top at 377 m (1236 ft) above sea-level.

Thickness: 232 m (760 ft).

954-c. 1370

Conglomerate (chert, grey, buff, brown, dark grey, white; carbonates; quartz); some sandstone, grey, very poorly sorted, chert/quartz, in part kaolinitic; trace of glauconite. 1298 ft - age: Permian (M.S. Barss, *in* Norford et al., 1971, p. 7).

c. 1370-1684

Sandstone, grey, fine-, medium- and coarse-grained, chert/quartz, poorly sorted, in part conglomeratic (granules and pebbles of chert, grey, dark grey, buff and smoky translucent); some siltstone, brown-grey, coarse-grained, argillaceous and some silty shale; trace of glauconite.

1684-1714

Shale, brown-grey, silty, slightly glauconitic; some sandstone, pale grey, fine-grained, poorly sorted, silty, in part calcareous.

Borehole footage

Lithology

Ettrairn Formation (transitional to  
Blackie Formation)

Top at 145 m (476 ft) above sea-level.

Thickness: 115 m (376 ft).

1714-c. 1890

Interbedded limestone and shale; limestone, grey, bioclastic, silty or sandy and in part argillaceous, fossiliferous, glauconitic; some spicular limestone; shale, brown-grey, in part very calcareous.

c. 1890-2090

Shale, brown-grey, calcareous, grading to and interbedded with limestone, grey, very argillaceous.

Blackie Formation

Top at 30 m (100 ft) above sea-level.

Thickness: 524 m (1719 ft).

2090-3809

Shale, dark brown-grey, in part calcareous; 2310-2324 ft - sandstone, very coarse-grained, sub-angular, chert (varicoloured and white)/quartz, pyritic; c. 2660-2710; 2900-2920 ft - limestone, pale buff to white, very fossiliferous; grades downward to shale, grey, brown-grey, fissile, micromicaceous; some very thinly bedded siltstone, siliceous, in part sandy. 2322-2330 ft - age: probably Middle Namurian (M.S. Barss, in Norford et al., 1971, p. 8).

Hart River Formation

Top at 493 m (1619 ft) below sea-level.

Thickness: 45 m (1489 ft).

3809-3840

Limestone and sandstone: limestone, grey-brown, buff and white, silty to sandy; some chert, grey with brown specks; sandstone, grey, brown and white, fine- to medium-grained, poorly sorted, in part siliceous and in part calcareous.

3840-4387

Limestone, dark grey-brown, brown, buff and white, some micritic, some microcrystalline, in part argillaceous, silty or sandy, in part skeletal; some shale, black, silty; trace of sandstone, calcareous.

Borehole footage

Lithology

Chance Sandstone Member

- 4387-4630 Sandstone, very poorly sorted, very fine- to very coarse-grained, angular chert, in part conglomeratic; some siltstone, siliceous; some limestone, micritic, argillaceous; some shale, dark brown-grey, silty.
- 4630-4707 Limestone, dark grey-brown to buff and white, micritic, in part argillaceous; some sandstone, poorly sorted, calcareous.
- 4707-c. 4820 Shale, dark brown-grey to black, silty, calcareous, grading to very argillaceous limestone.
- c. 4820-5298 Sandstone, limestone and shale: sandstone, very poorly sorted, mainly fine- to very coarse-grained, in part with chert granules and pebbles, and in part calcareous; limestone, mostly argillaceous, in part skeletal; some crinoid stems; shale, dark brown-grey, black, silty, calcareous.

Ford Lake Shale

Top at 947 m (3108 ft) below sea-level.  
Thickness: >35 m (>115 ft).

- 5298-5413 Shale, black, non-calcareous, with some interbedded limestone, argillaceous, fossiliferous and sandstone, quartzitic.
- 5413 Total depth: 1650 m.

14. B-57

Log of Decalta Rond Lake No. 5  
Location: 67°06'00"N., 128°24'55"W.  
Elevation of Kelly Bushing: 276 m (905 ft).  
Well log condensed from Well History Report.  
Sample quality very poor.

Borehole footage

Lithology

MESOZOIC

Thickness: ?

Basal beds (Cretaceous)

120-156(R)

Shale, black, carbonaceous; sandstone, very fine-grained, angular to sub-angular, quartzose.

DEVONIAN

Thickness: >123 m (>403 ft).

Horn River Group

Hare Indian Formation

Top at 228 m (749 ft) above sea-level.  
Thickness: 121 m (396 ft).

156(R)-526(R)

Shale, "grey to brown, limy", grading downward to "grey, micaceous, limy".

Bluefish Member, thickness: 8 m (26 ft).

526(R)-552(R)

Shale, "dark brown, petroliferous".

Devonian carbonates assemblage

Hume Formation

Top at 108 m (353 ft) above sea-level.  
Thickness: >2 m (7 ft).

552(R)-559

Limestone, "grey-brown, fragmental, coquinoid".

559

Total depth: 170 m.



15. B-62

Log of Socony North Cath Y.T. B-62

Location: 66°11'14"N., 138°41'53"W.

Elevation of Kelly Bushing: 540 m (1772 ft).

Well log prepared by the writer based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER PALEOZOIC

Ford Lake Shale

Top at bedrock, 534 m (1752 ft) above sea-level.  
Thickness: 694 m (2277 ft).

- |             |   |
|-------------|---|
| 20(S)-68(S) | Shale, dark grey to black, flaky to splintery.  |
| 68-220(S)   | Sandstone, very poorly sorted, quartz/feldspar/kaolin, with larger chert fragments (pebbles?), weathered.   |
| 220-420(S)  | Shale, dark brown-grey and black, in part silty, carbonaceous; some pyrite.   |
| 420-570(S)  | Sandstone, very poorly sorted, conglomeratic (chert, grey, buff, white, yellow, milky white); much kaolin infill and in part siliceous cement.  |
| 570(S)-1310 | Shale, dark brown-grey and black, carbonaceous; some siltstone, grey-brown, siliceous.  |
| 1310-1380   | Shale, black, silty; much chert, black, bedded(?).  |
| 1380-2297   | Shale, dark brown-grey to black, in part silty, micromicaceous; some carbonaceous remains; in the lower part some thin beds of siltstone, siliceous and sandstone, brown-grey, poorly sorted and with some coarse chert sand grains, siliceous. |

UPPER DEVONIAN

"Imperial"

Top at 160 m (525 ft) below sea-level.  
Thickness: 62 m (202 ft).

- |           |   |
|-----------|---|
| 2297-2499 | Shale, dark brown-grey to black, in part silty, micromicaceous. |
|-----------|---|

Borehole footage

Lithology

DEVONIAN

Thickness: 809 m (2654 ft).

Canol Formation

Top at 222 m (727 ft) below sea-level.

Thickness: 49 m (162 ft).

2499-2661

Shale, black, bituminous, pyritic.

Devonian carbonates assemblage

Thickness: 760 m (2492 ft).

Ogilvie Formation (upper part)

Top at 271 m (889 ft) below sea-level.

Thickness: 137 m (449 ft).

2661-2697

Limestone, grey, brown, argillaceous, silty, bioclastic.

2697-3110

Limestone, buff, white, brown, bioclastic, fossiliferous, some aphanitic.

Landry Formation

Top at 408 m (1338 ft) below sea-level.

Thickness: 463 m (1520 ft).

3110-4630

Limestone, brown, dark brown-grey, some buff, aphanitic and micrograined, in part argillaceous, grading downward to limestone, buff, brown, micrograined and aphanitic, in part dolomitic; some dolomite, pale grey, brown, microcrystalline; c. 4300-c. 4500 ft - traces of shale, pale green-grey.

Arnica Formation

Top at 871 m (2858 ft) below sea-level.

Thickness: 141 m (462 ft).

4630-5092

Dolomite, brown, buff, dark brown, microcrystalline, grading downward through dolomite, pale buff, micro- to finely and medium crystalline with some intercrystalline porosity and with some limestone, buff, micrograined, to dolomite, buff, very finely to medium crystalline.

Borehole footage

Lithology

Tatsieta Formation

Top at 1012 m (3320 ft) below sea-level.  
Thickness: 19 m (61 ft).

5092-5153

Limestone, buff, aphanitic to micrograined;  
much shale, pale green, micropyrritic, in  
part very pyritic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1839 m (6035 ft).

Peel Formation

Top at 1031 m (3381 ft) below sea-level.  
Thickness: 169 m (554 ft).

5153-5707

Dolomite, pale buff, some buff-grey, very finely  
to medium crystalline, grading downward  
through dark brown and black, microcrystalline,  
and argillaceous, to buff and brown, micro-  
to medium crystalline, with some dark brown,  
argillaceous and in part with some black  
shale.

Mount Kindle-Road River transitional unit

Top at 1199 m (3935 ft) below sea-level.  
Thickness: 147 m (481 ft).

5707-5946

Shale, black, calcareous; some limestone, brown,  
micrograined, and buff-grey, argillaceous.

5946-6052

Limestone and chert: limestone, black and dark  
brown-grey, micrograined, argillaceous and  
silty, in part dolomitic, grading to dolomite;  
chert, brown-black, some pale brown and smoky  
translucent; some shale, black, calcareous.  
6037.5-6039 ft - age: Silurian to Middle  
Devonian; 6040 ft - age: Silurian, Wenlock.  
(B.S. Norford, in Norford et al., 1971, p. 22).

6052-6188

Limestone, black, dark grey, micrograined,  
argillaceous; some shale, black, calcareous;  
some pyrite.

Borehole footage

Lithology

Franklin Mountain Formation

Top at 1346 m (4416 ft) below sea-level.  
Thickness: >252 m (>828 ft).

?Cherty member, thickness: 39 m (129 ft).

- 6188-6317 Dolomite, limestone and chert: dolomite, buff, brown and dark brown, very finely and micro-crystalline; some limestone, buff, brown, aphanitic and micrograined; chert, brown, smoky translucent, brown-black.
- 6317-c. 6510 Dolomite, pale buff, finely to medium crystalline; dolomite, dark brown, micro-crystalline, in part argillaceous; some shale, black.
- c. 6510-c. 6800 Dolomite, creamy white, pale buff, finely to coarsely crystalline; at base, some faint oolite structure.
- c. 6800-7016 Dolomite, grey-brown, buff, micro- to medium crystalline; some dolomite, dark brown, argillaceous; some shale, black.
- 7016 Total depth: 2138 m.

16. C-18

Log of Canoe East Chance Y.T. C-18

Location: 66°07'09"N., 137°17'57"W.

Elevation of Kelly Bushing: 535 m (1756 ft).

Well log prepared by the writer based on drill cuttings;  
depth adjusted to sonic log

Borehole footage

Lithology

MESOZOIC

Thickness: 935 m (3066 ft).

Basal beds (Lower Cretaceous?)

2902-3032

(Below shale). Siltstone, brown-grey, coarse-grained, micaceous, in part argillaceous and with black shaly breaks.

3032-3066

Conglomerate: dark grey to black chert pebbles in silty, sandy matrix; some sandstone, pale grey, fine- to medium-grained, poorly sorted, silty, siliceous cement.

UPPER PALEOZOIC

Hart River Formation

Top at 399 m (1310 ft) below sea-level.

Thickness: >606 m (>1989 ft).

3066-3160

Limestone, dark brown and white, very argillaceous, highly fossiliferous; some interbedded black shale.

3160-3745

Limestone, grey-brown to pale grey-buff, mostly argillaceous, in part silty, some micritic and some microcrystalline.

3745-4202

Limestone, dark grey-brown, grey-buff, white, in part very argillaceous and fossiliferous, in part micritic, and in part sandy; some interbedded shale, black, calcareous; some sandstone, fine-grained, siliceous.

4202-4904

Limestone, grey-brown to buff and white, micritic, in part microcrystalline, rarely silty or sandy; traces of chert, grey with brown specks and smoky translucent.

Borehole footage

Lithology

Chance Sandstone Member

4904-5055

Sandstone, grey, pale grey, in part fine-grained, poorly sorted and siliceous, and in part fine- to very coarse-grained, conglomeratic (chert granules and pebbles), siliceous; traces of limestone, silty or sandy.

5055

Total depth: 1541 m.

17. C-24

Log of Socony Ellen Y.T. C-24

Location: 66°38'09"N., 137°50'08"W.

Elevation of Kelly Bushing: 415 m (1360 ft).

Well log prepared by the writer based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 1472 m (4828 ft).

Basal beds (Lower Cretaceous?)

4804-4828

(Below shale, siltstone, coal). Conglomerate of pebbles (chert, brown, milky white, grey, black) in siliceous sandy and silty matrix; some sandstone, pale grey, fine-grained, quartz/chert; trace of sand, coarse, rounded, quartz; trace of siltstone, buff-grey, fine-grained, with sand grains of quartz and glauconite; trace of pyrite.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 1057 m (3478 ft) below sea-level.

Thickness: >703 m (>2306 ft).

4828-4902

Sandstone, grey, fine-grained, quartzitic; siltstone, brown-grey, coarse-grained. 4861-4865 ft - age: late Paleozoic (T.P. Chamney, in Norford et al., 1973, p. 19).

4902-6223

Shale, dark brown-grey, micromicaceous; shale, black, carbonaceous, in part grading to coal; siltstone, brown-grey, argillaceous; some sandstone, quartzitic and some orthoquartzite (at 5500 ft). 5225-5860 ft - age: late Paleozoic (T.P. Chamney, *ibid*, p. 19) (*see* Appendix I, MES-2-TPC-1972).

6223-7134

Sandstone, siltstone and shale: sandstone, pale grey, fine-grained, poorly sorted, some very coarse-grained and conglomeratic (angular chert) quartzitic; some orthoquartzite; siltstone, brown-grey, some coarse-grained, some fine-grained and argillaceous; shale,

Borehole footage

Lithology

dark grey, micromicaceous; shale, black, splintery; some ironstone. 6646-6940 ft - age: late Paleozoic, ?Carboniferous. (T.P. Chamney, *ibid*, p. 20).

7134

Total depth: 2174 m.



18. C-31

Log of At. Shoals C-31

Location: 65°50'08"N., 128°51'45"W.

Elevation of Kelly Bushing: 88 m (288 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 142 m (466 ft).

Basal beds (Lower Cretaceous?)

691-716

(Below shale). Siltstone and sandstone:  
siltstone, grey, coarse-grained, with very  
thinly interbedded black shale; sandstone,  
pale grey, very fine-grained, poorly sorted,  
silty, quartzose, glauconitic; some sand-  
stone, very poorly sorted, fine- to coarse-  
grained, quartzose.

DEVONIAN

Thickness: 829 m (2720 ft).

Horn River Group

Thickness: 477 m (1566 ft).

Ramparts Formation

Top at 130 m (428 ft) below sea-level.

Thickness: 361 m (1184 ft).

Reef Member, thickness: 230 m (755 ft).

716-c. 1100

Limestone, buff, brown, white, bioclastic, in  
part fragmental, in the lower part, partly  
dolomitized.

c. 1100-1264

Limestone, buff, brown, aphanitic and micro-  
crystalline, grading downward to buff,  
brown, white, fragmental.

1264-1350

Interbedded limestone and shale: limestone,  
brown, dark brown, buff, fragmental, in part  
aphanitic and in part bioclastic with some  
reefoid; shale, dark grey, calcareous,  
micromicaceous; shale, black, bituminous.

Borehole footage

Lithology

- 1350-1471 Limestone and shale: limestone, buff-grey to grey-brown, silty and argillaceous; shale, grey and dark brown-grey, calcareous, very micaceous.
- Platform member, thickness: 131 m (429 ft).
- 1471-1546 Carcajou marker, 23 m (75 ft). Shale, grey, flaky, slightly calcareous; shale, brown-grey, silty, calcareous.
- 1546-1900 Limestone, buff-grey to grey-brown, silty, in part very argillaceous, grading to calcareous shale.

Hare Indian Formation

Top at 491 m (1612 ft) below sea-level.  
Thickness: 116 m (382 ft).

- 1900-2186 Shale, grey, brown-grey, in part silty, micromicaceous.
- Bluefish Member, thickness: 29 m (96 ft).
- 2186-2238 Shale, black, non-calcareous.
- 2238-2282 Shale and limestone: shale, dark brown-grey, very calcareous, grading to argillaceous limestone; shale, black, slightly calcareous; limestone, buff, bioclastic.

Devonian carbonates assemblage

Thickness: 352 m (1154 ft).

Hume Formation

Top at 608 m (1994 ft) below sea-level.  
Thickness: 112 m (368 ft).

- 2282-2452 Limestone, brown, buff, micrograined and aphanitic, fossiliferous; c. 2300-2350 ft: much shale, brown-grey, calcareous.
- 2452-2650 Limestone and shale: limestone, grey-buff, brown-grey, micrograined, in part silty and argillaceous; shale, pale grey, calcareous, micromicaceous.

Borehole footage

Lithology

Landry Formation

Top at 720 m (2362 ft) below sea-level.  
Thickness: 71 m (234 ft).

2650-2884

Limestone, brown, dark brown, grading downward to brown and buff, aphanatic and some pelletoid; some interbedded shale, green-grey.

Arnica Formation

Top at 791 m (2596 ft) below sea-level.  
Thickness: 120 m (394 ft).

2884-3278

Dolomite, buff, brown, mainly micro- to very finely crystalline, in part sucrosic with some intercrystalline porosity.

Fort Norman Formation

Top at 911 m (2990 ft) below sea-level.  
Thickness: 48 m (158 ft).

3278-3392

Anhydrite, buff, pale, some grey; some dolomite.

3392-3436

Dolomite and shale: dolomite, grey to pale grey, medium crystalline; dolomite, brown, microcrystalline; shale, pale grey-green, olive-green, grey, pale green, waxy, slightly pyritic; some dolomite, pale buff to pale grey, microsucrosic; some shale, buff-grey to dark grey, variably dolomite.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness: 823 m (2698 ft).

Mount Kindle Formation

Top at 960 m (3148 ft) below sea-level.  
Thickness: 169 m (554 ft).

3436-3990

Dolomite, buff, brown, micro- to finely crystalline, sucrosic, with some intercrystalline porosity, grading downward to dolomite, buff, pale buff, some pale grey, micro- to very finely crystalline; in the lower part, trace of cherty, milky white.

Borehole footage

Lithology

Franklin Mountain Formation

Top at 1128 m (3702 ft) below sea-level.  
Thickness: 653 m (2144 ft).

3990-4030

Dolomite, creamy white to pale buff, micro- to medium and coarsely crystalline; some shale, very pale green-grey, waxy, micro-pyritic.

Cherty member, thickness: 290 m (950 ft).

4030-4980

Dolomite, creamy white to buff, very finely to medium crystalline, grading downward through buff, brown, pale grey, micro- to very finely crystalline, to buff, very finely to finely crystalline; some chert throughout, white, pale buff, in part oolitic, and some clear quartz; very much chert at 4330-4480 ft.

4980-5909

Dolomite, buff, brown, pale buff, pale grey, micro- to very finely crystalline with some finely crystalline, grading downward to microcrystalline.

5909-6134

Dolomite, pale buff to buff-grey and brown, microcrystalline, in part argillaceous; some interbedded shale, grey, dolomitic; at 5970-6000 ft, dolomite, buff, microcrystalline, sucrosic with trace of porosity; near the base, some interbedded shale, grey-green.

CAMBRIAN

Clastics-evaporites assemblage

Saline River Formation

Top at 1782 m (5846 ft) below sea-level.  
Thickness: >112 m (>366 ft).

Upper clastic member, thickness: 28 m (92 ft).

6134-6226

Shale and dolomite: shale, purple, green, olive, brick-red, brown; dolomite, pale buff, brown, grey, microcrystalline; some siltstone, pale green-grey, quartzitic.

Borehole footage

Lithology

6226-6500

Salt member, thickness: >84 m (>274 ft).

Halite.

6500

Total depth: 1981 m.

19. C-33

Log of Chevron West Parkin Y.T. C-33

Location: 66°12'04"N., 137°21'56"W.

Elevation of Kelly Bushing: 520 m (1705 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 875 m (2872 ft).

Basal beds (Lower Cretaceous?)

2640-c. 2850

(Below shale). Siltstone, grey, coarse-grained, argillaceous, in part very glauconitic, in part grading to shale, dark grey, very silty; trace of quartz sand.

c. 2850-2872

Siltstone, green, gold and grey, more than 50 per cent glauconite and very pyritic; probably some interbedded shale.

UPPER PALEOZOIC

Hart River Formation

Top at 355 m (1166 ft) below sea-level.

Thickness: >381 m (>1251 ft).

Chance Sandstone Member (2872-3500 ft).

2872-2930(R)

Sandstone and conglomerate with some shale and limestone.

2930-2962

Sandstone, pale grey, very poorly sorted, fine- to coarse-grained, chert/quartz, siliceous cement; some limestone, very argillaceous.

2962-3192

Limestone, dark brown-grey to buff-grey, very argillaceous and silty, grading to, and interbedded with, shale, calcareous, silty.

3192-3398

Limestone and chert: limestone, grey-brown to grey-buff and white, argillaceous and silty; chert, pale grey to creamy white, in part with brown specks and streaks, some grey to brown.

Borehole footage

Lithology

3398-3500

Sandstone, pale grey, very poorly sorted, very fine- to very coarse-grained and conglomeratic (varicoloured chert and some quartz, sub-angular to sub-rounded).

3500-4123

Limestone and chert: limestone, grey-brown to buff and white, micritic, in part micro-crystalline; chert, pale buff-grey with brown specks, brown, brown-grey, smoky translucent.

4123

Total depth: 1257 m.

20. C-60

Log of Skelly Arctic Red Y.T. C-60

Location: 66°49'00"N., 133°55'19"W.

Elevation of Kelly Bushing: 92 m (302 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 148 m (486 ft).

Basal beds (Lower Cretaceous?).

470-516

(Below siltstone). Sandstone, pale grey, very poorly sorted, fine-grained with coarse and very coarse grains, quartzose, glauconitic; siltstone, pale grey, glauconitic.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 65 m (214 ft) below sea-level.

Thickness: 35 m (116 ft).

(Sandstone markers after Lutchman, 1977).

(M2 sandstone, "prodelta facies").

516-530

Orthoquartzite, clear; some sandstone, fine- to medium-grained, quartzitic.

530-587

Shale, black, carbonaceous, with very thinly interbedded orthoquartzite; some pyrite; trace of coal.

(M1 sandstone, "delta front facies").

587-632

Siltstone, grey-brown, sandy and argillaceous; sandstone, buff, fine- to medium-grained, quartzitic, grading to orthoquartzite; shale, brown, silty; some ironstone, brown.



Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at 101 m (330 ft) below sea-level.  
Thickness: 1411 m (4630 ft).

632-5262

Shale, very dark grey, micromicaceous, in part silty; 1430-3070 ft, with siltstone, pale grey, coarse-grained and sandstone, very fine-grained; below 2070 ft: shale, as above, with siltstone, grey, brown, variably argillaceous; at the base, shale, brown-black, and siltstone, dark grey-brown, coarse-grained, argillaceous.

DEVONIAN

Thickness: 727 m (2384 ft).

Horn River Formation

Top at 1512 m (4960 ft) below sea-level.  
Thickness: 69 m (227 ft).

5262-5340

Shale and limestone: shale, black, bituminous; limestone, brown, bioclastic.

5340-5489

Shale, black bituminous; some pyrite.

5475

Top Bluefish Member, thickness: 4 m (14 ft).

Devonian carbonates assemblage

Thickness: 657 m (2157 ft).

Hume Formation

Top at 1581 m (5187 ft) below sea-level.  
Thickness: 105 m (345 ft).

5489-5834

Limestone, buff-grey, grey, white, in part argillaceous, fossiliferous; some shale, grey and dark brown-grey, calcareous.

Borehole footage

Lithology

Landry Formation

Top at 1686 m (5532 ft) below sea-level.

Thickness: 397 m (1302 ft)

- 5834-6712 Limestone, brown, buff, aphanitic with trace of pelletoid; in the lower part, some dolomite, buff and brown, in part sucrosic.
- 6712-6947 Dolomite, brown, dark brown, micro- and very finely crystalline, in part sucrosic with some intercrystalline porosity.
- 6947-7136 Limestone, dark brown, micrograined, in part argillaceous, fossiliferous; some dolomite, dark brown, microcrystalline.

Arnica Formation

Top at 2083 m (6834 ft) below sea-level.

Thickness: 124 m (406 ft).

- 7136-7542 Dolomite, buff, brown, microcrystalline, tight, grading downward to dark brown, very finely crystalline, sucrosic with some intercrystalline porosity.

Tatsieta Formation

Top at 2207 m (7240 ft) below sea-level.

Thickness: 32 m (104 ft).

- 7542-7590 Dolomite, pale grey, pale buff, microsucrosic, calcareous; some shale, black.
- 7590-7646 Limestone, buff, aphanitic, some white and "chalky"; some limestone, pale buff and pale green, argillaceous, micropyrritic; some shale, pale green, micropyrritic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1394 m (4575 ft).

Borehole footage

Lithology

Peel Formation

Top at 2238 m (7344 ft) below sea-level.  
Thickness: >269 m (>884 ft).

7646-8530

Dolomite, pale grey, pale buff, buff-grey,  
aphanitic, grading downward to micro-  
crystalline; possibly some thin shale,  
very dark grey.

8530

Total depth: 2600 m.

21. C-78

Log of Skelly Fort McPherson C-78

Location: 67°37'04"N., 134°14'20"W.

Elevation of Kelly Bushing: 20 m (65 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at bedrock, 23 m (75 ft) below sea-level.  
Thickness: 1863 m (6112 ft).

140(S)-6252

Sandstone, siltstone and shale: sandstone, grey, fine- to medium-grained and very fine- to fine grained, poorly sorted with coarse and very coarse grains, chert (grey, black, some green)/quartz/feldspar/some kaolin, mostly silty; siltstone, brown-grey, in part argillaceous, micaceous; shale, dark grey and black, silty, micromicaceous; shale increases, sandstone decreases downward.

DEVONIAN

Thickness: 510 m (1674 ft).

Horn River Formation

Top at 1886 m (6187 ft) below sea-level.  
Thickness: 37 m (120 ft).

6252-6372

Shale, black, bituminous, slightly pyritic;  
some chert, black, slightly pyritic.

6366

Top Bluefish Member, thickness: 2 m (6 ft).

Devonian carbonates assemblage

Thickness: 474 m (1554 ft).

Hume Formation

Top at 1922 m (6307 ft) below sea-level.  
Thickness: 77 m (254 ft).

Borehole footage

Lithology

6372-6626

Limestone, buff-grey, grey-brown, dark grey and black, in part argillaceous and silty, bioclastic and in part aphanitic and micrograined; some sparry calcite.

Landry Formation

Top at 2000 m (6561 ft) below sea-level.  
Thickness: 336 m (1104 ft).

6626-7085

Limestone, brown, dark brown, buff, aphanitic and pelletoid, in part argillaceous.

7085-7200

Limestone, brown, buff, white, pelletoid, micrograined; some shale, dark grey, calcareous.

7200-7500

Limestone, brown, buff, white, bioclastic, silty, in part dolomitic.

7500-7730

Limestone, pale buff, brown, bioclastic, aphanitic and microcrystalline, in part dolomitic; some dolomite, brown, microcrystalline; some silty and argillaceous beds and interbedded shale.

Arnica Formation

Top at 2336 m (7665 ft) below sea-level.  
Thickness: 27 m (99 ft).

7730-7820

Dolomite, brown, dark brown, buff, micro- and very finely crystalline, sucrosic with intercrystalline porosity; in the lower part some limestone, buff, microcrystalline, dolomitic.

Tatsieta Formation

Top at 2364 m (7755 ft) below sea-level.  
Thickness: 32 m (106 ft).

7820-7926

Limestone, pale buff, aphanitic, with some interbedded shale, pale grey-green, micropyrritic.

Borehole footage

Lithology

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1370 m (4496 ft).

Peel Formation

Top at 2396 m (7861 ft) below sea-level.

Thickness: 276 m (904 ft).

7926-8644

Dolomite, pale grey, pale buff, aphanitic and microcrystalline, in part argillaceous and/or silty, in part microsucrosic.

8644-c. 8830

Dolomite, brown, pale buff, microsucrosic with some intercrystalline porosity.

Mount Kindle Formation

Top at 2672 m (8765 ft) below sea-level.

Thickness: 318 m (1042 ft).

c. 8830-9174

Dolomite, dark grey-brown, brown and buff, microcrystalline, in part argillaceous and silty.

9174-9872

Dolomite, buff, brown, grey-brown, dark brown-grey, micro-, very finely, finely and medium crystalline, some sucrosic texture and rare intercrystalline porosity.

Franklin Mountain Formation

Top at 2989 m (9807 ft) below sea-level.

Thickness: >59 m (>194 ft).

Cherty member, thickness: >59 m.

9872-10066

Dolomite, pale grey-buff, medium and coarsely crystalline, with clear quartz and trace of translucent chert; some intercrystalline porosity.

10066

Total depth: 3068 m.

22. D-08

Log of Arco Sainville River D-08

Location: 66°17'07"N., 133°31'39"W.

Elevation of Kelly Bushing: 203 m (666 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to density log.

Borehole footage

Lithology

MESOZOIC

Thickness: 574 m (1882 ft).

Basal beds (Lower Cretaceous?)

1830-1882

(Below siltstone and shale)(R). Sandstone,  
conglomerate, and siltstone; some  
glauconite.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 371 m (1216 ft) below sea-level.

Thickness: 357 m (1170 ft).

(Sandstone markers implied after Lutchman, 1977).

1882-2386

Shale, very dark brown-grey, silty, grading to  
black, flaky to splintery; minor amounts of  
sandstone and siltstone; at 2064-2070 ft:  
sandstone, fine-grained, poorly sorted,  
quartzitic and kaolinitic.

(M6 sandstone, "delta front facies").

2386-2399

Sandstone, pale buff, fine- to medium-grained,  
poorly sorted, quartzose, porosity largely  
blocked by kaolin.

2400-2700

Samples missing - probably shale.

2700-2788

Shale, very dark grey and black, platy.

(M5 sandstone, "delta plain facies").

2788-2918

Sandstone, pale grey, fine-grained, poorly  
sorted, kaolinitic, at 2788-2798 ft,  
2818-2824 ft, and 2884-2918 ft.

2918-2969

Shale, as above.

Borehole footage

Lithology

(M4 sandstone, "delta front facies").

2969-3026

Sandstone, pale grey, fine-grained, in part silty, quartzose; interbedded shale, as above.

3026-3052

Sandstone, pale grey, fine-grained, quartzose, kaolinitic, porous.

UPPER DEVONIAN

Imperial Formation

Top at 727 m (2386 ft) below sea-level.  
Thickness: 741 m (2430 ft).

3052-4900

Shale, very dark grey to black, non-calcareous; rare siltstone.

4900-5360

Shale, as above, with siltstone, dark brown-grey, fine-grained.

5360-5482

Shale, as above, with siltstone, fine- and coarse grained.

DEVONIAN

Thickness: 835 m (2740 ft).

Horn River Formation

Top at 1468 m (4816 ft) below sea-level.  
Thickness: 65 m (212 ft).

5482-5694

Shale, black, bituminous, pyritic.

5678

Top Bluefish Member, thickness: 5 m (16 ft).

Devonian carbonates assemblage

Thickness: 771 m (2528 ft).

Hume Formation

Top at 1533 m (5028 ft) below sea-level.  
Thickness: 147 m (482 ft).

5694-6176

Limestone, dark brown, brown and white, micro-grained and in part fine-grained, mostly silty and bioclastic, fossiliferous.



Borehole footage

Lithology

Landry Formation

Top at 1679 m (5510 ft) below sea-level.  
Thickness: 540 m (1772 ft).

6176-7948

Limestone, at the top brown and aphanitic, grading downward through grey-buff, aphanitic and micrograined, in part pelletoid, to buff to brown, micrograined; some dolomite, brown, microcrystalline, part sucrosic.

Arnica Formation

Top at 2220 m (7282 ft) below sea-level.  
Thickness: 32 m (104 ft).

7948-8052

Dolomite, brown, micro- to finely crystalline, in part sucrosic, in part calcareous.

Tatsieta Formation

Top at 2251 m (7386 ft) below sea-level.  
Thickness: 52 m (170 ft).

8052-8222

Limestone, pale buff with some pale green patches, aphanitic to microcrystalline, in part slightly dolomitic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1230 m (4035 ft).

Peel Formation

Top at 2303 m (7556 ft) below sea-level.  
Thickness: >146 m (>478 ft).

8222-8700

Dolomite, pale buff, microcrystalline, calcareous, grading downward to pale buff, grey buff, non-calcareous.

8700

Total depth: 2652 m.

23. D-40

Log of Mobil Iroquois D-40

Location: 67°29'08"N., 129°52'20"W.

Elevation of Kelly Bushing: 216 m (710 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to acoustilog.

Borehole footage

Lithology

DEVONIAN

Thickness: 671 m (2200 ft).

Horn River Group

Hare Indian Formation

Top at bedrock, 204 m (670 ft) above sea-level.

Thickness: 151 m (496 ft).

40-520

Shale, pale grey, calcareous, micromicaceous,  
grading downward through grey and slightly  
calcareous to dark brown-grey, non-calcareous.

Bluefish Member, thickness: 5 m (16 ft).

520-536

Shale, black, calcareous; limestone, dark  
brown and white, argillaceous, bioclastic.

Devonian carbonates assemblage

Thickness: 519 m (1704 ft).

Hume Formation

Top at 53 m (174 ft) above sea-level.

Thickness: 83 m (272 ft).

536-730

Limestone and shale: limestone, buff-grey to  
pale buff, pale grey and white, in part  
silty or argillaceous, fossiliferous; shale,  
pale grey, slightly calcareous, micro-  
micaceous.

730-808

Limestone, pale buff to brown, fine-grained,  
fossiliferous, grading downward to lime-  
stone, grey-buff, micrograined, dense,  
and shale, pale grey, calcareous, micro-  
micaceous.

Borehole footage

Lithology

Landry Formation

Top at 30 m (98 ft) below sea-level.  
Thickness: 241 m (790 ft).

- 808-c. 1000 Limestone, brown, micrograined to aphanitic with some pelletoid.
- c. 1000-1347 Limestone, buff, aphanitic to micrograined with some dolomite, microcrystalline at 1060-1100 ft, grading downward to limestone, pale buff and white, aphanitic to micrograined with traces of dolomite, pale buff, microcrystalline.
- 1347-1440 Dolomite, buff, micro- to very finely crystalline, sucrosic; some limestone, pale buff, aphanitic.
- 1440-1598 Limestone, pale buff and white, aphanitic.

Arnica Formation

Top at 271 m (888 ft) below sea-level.  
Thickness: 182 m (598 ft).

- 1598-2196 Dolomite, buff to brown, micro- to very finely crystalline, sucrosic with some intercrystalline porosity.

Tatsieta Formation

Top at 453 m (1486 ft) below sea-level.  
Thickness: 13 m (44 ft).

- 2196-2208 Shale, pale grey, dolomitic.
- 2208-2240 Limestone, dolomite and shale: limestone, pale buff and white, aphanitic to microcrystalline; dolomite, creamy white, microcrystalline, calcareous; shale, pale green, micropyrritic; some pyrite.

Borehole footage

Lithology

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness: 1163 m (3816 ft)

Peel Formation

Top at 466 m (1530 ft) below sea-level  
Thickness: 126 m (414 ft).

2240-2654

Dolomite: in the upper part, buff, micro-sucrosic, with some shale, pale green, waxy, and some pyrite; grades downward successively through grey-buff, micro-crystalline, argillaceous, and pale buff, pale grey, microcrystalline with some shale, grey-green, pale green, waxy; in the lower part, dark brown, microcrystalline.

Mount Kindle Formation

Top at 593 m (1944 ft) below sea-level.  
Thickness: 232 m (762 ft).

2654-2900

Dolomite, brown to dark brown, some buff, micro- and some finely crystalline; some shale, pale green, in part micro-pyritic.

2900-3416

Dolomite, pale buff to brown, very finely to finely crystalline, partly sucrosic; some dolomite, white, coarsely crystalline.

Franklin Mountain Formation

Top at 825 m (2706 ft) below sea-level.  
Thickness: 805 m (2650 ft).

3416-3690

Dolomite, pale buff and buff, finely to medium, and some coarsely, crystalline; traces of shale, pale green, micropyritic.

Cherty member, thickness: 260 m (853 ft).

3690-4543

Dolomite and chert: dolomite, creamy white, some buff, finely to coarsely crystalline; chert, white and milky white, in the lower

Borehole footage

Lithology

part with clear quartz; much chert around 3720 ft and 3890 ft; in the upper part, traces of shale, pale green, micropyrritic.

4543-5841

Dolomite, creamy white to buff, very finely crystalline, in part sucrosic, grading downward to dolomite, pale buff to brown, microcrystalline.

5841-6056

Dolomite, pale buff to grey-buff, microcrystalline, partly aphanitic; some dolomite, grey-brown, argillaceous; traces of shale, dark grey.

CAMBRIAN

Clastics-evaporites assemblage

Thickness: 303 m (994 ft).

Saline River Formation

Top at 1629 m (5346 ft) below sea-level.  
Thickness: 150 m (492 ft).

Upper clastic member, thickness: 36 m (118 ft).

6056-6146

Shale; at the top, brick-red, some purple, hard; in the lower part with shale, pale green, in part olive-green and waxy, and with anhydrite, white and some pink; green shale increases downwards.

6146-6174

Dolomite and shale: dolomite, pale buff, microcrystalline; shale, green, some red; some anhydrite.

Salt member, thickness: 70 m (232 ft).

6174-6406

Halite.

Lower clastic member, thickness: 43 m (142 ft).

6406-6502

Shale, dolomite, siltstone and sandstone: shale, green-grey, pale purple, pale green, in part siliceous and in part waxy; dolomite, grey-buff, grey-brown, siliceous; siltstone, pale green, siliceous; sandstone, white, very fine-grained, silty, quartzitic.

Borehole footage

Lithology

- 6502-6512 Chert, shale and siltstone: chert, yellow-brown; shale, black, siliceous; siltstone, pale brown, siliceous, dolomitic.
- 6512-6548 Dolomite, brown and dark brown, microcrystalline, in part siliceous; trace of oolite structure.

Mount Cap Formation

Top at 1779 m (5838 ft) below sea-level.  
Thickness: 153 m (502 ft).

- 6548-6602 Siltstone and shale: siltstone, pale green-grey, buff-grey and grey, siliceous; shale, buff-grey, siliceous.
- 6602-6646 Dolomite, dark brown, microcrystalline, siliceous.
- 6646-6692 Shale and dolomite: shale, green-grey, buff-grey, siliceous, in part glauconitic; dolomite, grey-buff, siliceous, in part very glauconitic.
- 6692-7050 Dolomite, pale buff, microcrystalline, calcareous; oolites, especially at 6740-6750 ft, dolomitized and some silicified; some glauconite pellets; some interbedded shale, buff-grey, grey-brown and dark grey, and near the base some shale, black siliceous.

PROTEROZOIC

Top at 1932 m (6340 ft) below sea-level.

Dolomite unit(?) thickness: 244 m (800 ft).

- 7050-7560 Silicified dolomite and siltstone; some shale, siliceous and traces of shale, maroon and red; at 7460-7480 ft: argillite, black.
- 7560-7850 Dolomite and siltstone: dolomite, buff-grey, siliceous; siltstone, pale buff, pale grey, pale green, siliceous; some shale, dark grey, siliceous.

Borehole footage

Lithology

Shale unit, thickness: >198 m (>650 ft).

7850-8098

Shale, grey, siliceous, in the lower part with siltstone, pale buff and pale grey, siliceous.

8098-8124

Limestone, grey-buff, microcrystalline, siliceous.

8124-8500

Shale, siltstone and orthoquartzite: shale, brown, brittle, siliceous; siltstone, grey to buff, very siliceous; orthoquartzite, clear; near the base, some shale, pale grey.

8500

Total depth: 2591 m.

24. D-51

Log of Socony West Parkin Y.T. D-51.

Location: 66°10'09"N., 137°26'05"W.

Elevation of Kelly Bushing: 475 m (1560 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 1136 m (3726 ft).

Basal beds (Lower Cretaceous?)

3716-3726

(Below siltstone and shale). Sandstone and shale: sandstone, dark grey and green, fine-grained, poorly sorted, silty, very glauconitic; shale, black to yellow, in part highly pyritic; some pyrite nodules.

UPPER PALEOZOIC

Hart River Formation

Top at 660 m (2166 ft) below sea-level.

Thickness: >373 m (>1224 ft).

3726-3742

Chert, pale buff to pale grey and white; evidence of pebbles and weathering.

3742-3883

Shale and limestone: shale, dark brown-grey, very silty and calcareous, grading to, and interbedded with, limestone, very argillaceous and silty.

Chance Sandstone Member (3883-4420 ft).

3883-3938

Sandstone, grey, very poorly sorted, fine- to medium-grained, in part fine- to very coarse-grained, chert/quartz, siliceous cement.

3938-4144

Shale, very dark brown-grey to black, in part very silty or sandy, and in part very calcareous, grading to argillaceous limestone.



Borehole footage

Lithology

4144-4210	Dolomite, limestone and shale: dolomite, brown, microcrystalline, in part argillaceous; limestone, grey-brown to white, argillaceous and silty; shale, black, silty, calcareous or dolomitic; some chert, pale buff-grey.
4210-4297	Chert and limestone: chert, mainly pale buff-grey with brown specks and streaks, some pale buff, white and grey; limestone, buff to white, in part silty or sandy.
4297-4354	Limestone, grey-buff to dark grey-brown, argillaceous, in part skeletal; some interbedded shale, black, calcareous.
4354-4370	Sandstone, pale grey, very poorly sorted, very- to very coarse-grained, conglomeratic (varicoloured chert granules and pebbles), chert/some quartz, siliceous cement.
4370-4392	Chert, pale buff-grey with brown specks; some dolomite, buff, silty and sandy.
4392-4420	Sandstone and conglomerate: sandstone, buff, very fine- to medium-grained, poorly sorted, quartzose, dolomitic; sandstone, pale grey, very poorly sorted, fine- to very coarse-grained, varicoloured chert, grading to conglomerate (varicoloured chert granules and pebbles).
4420-4460	Chert, mainly pale buff-grey with brown specks; some dolomite, buff, microcrystalline, silty or sandy; some limestone, buff to white, micromicaceous, silty.
4460-4950	Limestone and chert: limestone, grey-buff to pale buff, white, brown micritic, in part microcrystalline and in part silty; chert, mainly pale grey or grey, with brown specks streaks, some brown, pale buff, smoky translucent; at 4714-4728 ft: sandstone, grey, fine- to very coarse-grained, conglomeratic (chert, dark grey to pale grey).
4950	Total depth: 1509 m.

25. D-53

Log of Arco Hume River D-53.

Location: 65°52'03"N., 129°11'00"W.

Elevation of Kelly Bushing: 88 m (290 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 426 m (1399 ft).

Basal beds (Lower Cretaceous?)

1434-1474

(Below siltstone and shale, glauconitic and carbonaceous). Sandstone and shale: sandstone, fine-grained, poorly sorted, quartzose, sandstone, coarse-grained, very poorly sorted, sub-rounded, quartzose; shale, buff in part sandy.

UPPER DEVONIAN

Imperial Formation

Top at 361 m (1184 ft) below sea-level.

Thickness: 37 m (122 ft).

1474-1566

Shale, dark grey, in part silty and micaceous.

1566-1595

Siltstone, brown-grey, argillaceous, micaceous.

DEVONIAN

Thickness: 760 m (2494 ft).

Horn River Group

Thickness: 349 m (1146 ft).

Allochthonous Limestone Unit

Top at 398 m (1306 ft) below sea-level.

Thickness: 6 m (21 ft).

Borehole footage

Lithology

1596-1617

Limestone and shale: limestone, dark brown, black and white, fragmental, bituminous; shale, black, bituminous; free bitumen. Core (1613-1617) coarse-grained reef debris and thin black shale partings.

Ramparts Formation

Top at 404 m (1327 ft) below sea-level.  
Thickness: 145 m (477 ft).

Reef member, thickness: 103 m (338 ft).

1617-1690

Limestone, buff, brown, white, bioclastic; some interbedded shale, dark grey.

1690-1955

Limestone, reef.

Platform member, thickness: 42 m (139 ft).

1955-1984

Carcajou marker, 9 m (29 ft); shale, grey-brown, very calcareous; shale, black, dark green, splintery.

1984-2094

Limestone buff, brown, white, microcrystalline, bioclastic, in part fragmental.

Hare Indian Formation

Top at 550 m (1805 ft) below sea-level.  
Thickness: 198 m (648 ft).

2094-2695

Shale: at the top, pale grey, calcareous, silty, micromicaceous, grading to siltstone, calcareous, argillaceous, and grading downward through shale, grey, calcareous, micromicaceous to brown-grey and at the base, dark brown-grey.

Bluefish member, thickness: 14 m (47 ft).

2695-2742

Shale, black, non-calcareous; at the base, limestone, grey to brown, very argillaceous.

Borehole footage

Lithology

Devonian carbonates assemblage

Thickness: 411 m (1348 ft).

Hume Formation

Top at 747 m (2452 ft) below sea-level.

Thickness: 94 m (308 ft).

2742-2905

Limestone, brown, buff, grey, micrograined, bioclastic, in part silty and argillaceous; at c. 2755-2800 ft: much shale, brown-grey, calcareous.

2905-3050

Limestone and shale: limestone, brown, buff grey, white, in part silty and argillaceous; shale, pale grey, calcareous, micromicaceous.

Landry Formation

Top at 841 m (2760 ft) below sea-level.

Thickness: 174 m (570 ft).

3050-3620

Limestone, brown, dark brown, buff, mainly aphanitic, some pelletoid in the upper part; grades downward to limestone, buff, brown, mainly aphanitic.

Arnica Formation

Top at 1015 m (3330 ft) below sea-level.

Thickness: 88 m (288 ft).

3620-3908

Dolomite, brown, micro- to very finely crystalline, in part sucrosic with some intercrystalline porosity.

Fort Norman Formation (basal tongue)

Top at 1103 m (3618 ft) below sea-level.

Thickness: 55 m (182 ft).

3908-4090

Dolomite, buff, micro- to finely crystalline, in part sucrosic with intercrystalline porosity; dolomite, pale grey, in part microcrystalline and in part medium crystalline; some shale, very pale grey-green micropyrritic.

Borehole footage

Lithology

CAMBRIAN LOWER DEVONIAN

Ronning Group

Thickness estimated at 871 m (2855 ft).

Mount Kindle Formation

Top at 1158 m (3800 ft) below sea-level.  
Thickness: >21 m (>69 ft).

4090-4159

Dolomite, brown, micro- to very finely  
crystalline, sucrosic.

4159

Total depth: 1268 m.

26. D-61

Log of Chevron North Parkin Y.T. D-61.

Location: 66°20'12"N., 137°13'01"W.

Elevation of Kelly Bushing: 489 m (1605 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 374 m (1224 ft).

Basal beds (Lower Cretaceous? or erosional  
remnant of Hart River Formation).

1138-1226

(Below sandstone, quartzose, glauconitic)  
Conglomerate, pebbles of chert, black, grey,  
pale brown translucent, in sandstone, red-  
brown, poorly sorted, quartz/chert, with  
siliceous cement.

UPPER PALEOZOIC

Thickness: 1231 m (4040 ft).

Ford Lake Shale

Top at 116 m (379 ft) above sea-level.

Thickness: 924 m (3030 ft).

(1224-1706 ft - age: "Upper Mississippian"  
(cf. Meramec), Paleontological Determination,  
Well history report).

1226-1504

Shale, very dark brown-grey, silty.

1504-1536

Sandstone, brown-grey, poorly sorted, medium-  
to coarse-grained, much angular chert, some  
kaolin grains, silty, with siliceous cement.

1536-4256

Shale, black, splintery; in the upper part with  
some ironstone, brown; in the lower part  
with some sandstone, poorly sorted,  
quartzitic; and in the basal beds with  
some siltstone.

Borehole footage

Lithology

Tuttle Formation

Top at 808 m (2651 ft) below sea-level.  
Thickness: 308 m (1010 ft).

4265-5266

Sandstone, very poorly sorted, variably very fine- to very coarse-grained, quartz/chert and conglomeratic, grading to conglomerate (chert, white, grey, buff, traces of green yellow), in part quartzitic; in the basal part with siltstone, brown-grey.

(5083-5089 ft - age: "Late Devonian or Early Mississippian", Paleontological Determination, Well history report).

UPPER DEVONIAN

"Imperial"

Top at 1116 m (3661 ft) below sea-level.  
Thickness: 624 m (2046 ft).

5266-7312

Shale, dark grey, micromicaceous; some siltstone, grey, brown-grey, variable coarse-grained, sandy and fine-grained, argillaceous; grained and fine- to coarse-grained, poorly sorted, angular chert grains.

DEVONIAN

Thickness estimated at 1310 m (4268 ft).

Canol Formation

Top at 1739 m (5707 ft) below sea-level.  
Thickness: 50 m (164 ft).

7312-7476

Shale, black, bituminous, pyritic; at the base, trace of "quartzite" (or silicified sandy mudstone), black, pyritic.

Devonian carbonates assemblage

Hume Formation

Top at 1789 m (5871 ft) below sea-level.  
Thickness: 236 m (774 ft).

7476-8250

Limestone, reef. (stromatopora, amphipora, corals).

Borehole footage

Lithology

Landry Formation

Top at 2025 m (6645 ft) below sea-level.  
Thickness: 687 m (2253 ft).

8250-8910 Limestone, brown, buff, white, microcrystalline,  
in part "chalky"; trace of dolomitization.

8910-9350 Limestone, buff, white, brown, variable fine-  
grained, "chalky", and microcrystalline;  
some bituminous streaks; grades downward to  
limestone, as above, with some aphanitic.

9350-10503 Limestone, buff, brown, white, aphanitic, micro-  
and finely crystalline, in part dolomitic; at  
9700-9950 ft: much limestone, grey-buff,  
argillaceous.

Arnica Formation

Top at 2712 m (8898 ft) below sea-level.  
Thickness: >151 m (>497 ft).

10503-11000 Dolomite, pale buff, grey-buff, some grey and  
brown microcrystalline; some interbedded shale,  
very dark grey, splintery.

11000 Total depth: 3353 m.



27. D-63

Log of Chevron South Chance Y.T. D-63.

Location: 65°52'09"N., 137°42'51"W.

Elevation of Kelly Bushing: 707 m (2321 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 1321 m (4335 ft).

Basal beds (Lower Cretaceous?)

4315-4335

(Below shale, very glauconitic). Sand (trace only in very poor samples), coarse, sub-rounded, quartz.

UPPER PALEOZOIC

Thickness: >700 m (>2295 ft).

Jungle Creek Formation

Top at 614 m (2014 ft) below sea-level.

Thickness: 468 m (1536 ft).

4335-5252

Shale and siltstone; shale, very dark brown-grey, silty, micromicaceous; siltstone brown-grey, argillaceous; siltstone decreases downward; at the base, shale is in part glauconitic.

5252-5871

Sandstone, fine-grained and medium- and coarse, grained poorly sorted, quartz/chert, quartzitic; some interbedded siltstone, brown-grey, siliceous, and shale, dark grey, silty; traces of glauconite.

Blackie Formation

Top at 1082 m (3550 ft) below sea-level.

Thickness: >231 m (>759 ft).

Borehole footage

Lithology

5871-6630

At the top, siltstone, brown-grey, calcareous; grades downward through siltstone and shale, very dark grey, calcareous and trace of glauconite, to shale, black, non-calcareous and shale, dark brown-grey, silty, slightly calcareous, micromicaceous, with trace of siltstone.

Total depth: 2021 m (6630 ft).

28. D-64

Log of Dome South Peel D-64.

Location: 65°53'04"N., 132°27'50"W.

Elevation of Kelly Bushing: 558 m (1831 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

Thickness: 952 m (3123 ft).

Basal beds (Lower Cretaceous?)

3204-3226

(Below shale) Siltstone, dark grey, fine-  
to coarse-grained, in part very finely sandy,  
slightly glauconitic; sand, coarse, rounded,  
quartz.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 425 m (1395 ft) below sea-level.

Thickness: 108 m (354 ft).

3226-3436

(Poor samples). Shale, black.

?M sandstone, "delta fringe facies"  
(Lutchman, 1977)

3436-3498

(Poor samples). Orthoquartzite, grey,  
?fine-grained; possibly sandstone.

3498-3580

(Poor samples). Shale, black.

UPPER DEVONIAN

Imperial Formation

Top at 533 m (1749 ft) below sea-level.

Thickness: 404 m (1325 ft).

3580-c. 4500

Shale, very dark grey with trace of pyrite  
and rare siltstone, fine-grained; at  
3910-3980 ft: siltstone, dark grey-brown,  
siliceous.

c. 4500-4700

Shale, as above, in part silty, and siltstone,  
very dark brown-grey, fine-grained.

Borehole footage

Lithology

4700-4905

Shale, as above, with siltstone, fine- and coarse-grained.

DEVONIAN

Thickness estimated at 694 m (2276 ft).

Horn River Group

Top at 937 m (3074 ft) below sea-level.  
Thickness: 65 m (214 ft).

4905-5119

Shale, black, with some pyrite, some calcite and a trace of silica.

5100

Top Bluefish member: thickness: 6 m (19 ft).

Devonian carbonates assemblage

Hume Formation

Top at 1002 m (3288 ft) below sea-level.  
Thickness: 142 (467 ft).

5119-5151

Limestone, grey-buff and dark brown, in part fine-grained and in part very argillaceous.

5151-5266

Limestone, brown, grey and white, bioclastic, fossiliferous.

5256-5586

Limestone and shale: limestone, brown, buff fossiliferous, in part argillaceous; shale, buff-grey, calcareous, fossiliferous; at the base some quartz infilling.

Landry Formation

Top at 1145 m (3755 ft) below sea-level.  
Thickness: >283 m (>928 ft).

5586-c. 5680

Limestone, buff, brown, siliceous, with much quartz infilling.

c. 5680-6514

Limestone, grey-buff to brown, micrograined, in part argillaceous, fossiliferous (brachiopods, crinoids), in part dolomitic; at 6450-6480 ft: white calcite veins.

6514

Total depth: 1985 m.

29. D-69

Log of Inc. Thunder Bay D-69.

Location: 67°38'10"N., 130°12'40"W.

Elevation of Kelly Bushing: 250 m (820 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to gamma ray-neutron log.

Borehole footage

Lithology

DEVONIAN

Thickness estimated at 730 m (2396 ft).

Horn River Group

Hare Indian Formation

Top at bedrock, 219 m (720 ft) above sea-level.  
Thickness: 181 m (594 ft).

c. 100-636

Shale, at the top pale grey to grey, in part slightly calcareous, micromicaceous, grading downward through brown-grey to dark brown-grey.

Bluefish Member, thickness: 18 m (58 ft).

636-682

Shale, black, non-calcareous.

682-694

Shale, black with white streaks, very calcareous, grading to very argillaceous limestone.

Devonian carbonates assemblage

Hume Formation

Top at 38 m (126 ft) above sea-level.  
Thickness: 77 m (252 ft).

694-946

Limestone, buff, grey-buff, in part bioclastic and in part argillaceous and/or silty, fossiliferous; some shale, grey, micromicaceous, calcareous.

Landry Formation

Top at 38 m (126 ft) below sea-level.  
Thickness: >77 m (>254 ft).

Borehole footage

Lithology

946-1200

Limestone, buff, brown, micrograined to aphanitic.

1200

Total depth: 366 m.

30. D-72

Log of AT. S.W. Airport Creek No. 1.

Location: 66°21'10"N., 129°14'44"W.

Elevation of Kelly Bushing: 149 m (490 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 75 m (246 ft).

Basal beds (Lower Cretaceous?)

216-256

(Below shale). Sandstone, siltstone and sand:  
sandstone, pale grey, very fine-grained, in  
part very poorly sorted with medium and coarse  
grains, quartzose, in part glauconitic; silt-  
stone, grey, coarse-grained, sandy, argillaceous;  
sand, medium to coarse, sub-angular to rounded,  
quartz.

UPPER DEVONIAN

Imperial Formation

Top at 71 m (234 ft) above sea-level.

Thickness: 18 m (59 ft).

256-315

Shale, dark grey, flaky to splintery.

DEVONIAN

Thickness estimated at 728 m (2387 ft).

Horn River Group

Thickness: 296 m (972 ft).

Canol Formation

Top at 53 m (175 ft) above sea-level.

Thickness: 5.5 m (18 ft).

Borehole footage

Lithology

315-333

Shale, very dark brown-grey, silty, bituminous with some pyrite.

Allochthonous Limestone Unit

Thickness: 9 m (29 ft).

333-362

(Sonic log determination).

Ramparts Formation

Top at 39 m (128 ft) above sea-level.

Thickness: 84 m (274 ft).

Reef member, thickness: 37 m (122 ft).

362-484

Limestone, pale buff, reefoid.

371-382 ft - age: late Devonian, mackenziense Zone, (A.E.H. Pedder, in Norford et al., 1971, p. 17.

387-398 ft - age: Middle Devonian (A.E.H. Pedder, in Norford et al., 1971, p. 17-18).

Platform member and Siltstone lentil, thickness: 46 m (152 ft).

484-636

Limestone and siltstone: limestone, pale buff, microcrystalline; limestone, pale grey, silty; siltstone, pale grey, calcareous, argillaceous.

Hare Indian Formation

Top at 45 m (146 ft) below sea-level.

Thickness: 198 m (651 ft).

636-1224

Shale, at the top pale grey, calcareous, silty, micromicaceous, grading downward through grey, calcareous, in part silty, micromicaceous, to brown-grey, variably calcareous.

Bluefish Member, thickness: 19 m (63 ft).



Borehole footage

Lithology

1224-1287

Shale, very dark brown-grey to black, non-calcareous; at the base, limestone, dark brown and white, granular, bioclastic, argillaceous and bituminous.

Devonian carbonates assemblage

Hume Formation

Top at 243 m (797 ft) below sea-level.  
Thickness: 122 m (400 ft).

1287-1375

Limestone, buff, brown, white, microcrystalline and bioclastic, in part fragmental.

1339-1365 ft - age: Middle Devonian (A.E.H. Pedder, in Norford et al., 1971, p. 18).

1375-1632

Limestone, brown, buff, grey, white, bioclastic; some shale, grey, calcareous, micromicaceous; limestone grades downward in colour to buff-grey and shale increases.

1632-1687

Limestone, brown, buff, white, grey in part black and bituminous, bioclastic.

Landry Formation

Top at 365 m (1197 ft) below sea-level.  
Thickness: >213 m (>698 ft).

1687-1710

Limestone, buff, brown, pale buff, microcrystalline to aphanitic.

1710-2385

Samples missing or very poor.

2385

Total depth: 727 m.

31. D-77

Log of SOBC Blackstone Y.T. D-77.

Location: 65°46'11"N., 137°14'55"W.

Elevation of Kelly Bushing: 645 m (2116 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER PALEOZOIC

Thickness: 819 m (2688 ft).

Jungle Creek Formation

Top at bedrock, 645 m (2116 ft) above sea-level.

Thickness: 66 m (218 ft).

0 (s)-218

(Poor samples). Sandstone and shale: sandstone, grey-buff, very poorly sorted, fine-grained with coarse and very coarse sub-rounded sand grains of chert, and silt (quartz, feldspar, kaolin), in part with siliceous cement; shale, buff-grey; some orthoquartzite.

Blackie Formation

Top at 579 m (1898 ft) above sea-level.

Thickness: 221 m (726 ft).

218-545

Shale, brown-grey, micromicaceous, with some siliceous siltstone and sandstone between 430 and 545 ft.

545-944

Shale, brown-black, bituminous, with some siltstone, dark brown, dolomitic.

Hart River Formation

Top at 357 m (1172 ft) above sea-level.

Thickness: 180 m (590 ft).

944-1200

Limestone, dolomite and shale: limestone, brown and white, micrograined, and buff, finely crystalline; limestone, grey and grey-brown, argillaceous, grading to shale; dolomite, brown, microcrystalline, argillaceous; shale, dark brown-grey, calcareous and dolomitic; some chert, grey-brown, trace of pale grey.

Borehole footage

Lithology

1200-1534

Limestone and shale: limestone, grey-brown, buff, white with speckles, very fine-grained, argillaceous, some medium- and coarse-grained; shale, black, bituminous; some dolomite, dark brown, microcrystalline; some chert, grey-brown, pale grey and pale brown translucent - at 1430-1475 ft, also much chert, pale grey with brown streaks, grey-brown and dark brown.

Ford Lake Formation

Top at 177 m (582 ft) above sea-level.  
Thickness: 352 m (1154 ft).

1534-2688

Shale, brown-black, bituminous, pyritic, in part silty, rarely sandy; some thin beds of orthoquartzite and sandstone, brown-grey, sorted with some coarse and very coarse grains and argillaceous; around 2120 ft some sandstone, buff, fine-grained, quartzose, porous.

UPPER DEVONIAN

"Imperial"

Top at 174 m (572 ft) below sea-level.  
Thickness: 265 m (868 ft).

2688-3556

Shale, very dark grey, grading downward to grey and dark grey, micromicaceous; some siltstone, brown-grey, argillaceous.

DEVONIAN

Thickness: 1125 m (3692 ft).

Canol Formation

Top at 439 m (1440 ft) below sea-level.  
Thickness: 18 m (58 ft).

3556-3614

Shale, black, bituminous, pyritic.

Borehole footage

Lithology

Devonian carbonates assemblage

Thickness: 1108 m (3634 ft).

Ogilvie Formation (upper part)

Top at 457 m (1498 ft) below sea-level.

Thickness: 160 m (528 ft).

3614-4143

Limestone, buff, grey-brown, white, micrograined to finely, medium and coarsely crystalline, bioclastic with some reefoid structure.

Landry Formation

Top at 618 m (2026 ft) below sea-level.

Thickness: 490 m (1606 ft).

4143-5748

Limestone: at the top, brown, buff and aphanitic; grades successively downward through aphanitic with some pelletoid; limestone, brown and white, very fine-grained, dolomitic and dolomite, brown, buff, microcrystalline, calcareous; and limestone, brown, buff, white, some micrograined, some "chalky", some fine- and medium-grained; to limestone, as above, with some dolomite, dark brown, microcrystalline.

Arnica Formation

Top at 1107 m (3632 ft) below sea-level.

Thickness: 449 m (1472 ft).

5748-c. 6100

Dolomite, buff, brown and pale buff, very finely crystalline, calcareous; some limestone, brown, white, micrograined and very finely crystalline.

c. 6100-6600

Dolomite, pale buff-grey, microcrystalline.

6600-7150?

Dolomite, pale buff, very finely to medium crystalline; some intercrystalline porosity and bituminous residue.

7150?-7200

Dolomite, very dark brown-grey, microcrystalline, silty, in part argillaceous and in part calcareous.

Borehole footage

Lithology

7200-7220

Dolomite, brown, dark brown and buff, micro-  
to finely crystalline, in part calcareous.

Tatsieta Formation ?equivalent

Top at 1556 m (5104 ft) below sea-level.  
Thickness: 9 m (28 ft).

7220-7248

Limestone, brown, buff, micrograined to aphanitic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group (Transitional)

Thickness estimated at 2203 m (7228 ft).

Road River Formation (Transitional)

Top at 1564 m (5132 ft) below sea-level.  
Thickness: 618 m (2028 ft).

?Peel equivalent

Thickness: 473 m (1552 ft).

7248-7650

Limestone, dark brown-grey, brown, buff and pale  
buff-grey, variably "earthy" textured, micritic,  
bioclastic, argillaceous and fossiliferous; some  
interbedded shale, black, calcareous; shale  
increases downward.

7650-7945

Shale and limestone: shale, black, very calcareous  
and fossiliferous; limestone, pale grey, dark  
grey, buff-grey, "earthy", argillaceous,  
fossiliferous; at 7850-7890 ft: very  
fossiliferous beds.

7945-8800

Alternating and interbedded limestone and shale:  
limestone, pale grey and black, buff-grey,  
micrograined and very finely crystalline,  
argillaceous and bioclastic, becoming downward  
fragmental with some sparry calcite; many fossil  
fragments (brachiopods, crinoids); shale, black,  
calcareous; traces of pyrite.

Borehole footage

Lithology

8121-8151 ft - age: late Lochkovian to early Pragian; 8151-8180 ft - age: late Lochkovian (T.T. Uyeno: *see* Appendix I, 4-TTU-1978).

?Mount Kindle equivalent

Top at 2037 m (6684 ft) below sea-level.  
Thickness: 145 m (476 ft).

8800-8950

Limestone, dark brown-grey, some buff-grey, in part argillaceous; some shale, black, calcareous; at 8820-8830 ft: some chert, brown-black; at 8930-8950 ft: very much chert, black with white micro-specks.

8950-9276

Limestone, grey, dark grey, micrograined and aphanitic, argillaceous; some limestone, dark grey, silty, in part dolomitic; some shale, dark grey, very calcareous; grading to limestone, very argillaceous; some shale, black, calcareous, bituminous with traces of pyrite; many fossil fragments and casts; traces of sparry calcite.

Franklin Mountain Formation

Top at 2182 m (7160 ft) below sea-level.  
Thickness: >1201 m (>3941 ft).

?Cherty member, thickness: 65 m (212 ft).

9276-9488

Limestone: at the top, grey-brown, micrograined with some chert, grey-brown; grades downward to limestone and dolomite: limestone, brown micrograined to aphanitic, and dolomite, brown and buff, very finely crystalline, calcareous, with some chert, grey-brown; and in the lower part, limestone, dark grey-brown and buff, aphanitic and micrograined, with some dolomite, dark brown, microcrystalline, and traces of chert, dark brown; 9305 and 9310.5 ft - age: Late Ordovician; 9323.5 and 9324.4 ft - age: probably Late Ordovician; 9330-9335.5 ft - age: Late Ordovician (B.S. Norford, *in* Norford et al., 1971, p. 23).

Borehole footage

Lithology

9488-13217

Dolomite: at the top, buff and pale buff, very finely to medium and coarsely crystalline, with some intercrystalline porosity and some bituminous residue; grades downward through grey-brown, very finely crystalline with some creamy white, finely to medium crystalline; in the lower 150 m, creamy white, grey, finely, medium and coarsely crystalline.

13217

Total depth: 4029 m.

32. E-53

Log of Chevron Birch Y.T. E-53.

Location: 66°02'21"N., 136°56'05"W.

Elevation of Kelly Bushing: 621 m (2039 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 405 m (1328 ft).

Basal beds (Lower Cretaceous?)

810-1328

Shale; at the base, conglomerate of grey and dark grey chert granules and pebbles in matrix of silica with glauconite and pyrite concentrations.

UPPER PALEOZOIC

Thickness: >280 m (>917 ft).

Jungle Creek Formation

Top at 217 m (711 ft) above sea-level.

Thickness: 232 m (762 ft).

1328-c. 1450

(Poor samples). At the top: breccia of white chert in siliceous matrix and some ortho-quartzite. Sandstone and conglomerate: sandstone, buff, fine-grained, poorly sorted, quartzose, kaolinitic; sandstone, pale grey, fine- to medium-grained, poorly sorted, quartz/chert, kaolinitic; conglomerate, chert, pale grey, pale buff, white; some pyrite.

c. 1450-c. 1850

Conglomerate, chert, grey to dark grey, buff; some sandstone, pale grey, fine-grained, poorly sorted, quartz/chert, in part glauconitic.

c. 1850-2090

Sandstone, siltstone and shale; sandstone, pale grey to white, very fine- to medium-grained poorly sorted, quartz/chert, in part glauconitic, in part with granules and rare pebbles of chert; siltstone, buff-grey, grey, argillaceous, in part sandy, siliceous; shale, brown-grey, slightly calcareous or dolomitic, silty; some shell fragments.



Borehole footage

Lithology

Blackie Formation

Top at 16 m (51 ft) below sea-level.  
Thickness: >47 m (>155 ft).

2090-2245

Interbedded shale and siltstone: shale, dark brown-grey to buff-grey, slightly calcareous or dolomitic, in part silty; siltstone, grey-buff, argillaceous, slightly calcareous or dolomitic; some limestone grey-buff to white, silty and "chalky".

2245

Total depth: 684 m.

33. F-18

Log of Chevron East Porcupine Y.T. F-18.

Location: 66°07'25"N., 137°48'16"W.

Elevation of Kelly Bushing: 523 m (1716 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 1860 m (6101 ft).

Basal beds (Lower Cretaceous?)

6151-6165

(Below glauconite shale and siltstone). Siltstone, grey and green, coarse-grained, highly glauconitic and pyritic, in part argillaceous and in part grading to very fine-grained sandstone.

UPPER PALEOZOIC

Hart River Formation

Top at 1356 m (4449 ft) below sea-level.

Thickness: >172 m (>563 ft).

6165-6184

Limestone and shale: limestone, dark grey-brown and white, argillaceous and silty, grading to shale, dark brown-grey, calcareous; some limestone, pale buff, very silty or sandy.

6184-6228

Sandstone: at the top, white and brown, fine- to medium-grained, poorly sorted, quartz/chert, quartzitic; changes downward to buff, very poorly sorted, very fine- to medium-grained, quartz/some chert, silty; some oil-stain.

6228-6480

Limestone, grey-brown, buff, white, dark brown-grey, in part micritic, in part argillaceous and silty, grading to calcareous sandstone; some chert, buff, grey and brown.

6480-6728

Limestone and chert: limestone, brown, white, grey-buff, in part skeletal (with crinoids), in part micritic, and in part argillaceous.

6728

Total depth: 2051 m.

34. F-37

Log of Pacific Peel Y.T. F-37.

Location: 66°56'26"N., 134°51'54"W.

Elevation of Kelly Bushing: 55 m (179 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 107 m (350 ft).

Basal beds (Lower Cretaceous?).

90(s)-c. 350

(Below shale and ironstone). Siltstone and shale:  
siltstone, pale grey, coarse-grained, glauconitic  
in part extremely glauconitic; shale, dark grey,  
in part very glauconitic; some shale, black,  
carbonaceous; at the base, traces of sand, coarse,  
rounded, quartz.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation TYPE SECTION

Top at 52 m (171 ft) below sea-level.

Thickness: 874 m (2866 ft).

(Sandstone markers after Lutchman, 1977)

(M7 sandstone, "alluvial plain facies").

c. 350-710

Thinly interbedded siltstone, shale and ortho-  
quartzite: siltstone, pale grey, coarse-  
grained; siltstone, brown-grey, argillaceous,  
micaceous; shale, dark grey-brown, micro-  
micaceous; orthoquartzite and very thin quart-  
zose sandstone.

(M6 sandstone).

710-1065

Conglomerate, chert, white, grey, yellow, pale buff,  
pale green; at the top, traces of puddingstone;  
at the bottom, traces of sandstone, red, coarse-  
grained, argillaceous and quartzitic.

Borehole footage

Lithology

- (M5 sandstone, "interdistributary bay facies").
- 1165-1310 Sandstone, siltstone and shale: sandstone, pale grey, very fine-grained, poorly sorted, quartz/chert, micaceous; siltstone, pale grey, coarse-grained; siltstone, grey argillaceous; shale, brown-grey, flaky, micromicaceous.
- (M4 sandstone "delta plain facies").
- 1310-1654 Conglomerate and sandstone: conglomerate, chert, white, yellow, orange, pale green, buff, grey, sandstone, very poorly sorted, quartz/chert, kaolinitic, micaceous, conglomeratic; some siltstone, grey, coarse-grained, micaceous; some siltstone, grey and shale, brown-grey.
- 1654-1816 Shale and siltstone: shale, dark brown-grey, micromicaceous, in part silty; siltstone, grey.
- 1816-1897 Conglomerate, chert, orange, white, pale green, buff, grey.
- 1897-2260 Siltstone and shale: siltstone, brown, grey, in part sandy, in part argillaceous; shale, brown-grey, micromicaceous.
- (M3 sandstone, "delta plain facies").
- 2260-2446 Siltstone, shale, as above, and sandstone, pale grey, in part silty, kaolinitic, in part conglomeratic and in part quartzitic.
- 2446-2572 Shale, brown-grey, flaky to splintery, micromicaceous.
- (M2 sandstone, "delta plain facies").
- 2572-2864 Conglomerate, sandstone and siltstone: conglomerate, chert, white, yellow, buff, pale green; sandstone, very poorly sorted, conglomeratic, micaceous, kaolinitic; siltstone, grey; some shale, grey, flaky.
- 2864-3072 Shale, grey, micromicaceous, flaky.
- (M1 sandstone "delta front facies").

Borehole footage

Lithology

3072-3216

Sandstone, very poorly sorted, micaceous, kaolinitic, conglomeratic (chert, white, brown, yellow, trace of green); some siltstone, sandy.

UPPER DEVONIAN

Imperial Formation

Top at 926 m (3037 ft) below sea-level.  
Thickness: 1275 m (4182 ft).

3216-7360

Shale, very dark grey, micromicaceous, in part silty; some siltstone, pale grey, coarse-grained, and siltstone, grey and dark grey, argillaceous; rare sandstone, pale grey, silty.

7360-7398

Siltstone, dark grey-brown, argillaceous; shale, brown-black.

DEVONIAN

Thickness: 730 m (2395 ft).

Horn River Formation

Top at 2200 m (7219 ft) below sea-level.  
Thickness: 33 m (108 ft).

7398-7506

Shale, black, bituminous; traces of pyrite; at 7430-7450 ft: some siltstone, grey-buff, coarse-grained, argillaceous, non-calcareous.

7498

Top Bluefish Member, thickness: 2 m (8 ft).

Devonian carbonates assemblage

Thickness: 697 m (2287 ft).

Hume Formation

Top at 2233 m (7327 ft) below sea-level.  
Thickness: 104 m (342 ft).

7506-7796

Limestone, buff, brown, white, aphanitic and fine-grained, in part bioclastic and in part silty and argillaceous.

Borehole footage

Lithology

7796-7848

Shale, grey and dark brown-grey, calcareous, in part very micaceous; some limestone.

Landry Formation

Top at 2338 m (7669 ft) below sea-level.  
Thickness: 433 m (1422 ft).

7848-7940

Limestone, brown, buff, aphanitic and pelletoid.

7940-8900

Limestone, brown, aphanitic, grading downwards to brown, buff and white, with some pelletoid, and in the lower part, some pelletoid limestone and some dolomite.

8900-9270

Samples missing.

Arnica Formation

Top at 2771 m (9091 ft) below sea-level.  
Thickness: 121 m (398 ft).

9270(R)-9600

Samples missing.

9600-9668

Dolomite, brown, buff, micro- to very finely crystalline.

Tatsieta Formation

Top at 2892 m (9489 ft) below sea-level.  
Thickness: 38 m (125 ft).

9668-9692

Shale and dolomite: shale, grey, dolomitic; shale, black; dolomite, pale grey, aphanitic, argillaceous.

9692-9793

Limestone, buff, aphanitic; some shale, pale green, in part micropyrrite.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1291 m (4237 ft).

Borehole footage

Lithology

Peel Formation TYPE SECTION

Top at 2930 m (9614 ft) below sea-level.  
Thickness: 350 m (1147 ft).

9793-c. 10 700

Dolomite, pale grey, pale buff, buff-grey, aphanitic and microcrystalline, in part calcareous, grading downward to grey-buff and pale buff, microcrystalline.

c. 10 700-10 940

Dolomite, pale grey, grey, buff, aphanitic and microcrystalline, in part argillaceous or silty; some interbedded shale, very dark grey.

Mount Kindle Formation

Top at 3280 m (10 761 ft) below sea-level.  
Thickness: >34 m (>110 ft).

10 940-11 050

Dolomite, brown, some buff, micro- and very finely crystalline; some vuggy porosity.

11 050

Total depth: 3368 m.

35. F-47

Log of Candel Arctic Red F-47.

Location: 65°36'25"N., 130°52'53"W.

Elevation of Kelly Bushing: 791 m (2594 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 2196 m (7206 ft).

Basal beds (Lower Cretaceous?).

7140-7206

(Below shale). Sandstone, white, fine- to medium-grained, poorly sorted, quartzose, slightly glauconitic and kaolinitic; sand, coarse, rounded, quartz; sandstone, pale grey, fine-grained, silty, glauconitic.

UPPER DEVONIAN

Imperial Formation

Top at 1406 m (4612 ft) below sea-level.

Thickness: 175 m (574 ft).

7206-7780

Siltstone and shale: siltstone, dark brown-grey, in part argillaceous; siltstone, grey, pale grey, coarse-grained, in part sandy; shale, very dark grey, in part silty.

7780

Total depth: 2371 m.



36. F-48

Log of Chevron Ridge Y.T. F-48.

Location: 67°17'23"N., 137°53'35"W.

Elevation of Kelly Bushing: 321 m (1054 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to densilog.

Borehole footage

Lithology

MESOZOIC

Thickness: 1620 m (5314 ft).

Basal beds (Jurassic?)

5250-5374

(Below glauconitic sandstone). Shale and siltstone: shale, dark brown-grey, in part silty, non-calcareous, in part pyritic; siltstone, grey-brown, argillaceous, in part coarse-grained and finely to medium sandy, grading to sandstone, very argillaceous and silty.

4960-5350 ft - age: Probable Jurassic (undef).  
(see Appendix I, WHR-F-48-1973).

UPPER DEVONIAN

Tuttle Formation

Top at 1317 m (4320 ft) below sea-level.

Thickness: >231 m (>757 ft).

5374-6131

Shale, sandstone and siltstone: shale, dark grey, micromicaceous, in part silty; sandstone (wacke) grey fine- to coarse-grained, very poorly sorted, chert/quartz, with very coarse grains and granules of chert, siliceous cement; siltstone, grey coarse-grained, sandy, in part argillaceous.

5420-6063 ft - age: Upper Devonian? (Frasnian/  
Famennian). (see Appendix I, WHR-F-48-1973).

6131

Total depth: 1869 m.

37. F-57m

Log of McD. Maida Creek F-57.

Location: 65°36'17"N., 128°10'36"W.

Elevation of Kelly Bushing: 120 m (395 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 282 m (924 ft).

Basal beds (Lower Cretaceous?).

884-924

(Very poor samples). (Below shale and glauconitic siltstone). Traces of: sandstone, quartzose; sand, coarse, quartz; coal.

UPPER DEVONIAN

Imperial Formation

Top at 161 m (529 ft) below sea-level.

Thickness: 176 m (578 ft).

924-964

Siltstone, pale grey, in part coarse-grained, and in part argillaceous grading to silty shale.

964-1502

Shale, grey to dark grey, in part silty, micromicaceous; rare siltstone, pale grey.

DEVONIAN

Thickness: 622 m (2042 ft).

Horn River Group

Thickness: 283 m (928 ft).

Canol Formation

Top at 337 m (1107 ft) below sea-level.

Thickness: 5 m (16 ft).

1502-1518

Shale, black, bituminous.

Borehole footage

Lithology

Ramparts Formation

Top at 342 m (1123 ft) below sea-level.  
Thickness: 198 m (648 ft).

Reef member, thickness: 123 m (405 ft).

1518-1923 Limestone, buff to white, reefoid, in the lower part grading to buff, brown and white, fragmental and fossiliferous.

Platform member with siltstone lenticle,  
thickness: 74 m (243 ft).

1923-1961 Carcajou marker, 12 m (38 ft). Interbedded shale and siltstone: shale, very dark brown-grey, silty, very micaceous, slightly calcareous; siltstone, pale grey to brown-grey, in part argillaceous, very micaceous; some limestone, pale buff and white, fragmental, fossiliferous (including crinoid stems).

1961-2092 Limestone, buff-grey, white, brown, fossiliferous, in part silty; traces of chert, milky white; become increasingly more silty downward grading to siltstone and shale: siltstone, buff-grey, very calcareous; siltstone, grey, calcareous, argillaceous micaceous; shale, brown-grey, calcareous, silty, micaceous.

2092-2166 Limestone, grey-buff to pale grey, silty and argillaceous, with ostracods and with some interbedded shale, brown-grey, silty, very calcareous, micromicaceous.

Hare Indian Formation

Top at 540 m (1771 ft) below sea-level.  
Thickness: 81 m (265 ft).

2166-2400 Shale, brown-grey, silty, calcareous to very calcareous, micromicaceous, grading downward to grey and brown-grey, variably calcareous.

Bluefish Member, thickness: 9 m (31 ft).

Borehole footage

Lithology

2400-2431

Shale, black, very slightly calcareous, with some interbedded shale, brown-black and white, very calcareous, grading in part to argillaceous limestone.

Devonian Carbonate assemblage

Thickness: 339 m (1113 ft).

Hume Formation

Top at 621 m (2036 ft) below sea-level.

Thickness: 86 m (283 ft).

2431-2492

Shale and limestone: shale, grey, brown-grey, calcareous, micromicaceous; limestone, buff to grey, fossiliferous, with some sparry calcite.

2492-2578

Limestone, brown, buff, white, cryptocrystalline, fossiliferous.

2578-2714

Limestone, brown, buff, grey, argillaceous and silty; some shale, grey, calcareous, micromicaceous.

Landry Formation

Top at 707 m (2319 ft) below sea-level.

Thickness: 9 m (30 ft).

2714-2744

Limestone, dark grey-brown, grey-buff, micrograined, argillaceous, some pelletoid, fossiliferous (ostracods).

Arnica Formation

Top at 716 m (2349 ft) below sea-level.

Thickness: 44 m (144 ft).

2744-2888

Dolomite, brown, micro- to finely crystalline with some intercrystalline porosity.

Fort Norman Formation

Top at 760 m (2493 ft) below sea-level.

Thickness: 200 m (656 ft).

Borehole footage

Lithology

2888-3503

Anhydrite, buff to grey; some dolomite, brown, microcrystalline.

3502-3544

Dolomite, pale buff to buff, some pale grey and grey, very finely to medium crystalline; traces of shale, green-grey, micropyrritic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 700 m (2293 ft).

Mount Kindle Formation

Top at 960 m (3149 ft) below sea-level.

Thickness: 103 m (-37 ft).

3544-3881

Dolomite, buff to brown, very finely and finely crystalline with trace of intercrystalline porosity.

Franklin Mountain Formation

Top at 1063 m (3486 ft) below sea-level.

Thickness: >299 m (>982 ft).

3881-3962

Dolomite, pale buff, some pink and some pale grey to grey, micro- to very finely crystalline and finely to medium crystalline, grading downward to finely to coarsely crystalline; traces of shale, bright green and pale grey.

Cherty member, thickness: 265 m (868 ft).

3962-4830

Dolomite: at the top, creamy white, very finely to medium crystalline; grades downward, through pale buff, to buff, finely crystalline with some medium and coarsely crystalline; in the lower part, buff, brown, some grey, mainly finely crystalline; some chert, white, milky white, buff, in part oolite, and some clear quartz; much chert at 2962-4000, 4160-4190 and 4480-4520 ft.

4830-4863

Dolomite, pale buff to brown, some grey, micro- to finely crystalline.

4863

Total depth: 1482 m.

38. F-57t

Log of Shell Tree River F-57.

Location: 67°06'27"N., 132°25'40"W.

Elevation of Kelly Bushing: 93 m (305 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at bedrock, 93 m (305 ft) above sea-level.  
Thickness: 693 m (2273 ft).

0-2273

Shale, grey, micromicaceous; shale, very dark brown-grey, silty; downsection, some siltstone, dark brown-grey, argillaceous, brown-black at the base.

DEVONIAN

Thickness: 847 m (2779 ft).

Horn River Formation

Top at 600 m (1968 ft) below sea-level.  
Thickness: 91 m (297 ft).

2273-2570

Shale, black, bituminous, in part silty and hard; traces of pyrite.

2545

Top Bluefish Member, thickness: 8 m (25 ft).

Devonian carbonates assemblage

Thickness: 757 m (2482 ft).

Hume Formation

Top at 690 m (2265 ft) below sea-level.  
Thickness: 96 m (314 ft).

Borehole footage

Lithology

2570-2884

Limestone and shale: limestone, buff and white, micrograined, fossiliferous, in part silty and argillaceous; shale, buff-grey, flaky, calcareous, micromicaceous; grades downward to limestone, buff, aphanitic to micrograined with some limestone, grey, silty, argillaceous and some shale, dark grey, silty, calcareous.

Landry Formation

Top at 786 m (2579 ft) below sea-level.  
Thickness: 243 m (798 ft).

2884-3682

Limestone: at the top, buff, brown, aphanitic, in part pelletoids; grades downward to pale buff, buff, aphanitic and microcrystalline, in part dolomitic, and, in the lower part, with some dolomite, brown, microcrystalline, sucrosic.

Arnica Formation

Top at 1029 m (3377 ft) below sea-level.  
Thickness: 235 m (770 ft).

3682-4452

Dolomite, brown, dark brown, buff, micro- and finely crystalline, sucrosic, in part with good intercrystalline porosity, especially between 4050 and 4200 ft.

Tatsieta Formation

Top at 1264 m (4147 ft) below sea-level.  
Thickness: 183 m (600 ft).

4452-4526

Limestone, dolomite and shale: limestone, pale buff, dolomitic; dolomite, pale grey, silty, calcareous; shale, pale green, micropyrrite, in part silty and dolomitic.

4526-4792

Limestone, creamy white to buff, microcrystalline, in part dolomitic, grading to calcareous dolomitic.

4792-5052

Limestone, buff to white, aphanitic; some shale, pale green and pale green-brown.

Borehole footage

Lithology

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1571 m (5154 ft).

Peel Formation

Top at 1447 m (4747 ft) below sea-level.  
Thickness: 260 m (854 ft).

5052-5438

Dolomite and shale: dolomite, pale grey, buff, microcrystalline, silty; shale, dark brown-grey, silty, dolomitic; grades in the lower part to: dolomite, creamy white and buff, micro- and very finely crystalline; dolomite, pale buff, pale grey, silty; and traces of shale, pale green.

5438-5906

Dolomite, buff, pale grey-buff, microcrystalline, in part silty; in the lower part, dolomite is silty and argillaceous, with shale, dark brown-grey, silty, dolomitic.

Mount Kindle Formation

Top at 1707 m (5601 ft) below sea-level.  
Thickness: >180 m (>589 ft).

5906-6495

Dolomite, brown, buff, very finely to finely crystalline, sucrosic, with some medium crystalline; trace of calcite veins in the upper part.

6495

Total depth: 1980 m.



59. F-72

Log of W. coast North Porcupine Y.T. F-72.

Location: 67°31'23"N., 137°59'06"W.

Elevation of Kelly Bushing: 349 m (1146 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to neutron log.

Borehole footage

Lithology

UPPER PALEOZOIC

Jungle Creek Formation

Top at bedrock, 345 m (1133 ft) above sea-level.  
Thickness: 291 m (944 ft).

13-942

Samples missing. (R) Siltstone, shale, sandstone,  
orthoquartzite, some limestone.

942-968

Limestone, buff, micro- to very finely crystalline,  
bioclastic.

90-900 ft - age: Mississippian to Permian (*see*  
Appendix I, RRNA-059-1973).

UPPER DEVONIAN

"Imperial"

Top at 54 m (178 ft) above sea-level.  
Thickness: 616 m (2022 ft).

968-2990

Shale: in the upper part dark to very dark grey  
(in the top 10 m, maroon bands, streaks and  
mottling), micromicaceous, slickensided, with  
some siltstone, dark grey, argillaceous and  
rare siltstone, dark grey, coarse-grained,  
argillaceous; grades downward to, in the lower  
part, dark to very dark grey, silty, micro-  
micaceous, in part grading to siltstone, dark  
grey, argillaceous, and with siltstone, grey,  
coarse-grained, in part argillaceous, and many  
slickensides.

1030-3000 ft - age: Middle to Upper Devonian,  
Givetian to Frasnian (*see* Appendix I, RRNA-  
059-1973).

Borehole footage

Lithology

CAMBRIAN-DEVONIAN

Road River Formation  
(Devonian carbonates equivalent)

Top at 562 m (1844 ft) below sea-level.  
Thickness: 467 m (1533 ft).

2990-4523

Shale, dark grey to black, micromicaceous, in part silty, grading to argillaceous siltstone; rare siltstone, grey, coarse-grained, argillaceous; traces of dolomite-filled fracture; some slickensides.

3000-4600 ft - age: ?Early to ?Middle Devonian.  
(see Appendix I, RRNA-059-1973).

Road River Formation  
(?Peel equivalent)

Top at 1029 m (3377 ft) below sea-level.  
Thickness: 786 m (2579 ft).

4523-7102

Shale, very dark brown-grey to black, silty, micromicaceous, grading to argillaceous siltstone; rare siltstone, very dark grey, coarse-grained, argillaceous; trace of dolomite, white coarsely crystalline, filling fractures; traces of pyrite; some slickensides.

4600-4900 ft - age: ?Silurian (see Appendix I, RRNA-059-1973).

Road River Formation  
(?Mount Kindle equivalent)

Top at 1815 m (5956 ft) below sea-level.  
Thickness: >87 m (>286 ft).

7102-7388

Shale, very dark grey to black, in part dolomitic, in part siliceous grading to argillaceous chert many highly polished surfaces; much fracturing with quartz and white dolomite filling; some slickensides and contorted bedding; pyrite throughout, finely disseminated, very thinly bedded and in fracture fill.

7388

Total depth: 2252 m.

40. Log of IOE Clare F-79.  
Location: 67°08'20"N., 133°14'20"W.  
Elevation of Kelly Bushing: 109 m (357 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at bedrock, 91 m (297 ft) above sea-level.  
Thickness: 1095 m (3591 ft).

- 60-3651 Shale, siltstone and sandstone: shale, dark grey, micromicaceous, in part silty; siltstone, brown-grey, in part argillaceous; siltstone, grey, coarse-grained; sandstone, grey, very fine-grained, chert/quartz, silty, in part argillaceous.

DEVONIAN

Thickness: 743 m (2437 ft).

Horn River Formation

Top at 1004 m (3294 ft) below sea-level.  
Thickness: 84 m (277 ft).

- 3651-3928 Shale, black, bituminous; traces of pyrite.  
3908 Top Bluefish Member, thickness: 6 m (20 ft)

Devonian carbonates assemblage

Thickness: 658 m (2160 ft).

Hume Formation

Top at 1088 m (3571 ft) below sea-level.  
Thickness: 96 m (315 ft).

- 3928-4243 (Poor samples). Limestone, buff, grey, micro-grained, in part argillaceous and silty; some shale, grey, calcareous.

Borehole footage

Lithology

Landry Formation

Top at 1184 m (3886 ft) below sea-level.  
Thickness: 255 m (837 ft).

4243-5080

Limestone, brown, buff, aphanitic, grading downward to buff and pale buff with some pelletoid and with some dolomite, buff, microcrystalline.

Arnica Formation

Top at 1440 m (4723 ft) below sea-level.  
Thickness: 292 m (958 ft).

5080-6038

Dolomite, buff, brown, dark brown, micro- and very finely crystalline, in part sucrosic with some intercrystalline porosity.

Tatsieta Formation

Top at 1732 m (5681 ft) below sea-level.  
Thickness: 15 m (50 ft).

6038-6088

Limestone, dolomite and shale: limestone, pale buff, pale grey-buff, aphanitic to micrograined, slightly pyritic; dolomite, pale grey, slightly calcareous; shale, very dark grey, silty; no green shale was found.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1405 m (4610 ft).

Peel Formation

Top at 1747 m (5731 ft) below sea-level.  
Thickness: 233 m (764 ft).

6088-6852

Dolomite, pale buff to pale grey, aphanitic to microcrystalline, in part argillaceous or silty; some interbedded shale in the lower 50 m.

Borehole footage

Lithology

Mount Kindle Formation

Top at 1980 m (6495 ft) below sea-level.  
Thickness: 365 m (1196 ft).

6852-8048

Dolomite, buff, brown, dark brown, very finely  
to finely crystalline, in part sucrosic.

Franklin Mountain Formation

Top at 2344 m (7691 ft) below sea-level.  
Thickness: >73 m (>238 ft).

8048-8286

Dolomite, pale buff, finely to medium and  
coarsely crystalline.

8286

Total depth: 2526 m.

41. G-06

Log of Dome Stony G-06.

Location: 67°35'28"N., 135°15'50"W.

Elevation of Kelly Bushing: 57 m (186 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 31 m (103 ft).

Basal beds (Lower Cretaceous?).

60(S)-163

Sandstone, pale grey, fine- and very fine-grained, poorly sorted, quartz/chert; at the base, glauconitic.

UPPER DEVONIAN

Imperial Formation

Top at 7 m (23 ft) above sea-level.

Thickness: 1497 m (4913 ft).

163-5076

Siltstone, shale and sandstone: siltstone, grey and brown-grey, coarse-grained, some fine-grained and argillaceous, micaceous; shale, very dark grey, silty, micromicaceous; mainly in the upper part, sandstone, brown-grey, very fine- and fine-grained, poorly sorted, chert/quartz, silty; some sandstone, medium-grained with angular coarse sand grains of chert; at 720-730 ft, coarse and very coarse chert and quartz sand in dark grey, siliceous, argillaceous matrix.

DEVONIAN

Thickness: 416 m (1364 ft).

Horn River Formation

Top at 1490 m (4890 ft) below sea-level.

Thickness: 52 m (172 ft).

5076-5248

Shale, black, bituminous; trace of pyrite.

Borehole footage

Lithology

Devonian carbonates assemblage

Thickness: 363 m (1192 ft).

Hume Formation (transitional)

Top at 1543 m (5062 ft) below sea-level.

Thickness: 62 m (202 ft).

5248-5450

Limestone, brown-grey, dark brown, white, argillaceous and silty; some sparry calcite; some shale, brown-black bituminous.

Landry Formation

Top at 1604 m (5264 ft) below sea-level.

Thickness: 75 m (246 ft).

5450-5640

Limestone, buff, aphanitic; limestone, buff and white, micro- to finely crystalline, in part skeletal; black bituminous streaks.

5640-5696

Calcite, white and clear, coarsely crystalline.

Arnica Formation

Top at 1679 m (5510 ft) below sea-level.

Thickness: 199 m (654 ft).

5696-5970

Dolomite, pale grey-buff, brown, dark brown, micro- and very finely crystalline, in part calcareous, completely silicified in the top 10 m (to 5730 ft); some limestone, buff, aphanitic to microcrystalline with trace of skeletal structure; at 5770-5820 ft, very much calcite.

5970-6100

Calcite, white and clear, coarsely crystalline.

6100-6350

Dolomite, brown, dark brown, buff, microcrystalline, in part calcareous; some calcite, white, and some limestone, buff, microcrystalline to aphanitic; black bituminous streaks and patches.

Borehole footage

Lithology

Tatsieta Formation

Top at 1879 m (6164 ft) below sea-level.  
Thickness: 27 m (90 ft).

6350-6440

Limestone, buff, aphanitic; some pyrite, some shale, pale grey-green, micropyrite.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1268 m (4160 ft).

Peel Formation (Limestone facies)

Top at 1906 m (6254 ft) below sea-level.  
Thickness: 360? m (1180? ft).

6440-6930

Limestone, buff to white, mainly microcrystalline with some very finely crystalline and some aphanitic; much black bituminous residue.

6930-7050

Calcite, white and clear, coarsely crystalline.

7050-7350

Limestone, pale buff and white, microcrystalline; some black bituminous patches and streaks; much calcite.

7350-7620

Samples missing.

Mount Kindle Formation  
(Limestone facies?)

Top at 2266? m (7434? ft) below sea-level.  
Thickness: 177? m (580? ft).

7620-8200

Samples missing.

Franklin Mountain Formation

Top at 2443? m (8014? ft) below sea-level.  
Thickness: >30 m (>100 ft).

8200-8300

Samples missing.

8300

Total depth: 2530 m.



42. G-08

Log of Socony Chance Y.T. G-08.

Location: 66°07'18"N., 137°30'50"W.

Elevation of Kelly Bushing: 524 m (1720 ft).

Well log prepared by writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 1195 m (3920 ft).

Basal beds (Lower Cretaceous?).

3904-3920

(Below siltstone and shale). Sandstone, dark grey, fine-grained, very silty and argillaceous, very pyritic, in part glauconitic; some shale, black, and some siltstone, dark brown-grey, argillaceous.

UPPER PALEOZOIC

Hart River Formation

Top at 671 m (2200 ft) below sea-level.

Thickness: >385 m (>1263 ft).

3920-3930

Limestone and chert: limestone, grey-buff to pale buff and white, silty; chert, pale grey with brown specks.

3930-3960

Samples missing - cored (R) limestone with some sandstone.

3960-4102

Limestone, grey-buff to white, in part silty and in part argillaceous; some chert, pale grey with brown specks.

4102-4242

Shale, dark grey and black; in part very calcareous, grading to limestone, argillaceous, fossiliferous; in part very silty and sandy, grading to siltstone, argillaceous, sandy.

Chance Sandstone Member.

Borehole footage

Lithology

4242-4776

Sandstone, grey, very poorly sorted, fine- to very coarse-grained, mainly chert, angular to sub-rounded; some conglomerate, chert, brown, grey, white, smoky, pale grey with brown specks; rare black sandy shale breaks.

4776-5183

Limestone and chert: limestone, grey-buff to buff and white, micritic; chert, mainly pale grey with brown streaks and specks; traces of chert, brown and smoky translucent.

5183

Total depth: 1580 m.

43. G-26

Log of AT. Beavertail G-26.

Location: 65°55'25"N., 128°34'25"W.

Elevation of Kelly Bushing: 112 m (367 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

Thickness: 572 m (1878 ft).

Horn River Group

Thickness: 214 m (702 ft).

Ramparts Formation

Top at bedrock, 100 m (327 ft) above sea-level.

Thickness: 144 m (474 ft).

Platform member and Siltstone lentil.

40(S)-80(S)

Limestone, pale buff, buff, brown and white,  
micrograined.

80-110(S)

Limestone, grey-buff, bioclastic, in part very  
argillaceous, grading to calcareous shale;  
some siltstone, calcareous.

110-130(S)

Siltstone, brown, calcareous, oil-stained.

130-210(S)

Siltstone, pale grey, very calcareous, grading to  
silty limestone; siltstone, brown, calcareous  
oil-stained.

210-250(S)

Shale, pale grey, calcareous, micromicaceous.

250-290(S)

Siltstone, brown, calcareous, oil-stained.

290-408

Siltstone, white, pale buff, very calcareous,  
grading to silty limestone.

408-514

Limestone, buff, brown, white, in part dolomitic,  
in part silty and argillaceous, grading to  
siltstone and shale; shell fragments.

Borehole footage

Lithology

Hare Indian Formation

Top at 45 m (147 ft) below sea-level.  
Thickness: 69 m (228 ft).

514-702 Shale, grey, micromicaceous, grading downward  
to dark grey, non-calcareous.

Bluefish Member, thickness: 12 m (40 ft).

702-742 Shale, brown-black, calcareous, at the top with  
spores; limestone, brown-black speckled  
white, very argillaceous.

Devonian carbonates assemblage

Thickness: 358 m (1176 ft).

Hume Formation

Top at 114 m (375 ft) below sea-level.  
Thickness: 102 m (334 ft).

742-820 Limestone, buff, grey, brown, in part silty and  
argillaceous; shale, pale grey, grey, brown,  
calcareous, in part micromicaceous.

820-900 Limestone, pale buff, buff, micrograined, dense,  
fossiliferous.

900-1010 Limestone, grey, pale buff, brown, in part silty  
and argillaceous; shale, pale grey, calcareous,  
micromicaceous.

1010-1076 Limestone, grey, grey-buff, brown, micrograined,  
dense, with interbedded shale, pale grey,  
calcareous, micromicaceous.

Landry Formation

Top at 216 m (709 ft) below sea-level.  
Thickness: 12 m (38 ft).

1076-1114 Limestone, brown, aphanitic; limestone, pale brown,  
micrograined, dolomite, brown, microcrystalline.

Borehole footage

Lithology

Arnica Formation

Top at 228 m (747 ft) below sea-level.  
Thickness: 93 m (304 ft).

1114-1418

Dolomite, brown, very finely crystalline (except microcrystalline at 1300-1350 ft), in part sucrosic with porosity; at the top, oil staining.

Fort Norman Formation

Top at 320 m (1051 ft) below sea-level.  
Thickness: 152 m (590 ft).

1418-1918

Anhydrite, buff, pale buff, white, brown; some dolomite.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness: 806 m (2645 ft).

Mount Kindle Formation

Top at 473 m (1551 ft) below sea-level.  
Thickness: 170 m (559 ft).

1918-2477

Dolomite, buff, pale buff: in the upper part, micro- to very finely crystalline; below 2260 ft, very finely to finely crystalline, sucrosic with vuggy porosity.

Franklin Mountain Formation

Top at 643 m (2110 ft) below sea-level.  
Thickness: 636 m (2086 ft).

2477-2622

Dolomite, creamy white, pale buff, pink, pale green, very finely to medium and coarsely crystalline, in part sandy grading to sandstone, white, medium-grained, poorly sorted, very dolomitic; siltstone, pale green, dolomitic; some shale, pale green, micropyrritic.

Cherty member, thickness: 254 m (832 ft).

Borehole footage

Lithology

- 2622-3454 Dolomite, creamy white, micro- to finely and medium crystalline; some chert, white, abundant at 2790-2820 and 2910-2930 ft; dolomite colour creamy white and pale buff below 3100 ft.
- 3454-4000 Dolomite, buff, brown, pale grey, micro- to finely crystalline.
- 4000-4350 Dolomite, as above, microcrystalline, with some anhydrite.
- 4350-4563 Dolomite, creamy white, pale buff, pale grey, microcrystalline; some interbedded shale, grey dolomitic; at 4415-4450 ft, dolomitic, buff, microcrystalline, sucrosic with intercrystalline porosity.

CAMBRIAN

Clastics-evaporites assemblage

Thickness: >103 m (>337 ft).

Saline River Formation

Top at 1279 m (4196 ft) below sea-level.  
Thickness: >77 m (>253 ft).

Upper clastic member, thickness: 38 m (125 ft).

- 4563-4688 Shale, brick-red, purple, brown, green; dolomite, grey, brown, buff, traces of pink; some siltstone and some sandstone, very finely grained quartzitic.

Salt member, thickness: >39 m (>128 ft).

4688-4816

Halite.

4816-4900

Samples missing.

4900

Total depth: 1494 m.

44. G-31

Log of Inexco Porcupine Y.T. G-31.

Location: 66°20'22"N., 140°06'13"W.

Elevation of Kelly Bushing: 922 m (3025 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER PALEOZOIC

Ford Lake Shale

Top at bedrock, 922 m (3025 ft) below sea-level.  
Thickness: 975 m (3200 ft).

20-3200

Shale, black, variably siliceous and pyritic  
with rare white silica veins and fracture  
filling; traces of slickensiding.

DEVONIAN

Road River Formation  
(Devonian carbonates equivalent)

Top at 53 m (175 ft) below sea-level.  
Thickness: 690 m (2263 ft).

?Upper Ogilvie equivalent, thickness: 273 m (895 ft).

3200-4095

Shale, black, very siliceous, in part pyritic;  
some white silica veins; trace of dolomite; in the  
lower part, shale grades to chert, black,  
argillaceous.

Arnica-Road River transitional unit

Top at 326 m (1070 ft) below sea-level.  
Thickness: 147 m (1368 ft).

4095-5463

Dolomite, dark grey, grey and pale grey, micro-  
to finely and finely crystalline, with white  
dolomite veins and some breccia; some shale,  
black, abundant between 4180 and 4240 ft;  
some crinoid and brachiopod impressions.

Borehole footage

Lithology

5030-5031 ft - age: mid Emsian (late Early Devonian) to early Eifelian (early Middle Devonian). "-- probably from the Ogilvie Formation". (A.W. Norris, *see* Appendix I, I-AWN-1977).

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness: 860 m (2821 ft).

Peel Formation  
(dark dolomite facies)

Top at 743 m (2438 ft) below sea-level.  
Thickness: 55 m (181 ft).

5463-5644

Dolomite, brown-grey to dark grey and black, micro- to very finely crystalline, variably argillaceous and siliceous, with some dolomite veins; in the lower part, some shale, black, dark grey, dolomitic and siliceous, with traces of pyrite.

?Mount Kindle-Road River transitional unit  
(shoreward facies)

Top at 789 m (2619 ft) below sea-level.  
Thickness: 26 m (84 ft).

5644-5728

Mudstone, grey-buff, grey, purple-red, pale purple, green, pink, pale buff; in part sandy to very sandy, grading to orthoquartzite; in part very pyritic, in places to more than 50% pyrite; traces of dolomite, buff, microcrystalline.

Franklin Mountain Formation

Top at 824 m (2703 ft) below sea-level.  
Thickness: 779 m (2556 ft).

5728-c. 7300

Dolomite, white to grey, mainly medium to coarsely crystalline, with some very finely to finely crystalline.

c. 7300-8284

Dolomite, grey, pale grey, dark grey, micro- to finely crystalline; at the base, some interbedded orthoquartzite and shale.



Borehole footage

Lithology

PRECAMBRIAN AND LOWER CAMBRIAN (?)

Tindir Group

Top at 1603 m (5259 ft) below sea-level.

Thickness: 133 m ( 436 ft).

8284-8298

Orthoquartzite, clear to pale green-grey, slightly pyritic.

8298-8720

Shale, purple-red, brick-red, purple, dark grey-green, green, hard; some white dolomite veins.

8720

Total depth: 2658 m.

45. G-55

Log of Shell Arctic Red West G-55.

Location: 66°44'28"N., 133°09'58"W.

Elevation of Kelly Bushing: 45 m (146 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 75 m (247 ft).

Basal beds (Lower Cretaceous?).

216-247

(Below siltstone). Sandstone, pale grey, very fine- and fine-grained, quartzose, in part with chert, in part very glauconitic, in part silty; some coarse sand grains.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 31 m (101 ft) below sea-level.

Thickness: 17 m (55 ft).

247-302

Sandstone and shale: sandstone, buff, fine-grained, poorly sorted, in part quartzitic grading to orthoquartzite, in part kaolinitic, in part with some sub-rounded granules of quartz and black chert and some coal fragments; shale, dark brown, in part with carbonaceous inclusions, in part very sandy.

UPPER DEVONIAN

Imperial Formation

Top at 48 m (156 ft) below sea-level.

Thickness: 1000 m (3280 ft).

302-3582

Shale, very dark grey, silty, micromicaceous; variable amounts of siltstone, dark brown-grey, fine-grained, and siltstone, pale grey, coarse-grained. at 600-800 ft, mainly sandstone, brown, silty and siltstone, pale grey.

Borehole footage

Lithology

DEVONIAN

Thickness: 700 m (2295 ft).

Horn River Group

Top at 1047 m (3436 ft) below sea-level.

Thickness: 74 m (244 ft).

3582-3826

Shale, black, bituminous, some pyrite.

3813

Top Bluefish Member, thickness: 4 m (13 ft).

Devonian carbonates assemblage

Thickness: 635 m (3680 ft).

Hume Formation

Top at 1122 m (3680 ft) below sea-level.

Thickness: 104 m (2051 ft).

3826-4124

Limestone, pale buff, grey, brown, micrograined,  
in part argillaceous and silty, fossiliferous;  
shale, grey, calcareous.

4124-4166

Shale, grey, calcareous, and limestone, argillaceous.

Landry Formation

Top at 1225 m (4020 ft) below sea-level.

Thickness: 370 m (1214 ft).

4166-4280

Limestone, brown, grey-buff, micrograined.

4280-4956

Limestone, buff, brown, aphanitic, in part micro-  
grained, some pelletoid; in the lower part,  
some dolomite.

4956-5080

Dolomite, buff, brown, microcrystalline, in part  
sucrosic; some limestone, brown, micrograined.

5080-5380

Limestone, buff to brown, micrograined and aphanitic,  
some fossil fragments; in the lower part, some  
dolomite.

Borehole footage

Lithology

Arnica Formation

Top at 1595 m (5234 ft) below sea-level.  
Thickness: 122 m (368 ft).

5380-5748

Dolomite, brown, micro- to very finely crystalline, in part sucrosic; in the lower part, some limestone, buff, aphanitic.

Tatsieta Formation

Top at 1707 m (5602 ft) below sea-level.  
Thickness: 39 m (129 ft).

5748-5877

Limestone: in the upper part, brown, buff aphanitic, with interbedded shale, black, brittle and some dolomite, pale grey, aphanitic and microcrystalline; grades downward to, in the lower part, limestone, buff, aphanitic and white, "chalky" with some shale, pale grey-green, micropyrritic.

CAMBRIAN LOWER-DEVONIAN

Ronning Group

Thickness: 1494 m (4903 ft).

Peel Formation

Top at 1747 m (5731 ft) below sea-level.  
Thickness: 273 m (895 ft).

5877-6000

Dolomite and limestone, pale buff, brown, microcrystalline; some dolomite, pale grey, aphanitic.

6000-6772

Dolomite; in the upper part, pale buff, micro- to finely crystalline, with some limestone; grades downward to dolomite, buff, pale grey, microcrystalline.

Mount Kindle Formation

Top at 2020 m (6626 ft) below sea-level.  
Thickness: 440 m (1442 ft).

Borehole footage

Lithology

6772-8214

Dolomite, brown, very finely to finely crystalline.

Franklin Mountain Formation

Top at 2459 m (8068 ft) below sea-level.

Thickness: 782 m (2566 ft).

8214-8900

Dolomite, pale buff, very finely, finely and coarsely crystalline.

Cherty member, thickness: 107 m (350 ft).

8900-9250

Dolomite, pale brown, very finely crystalline, some finely crystalline; some chert, buff, white, grey, brown; much chert at 8930-8940 ft; traces of oolitic structure.

9250-9400

Dolomite, white, buff, brown, very finely to medium crystalline; some calcite, white.

9400-10050

Dolomite, mainly brown to buff, finely crystalline.

10050-10420

Dolomite, white to buff and dark brown, very finely, finely and medium crystalline.

10420-10580

Dolomite, pale buff, buff, grey-brown, micro- to very finely crystalline.

10580-10780

Dolomite, buff to pale buff, microcrystalline to near aphanitic.

CAMBRIAN

Clastics-evaporites assemblage

Thickness: >37 m (>120 ft).

Mount Cap Formation, and may include Saline River Formation

Top at 3241 m (10634 ft) below sea-level.

Thickness: 15 m (50 ft).

10780-10798

Shale and orthoquartzite: shale, green, red, purple, in part silty; orthoquartzite, pink, purple, pale green; trace of glauconite(?).

Borehole footage

Lithology

10798-10830

Sandstone, siltstone and shale: sandstone, purple, pink, some green, silty, quartzitic; siltstone, red, purple; shale, red, purple, micaceous; trace of glauconite; some orthoquartzite, white, pale buff.

?Mount Clark Formation

Top at 3256 m (10684 ft) below sea-level.  
Thickness: >21 m (>70 ft).

10830-10900

Orthoquartzite and siltstone, grey, dark grey, buff, red, pink, purple, pale green, silicified.

10900

Total depth: 3322 m.

46. G-56

Log of McD. South Maida Creek G-56.

Location: 65°35'26"N., 128°10'17"W.

Elevation of Kelly Bushing: 118 m (388 ft).

Well log prepared by the writer, based on drilk cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 278 m (913 ft).

Basal beds (Lower Cretaceous?).

898-913

(Below glauconitic siltstone and shale).

Conglomerate: chert, smoky, grey, white, buff,  
and quartz; some sandstone, quartzose.

UPPER DEVONIAN

Imperial Formation

Top at 160 m (525 ft) below sea-level.

Thickness: 234 m (747 ft).

913-1120

Siltstone and shale: siltstone, pale grey to  
brown-grey, coarse-grained, in part argil-  
laceous, micaceous; shale, dark grey, micro-  
micaceous.

1120-1680

Shale, grey to very dark grey, flaky to splintery,  
micromicaceous; traces of siltstone, grey,  
argillaceous.

DEVONIAN

Thickness: >130 m (>425 ft).

Horn River Group

Thickness: >130 m (>425 ft).

Canol Formation

Top at 394 m (1292 ft) below sea-level.

Thickness: 14 m (47 ft).

Borehole footage

Lithology

1680-1727

Shale, black, bituminous; traces of pyrite.

Allochthonous limestone unit, thickness: 3 m  
(10 ft).

1727-1737

Echinoderm debris (*see* Mackenzie, 1973 -  
Can. J. Earth Sci. v. 10, p. 519-528).

Ramparts Formation

Top at 411 m (1359 ft) below sea-level.  
Thickness: >122 m (>368 ft).

Reef member, thickness: 90 m (296 ft).

1737-2033

Limestone, reef.

Platform member, Carcajou marker.

2033-2096

Interbedded shale and siltstone: shale, very dark  
brown-grey to black, silty, very micaceous,  
slightly calcareous; siltstone, pale grey to  
dark grey, in part argillaceous, micaceous;  
traces of sandstone, very fine-grained, silty.

2096-2105

No sample.

2105

Total depth: 642 m.



47. G-72

Log of IOB Satah River Y.T. G-72.  
Location: 66°51'28"N., 134°13'57"W.  
Elevation of Kelly Bushing: 90 m (294 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 168 m (550 ft).

Basal beds (Lower Cretaceous?).

520(S)-540

(Below siltstone and shale). Siltstone, very pale grey, coarse-grained, micaceous, glauconitic; some sandstone, fine-grained, quartzose, poorly sorted, glauconitic; some sand, coarse, rounded, quartz; trace of chert pebbles.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 78 m (256 ft) below sea-level.

Thickness: 125 m (410 ft).

(Sandstone markers after Lutchman, 1977).

(M2 sandstone, "prodelta facies").

540-765

(Poor samples). Sandstone, siltstone and shale: sandstone, pale buff, poorly sorted, in part conglomeratic (quartz/chert) in part quartzitic grading to orthoquartzite, in part kaolinitic; siltstone, buff, coarse-grained, sandy, quartzitic; shale, brown-grey, silty; some ironstone, brown.

(M1 sandstone, "delta plain facies").

765-960

Poor samples, as above.

UPPER DEVONIAN

Imperial Formation

Top at 203 m (666 ft) below sea-level.

Thickness: 1512 m (4960 ft).

Borehole footage

Lithology

960-5920

Shale and siltstone: shale, very dark grey, micromicaceous, in part silty; siltstone, pale grey, coarse-grained, micaceous, in part grading to sandstone, very fine-grained, silty; siltstone, brown-grey, argillaceous, micromicaceous.

DEVONIAN

Thickness estimated at 726 m (2382 ft).

Horn River Formation

Top at 1715 m (5626 ft) below sea-level.  
Thickness: 70 m (231 ft).

5920-6151

(Poor samples). Shale, black, bituminous, some pyrite.

6130

Top Bluefish Member, thickness: 6 m (21 ft).

Devonian carbonates assemblage

Hume Formation

Top at 1785 m (5857 ft) below sea-level.  
Thickness: 104 m (341 ft).

6151-6492

Limestone, buff, grey, brown, white in part argillaceous and silty, bioclastic, fossiliferous; some interbedded shale, grey, dark grey, calcareous, micromicaceous.

Landry Formation

Top at 1889 m (6198 ft) below sea-level.  
Thickness: >307 m (>1008 ft).

6492-7220

Limestone, brown, buff, aphanitic; in the upper part, much pelletoid; at the base some dolomite, brown, microcrystalline.

7220-7500

Dolomite, buff, brown, dark brown, microcrystalline; in part sucrosic; in the upper part, some limestone, microcrystalline; in the lower part, much limestone, pale buff, aphanitic and microcrystalline, in part dolomitic.

7500

Total depth: 2286 m.

48. H-24

Log of Imperial Sans Sault No. 1.  
Location: 65°43'19"N., 128°49'08"W.  
Elevation of Kelly Bushing: 97 m (318 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to electric log.

Borehole footage

Lithology

MESOZOIC

Thickness: 402 m (1320 ft).

Basal beds (Lower Cretaceous?).

1200-1220

(Below siltstone and shale). Sandstone, pale grey, very fine-grained, silty, poorly sorted with some coarse grains, quartzose, slightly glauconitic.

1220-1330

Siltstone and shale: siltstone, grey, micaceous, with some coal streaks; shale, dark grey, silty, micromicaceous; at the base, traces of glauconite pellet concentrations and pyrite in the shale.

UPPER DEVONIAN

Imperial Formation

Top at 308 m (1012 ft) below sea-level.

Thickness: 23 m (75 ft).

1330-1405

Shale, dark grey, micromicaceous.

DEVONIAN

Thickness estimated at 718 m (2345 ft).

Horn River Group

Thickness: 361 m (1185 ft).

Ramparts Formation

Top at 331 m (1087 ft) below sea-level.

Thickness: 314 m (1030 ft).

Borehole footage

Lithology

- Reef member, thickness: 133 m (435 ft).
- 1405-1840 Limestone, brown, grey, buff, micro- to very finely crystalline, in part reefoid, in part argillaceous.
- Carcajou marker, 27 m (90 ft).
- 1840-1930 Limestone and shale: limestone, brown, grey to white, in part silty and argillaceous; shale, very dark grey, calcareous.
- Siltstone lentil, thickness: 154 m (505 ft).
- 1930-2435 Siltstone and limestone: siltstone, brown-grey, calcareous, micaceous, grading to limestone, grey-buff, very silty, micaceous.

Hare Indian Formation

- Top at 645 m (2117 ft) below sea-level.  
Thickness: 47 m (155 ft).
- 2435-2560(S) Shale, dark brown-grey, variably calcareous, micromicaceous.
- Bluefish Member, thickness: 9 m (30 ft).
- 2560-2590 Shale, black, non-calcareous; at the base, some shale, brown-black, very calcareous.

Devonian carbonates assemblage

Thickness: >214 m (>701 ft).

Hume Formation

- Top at 693 m (2272 ft) below sea-level.  
Thickness: 102 m (335 ft).
- 2590-2745 Limestone, brown, grey, buff, white, bioclastic, in part finely crystalline and possibly fragmental; at 2610-2680 ft, much shale, brown-grey, calcareous.

Borehole footage

Lithology

2745-2925

Limestone and shale: limestone, brown, grey, white, bioclastic, fossiliferous; shale, grey, calcareous, micromicaceous.

Landry Formation

Top at 795 m (2607 ft) below sea-level.  
Thickness: 41 m (135 ft).

2925-3060

Limestone, brown, buff, aphanitic with some pelletoid; in the lower part some dolomite, buff, microcrystalline.

Arnica Formation

Top at 836 m (2742 ft) below sea-level.  
Thickness: >70 m (>231 ft).

3060-3291

Dolomite, buff, microcrystalline, some very finely crystalline with slight vuggy porosity.

3291

Total depth: 1003 m.

49. H-34o

Log of AT. Ontaratue H-34.

Location: 66°23'23"N., 132°05'52"W.

Elevation of Kelly Bushing: 142 m (465 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 260 m (852 ft).

Basal beds (Lower Cretaceous?).

812-852

(Below shale). Sandstone, pale grey, very fine-grained, grading to sandy siltstone, quartz/chert; some sand, coarse, rounded, quartz.

UPPER DEVONIAN

Imperial Formation

Top at 118 m (387 ft) below sea-level.

Thickness: 626 m (2055 ft).

852-2907

Shale and siltstone: shale, dark grey, silty, in part micromicaceous; siltstone, dark brown-grey and siltstone, pale grey, coarse-grained, grading to sandstone, very fine-grained.

DEVONIAN

Thickness: 782 m (2565 ft).

Horn River Group

Top at 744 m (2442 ft) below sea-level.

Thickness: 98 m (322 ft).

2907-3229

Shale, black, bituminous, pyritic.

3189

Top Bluefish Member, thickness: 12 m (40 ft).

Borehole footage

Lithology

Devonian carbonates assemblage

Thickness: 684 m (2243 ft).

Hume Formation

Top at 842 m (2764 ft) below sea-level.

Thickness: 119 m (389 ft).

3229-3330

Limestone, buff to brown, micrograined to finely crystalline, fossiliferous.

3330-3618

Shale, dark grey, slightly calcareous, micromicaceous; shale, black bituminous; limestone, buff, fine-grained, fossiliferous.

Landry Formation

Top at 961 m (3153 ft) below sea-level.

Thickness: 421 m (1382 ft).

3618-4370

Limestone, buff to brown, aphanitic to micrograined, in part pelletoid; grades downward to mainly aphanitic.

4370-4600

Dolomite, brown, microcrystalline, in part sucrosic, in part calcareous.

4600-5000

Limestone, buff to brown, micrograined, some aphanitic, traces of pelletoid; some dolomite near the base.

Arnica Formation

Top at 1382 m (4535 ft) below sea-level.

Thickness: 75 m (246 ft).

5000-5246

Dolomite, brown, micro- to finely crystalline, calcareous, in part sucrosic with intercrystalline porosity.

Tatsieta Formation

Top at 1457 m (4781 ft) below sea-level.

Thickness: 69 m (226 ft).

Borehole footage

Lithology

5246-5472

Limestone: at the top, pale buff, aphanitic to microcrystalline, in part slightly dolomitic; grades downward to grey-buff, argillaceous, with some shale, very dark grey, calcareous.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness: 1216 m (3990 ft).

Peel Formation

Top at 1526 m (5007 ft) below sea-level.

Thickness: 237 m (776 ft).

5472-5640?

Dolomite, pale grey, microsugrosic; some interbedded shale, very dark grey, silty, micromicaceous.

5640?-6248

Dolomite, grey, grey-buff, some brown, microcrystalline, in part silty; in the lower part, some dolomite, buff, very finely crystalline.

Mount Kindle Formation

Top at 1763 m (5783 ft) below sea-level.

Thickness: 200 m (655 ft).

6248-6903

Dolomite, buff, brown, micro- to finely crystalline, in part sugrosic; in the basal 44 m (below 6760 ft) some calcite, white, coarsely crystalline.

Franklin Mountain Formation

Top at 1962 m (6438 ft) below sea-level.

Thickness: 780 m (2559 ft).

6903-7100

Dolomite, buff, pale buff, micro- to finely crystalline, some medium crystalline.

Cherty member, thickness 268 m (880 ft).



Borehole footage

Lithology

- 7100-7980 Dolomite, creamy white, pale buff, buff, very finely to medium and coarsely crystalline; some clear quartz and chert; at 7210-7250 ft, much chert, pale buff, white, in part replacing oolite.
- 7980-9280 Dolomite, pale buff, grey-buff, brown-grey, dark grey-brown, micro- and very finely crystalline.
- 9280-9462 Dolomite, pale buff, grey-buff, dark brown-grey, microcrystalline to aphanitic, in part argillaceous.

CAMBRIAN

Clastics-evaporites assemblage

Thickness: 226 m (742 ft).

Saline River Formation

Top at 2742 m (8997 ft) below sea-level.  
Thickness: 39 m (129 ft).

- 9462-9525 Shale, grey-green, purple, silty.
- 9525-9591 Red beds: siltstone, siliceous, sandy; orthoquartzite; sand, coarse; shale, pink, red, pale purple, trace of green.

Mount Cap Formation

Top at 2782 m (9126 ft) below sea-level.  
Thickness: 95 m (311 ft).

- 9591-9902 Orthoquartzite, siltstone and shale: orthoquartzite, grey, buff, greenish and pink, in part glauconitic(?); siltstone, purple pink, in part sandy; shale, purple, green-grey, silty, micaceous, siliceous.

?Mount Clark Formation

Top at 2876 m (9437 ft) below sea-level.  
Thickness: 92 m (302 ft).

- 9902-9938 Orthoquartzite, pink.

Borehole footage

Lithology

9938-10138

Siltstone, green, red, yellow, silicified.

10138-10204

Orthoquartzite, pale pink to grey.

PROTEROZOIC

Top at 2968 m (9739 ft) below sea-level.

Argillite unit, thickness: 876 m (2874 ft).

10204-10740

Argillite, black, siliceous.

10740-11000

Orthoquartzite, dark grey, green, some red-brown;  
some siltstone, silicified, and argillite.

11000-12260

Argillite, black, siliceous.

12260-12600?

Argillite, pale grey, grey-green, grey-yellow,  
very siliceous, grading to chert.

12600?-13078

Argillite, black, siliceous.

Dolomite unit, thickness: >89 m (>292 ft).

13078-13370

Dolomite, pale buff to grey-buff, pale green,  
microcrystalline; trace of chert, green.

13370

Total depth: 4075 m.

50. H-34w

Log of Union Wolverine H-34.

Location: 68°23'19"N., 130°38'00"W.

Elevation of Kelly Bushing: 146 m (478 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at bedrock, 142 m (465 ft) above sea-level.  
Thickness: 274 m (899 ft).

13-80

Samples missing.

80-912

Shale, dark grey, micromicaceous; some siltstone.

DEVONIAN

Thickness: 761 m (2497 ft).

Horn River Group

Thickness: 189 m (621 ft).

Canol Formation

Top at 132 m (434 ft) below sea-level.  
Thickness: 57 m (188 ft).

912-1100

Shale, black, bituminous; some pyrite at the base.

Hare Indian Formation

Top at 190 m (622 ft) below sea-level.  
Thickness: 132 m (433 ft).

1100-1492

Shale and siltstone: shale, black, in part siliceous, mostly micaceous; some shale, dark grey, very micaceous; siltstone, grey, pale grey, micaceous; some chert, black with white specks.

Borehole footage

Lithology

Bluefish Member, thickness: 12 m (41 ft).

1492-1533

Limestone and shale: limestone, black, argillaceous,  
in part microcoquina; shale, black, calcareous.

Devonian carbonates assemblage

Thickness: 572 m (1876 ft).

Hume Formation

Top at 322 m (1055 ft) below sea-level.

Thickness: 53 m (175 ft).

1533-1646

Limestone, bioclastic, fossiliferous.

1646-1708

Limestone and shale.

Landry Formation

Top at 375 m (1230 ft) below sea-level.

Thickness: 225 m (738 ft).

1708-2446

Limestone: in the upper part brown, aphanitic  
and pelletoid; grades downward to, in the  
lower part, pale buff, microcrystalline some  
pelletoid, in part dolomitic, with some  
dolomite, pale buff, micro- and very finely  
crystalline.

Arnica Formation

Top at 600 m (1968 ft) below sea-level.

Thickness: 212 m (694 ft).

2446-3140

Dolomite, buff, brown, dark brown, micro- very  
finely and finely crystalline, in part  
sucrosic; some good intercrystalline porosity.

Tatsieta Formation

Top at 811 m (2662 ft) below sea-level.

Thickness: 82 m (269 ft).

Borehole footage

Lithology

3140-3330

Limestone, pale buff, aphanitic; some shale, grey-green, waxy, in part micropyrritic.

3330-3370

Dolomite, pale buff to pale grey, microcrystalline.

3370-3409

Limestone and dolomite: limestone, pale buff, aphanitic; dolomite, as above; some shale, green, in part pyritic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1389 m (4556 ft).

Peel Formation

Top at 893 m (2931 ft) below sea-level.

Thickness: 232 m (761 ft).

3409-4170

Dolomite: at the top, grey-buff to pale grey, microsugrosic; grades downward through dark brown, silty; in the lower part with much coarsely crystalline dolomite filling fractures.

Mount Kindle Formation

Top at 1125 m (3692 ft) below sea-level.

Thickness: 242 m (795 ft).

4170-4965

Dolomite, buff to brown, mainly micro-, very finely and finely crystalline, in part sugrosic with some intercrystalline porosity.

Franklin Mountain Formation

Top at 1368 m (4487 ft) below sea-level.

Thickness: >528 m (>1733 ft).

4965-5490

Dolomite, creamy white to pale buff with some pale grey, medium and coarsely crystalline.

Cherty member, thickness: >368 m (>1208 ft).

Borehole footage

Lithology

5490-6373

Dolomite, at the top, pale buff, coarsely crystalline, grading downward to, in the lower part, creamy white to pale buff, medium and coarsely crystalline with some micro- and very finely crystalline; some chert, white, milky white, pale buff-grey, and some clear quartz; much chert at 5500-5530 and 6110-6130 ft.

6373-6698

Dolomite, buff, grey-buff to brown and pale grey, mainly micro- and very finely crystalline with some finely and medium crystalline; some chert buff, pale grey, in part oolitic, and some clear quartz; dolomite grades downward to pale buff to pale grey, medium and coarsely crystalline, with traces of chert, translucent, buff-grey; deepest observed occurrence of chert at 6670-6680 ft.

6698

Total depth: 2042 m.

51. H-37

Log of Shell Trail River Y.T. H-37.  
Location: 66°36'16"N., 134°50'59"W.  
Elevation of Kelly Bushing: 394 m (1294 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 646 m (2120 ft).

Basal beds (Lower Cretaceous?).

2034-2120

(Below shale). Sandstone and siltstone: sandstone, pale grey, fine-grained, poorly sorted with some coarse grains, quartzose, glauconitic; siltstone, grey, in part very glauconitic.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 252 m (826 ft) below sea-level.

Thickness: 1198 m (3930 ft).

(Sandstone markers after Lutchman, 1977).

2120-2260

Shale, brown-grey, micromicaceous; some interbedded quartzite sandstone.

(M7 sandstone, "delta plain facies").

2260-2745

Sandstone and shale: sandstone, grey, fine-grained, kaolinitic, quartzitic; shale, brown-grey, micromicaceous; in the lower part, sandstone is very kaolinitic, and shale is black.

2745-2912

Shale black, splintery.

(M6 sandstone, "delta plain facies").

2912-3145

Shale, black, splintery.

3145-3400

Shale, black, splintery.

(M5 sandstone, "interdistributary bay facies").

3400-3548

Shale, as above, with thinly interbedded sandstone, as above.

Borehole footage

Lithology

	(M4 sandstone, "delta plain facies").
3548-3884	Sandstone, pale grey, very poorly sorted, kaolinitic, mainly quartzose with scattered chert granules; in the lower part some shale, brown-black, and some puddingstone, red-brown.
3884-4094	Shale, brown-black. (M3 sandstone, "delta front facies").
4094-4140	Sandstone, grey and pale grey, fine-grained and medium-grained, poorly sorted, kaolinitic, in part porous, in part conglomeratic.
4140-4330	Shale, brown, black. (M2 sandstone, "delta front facies").
4330-4838	Interbedded sandstone and shale: sandstone, grey, pale grey, fine and medium-grained, poorly sorted, kaolinitic, in part quartzitic grading to orthoquartzitic; shale, brown-black.
4838-5781	Shale, dark grey and brown-black, in part silty.
5781-6050	Sandstone, grey, poorly sorted, conglomeratic (angular chert), in part quartzitic; some orthoquartzite; interbedded shale, very dark grey, and siltstone, grey, coarse-grained, in part sandy.

UPPER DEVONIAN

Imperial Formation

Top at 1450 m (4756 ft) below sea-level.  
Thickness: 856 m (2810 ft).

6050-8860	Shale, very dark grey; some siltstone, dark grey-brown, in part coarse-grained, in part argillaceous; at the base, siltstone predominant.
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DEVONIAN

Thickness: 811 m (2661 ft).



Borehole footage

Lithology

Horn River Formation

Top at 2306 m (7566 ft) below sea-level.  
Thickness: 4 m (12 ft).

8860-8872

Shale, black, bituminous.

Devonian carbonates assemblage

Thickness: 807 m (2649 ft).

Hume Formation

Top at 2310 m (7578 ft) below sea-level.  
Thickness: 88 m (289 ft).

8872-9161

Limestone, brown, black, and buff, sparry calcite, fossiliferous, in part argillaceous; some free bitumen; some shale, dark grey and black.

Landry Formation

Top at 2398 m (7867 ft) below sea-level.  
Thickness: 694 m (2277 ft).

9161-9308

Limestone, brown, dark brown, buff, aphanitic; in the lower part, grades to micrograined, with some shale, grey, calcareous, micromicaceous.

9308-9750

Shale and limestone: shale, brown-grey, calcareous, micromicaceous; shale, black, micromicaceous; limestone, buff-grey, argillaceous.

9750-10350

Limestone, pale buff and white, coarse-grained, "chalky".

10350-10700

Limestone, brown, buff, white, micro- fine- and medium-grained, in part argillaceous, sparry, some "chalky" texture; some limestone, brown-black, argillaceous, grading to shale.

10700-10915

Limestone, very dark brown, aphanitic, argillaceous.

10915-11438

Limestone, brown and white, micrograined, in part "chalky" textured, becoming, lower down, in part dolomitic.

Borehole footage

Lithology

Tatsieta Formation

Top at 3092 m (10144 ft) below sea-level.  
Thickness: 25 m (83 ft).

11438-11521

Limestone: in the upper part, brown, aphanitic; with some buff and white, micrograined, "chalky", in part argillaceous grading to shale, grey-brown, calcareous; grades downward to, in the lower part, buff, pale buff, brown, aphanitic, with shale, pale grey-green, in part micropyrritic, aphanitic, very argillaceous.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1189 m (3900 ft).

Peel Formation

Top at 3117 m (10227 ft) below sea-level.  
Thickness: >210 m (>689 ft).

11521-12210

Dolomite, creamy white, pale buff, aphanitic; in part calcareous; in the upper part, some limestone, "chalky" textured; dolomite grades downward to pale buff, buff, grey-buff, microcrystalline to aphanitic.

12210

Total depth: 3722 m.

52. H-38

Log of I.O.E. Tree River H-38.

Location: 67°17'21"N., 132°21'00"W.

Elevation of Kelly Bushing: 80 m (261 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at bedrock, 3 m (9 ft) below sea-level.  
Thickness: 633 m (2076 ft).

270(S)-2346

Shale, grey, dark grey, micromicaceous, in part silty; some siltstone, grey, in part argillaceous; in the lower part, some siltstone, grey, coarse-grained; at the base, shale is very dark grey to black and silty.

DEVONIAN

Thickness estimated at 694 m (2276 ft).

Horn River Formation

Top at 636 m (2085 ft) below sea-level.  
Thickness: 62 m (204 ft).

2346-2550

Shale, black, bituminous, slightly pyritic, in part siliceous, with some chert, black, argillaceous.

Bluefish Member, missing (gamma-ray criterion).

Devonian carbonates assemblage

Hume Formation

Top at 698 m (2289 ft) below sea-level.  
Thickness: 27 m (87 ft).

2550-2587

Limestone and shale: limestone, brown, grey, white, bioclastic, in part argillaceous and silty; shale, grey, calcareous.

2587-2637

Limestone, as above.

Borehole footage

Lithology

Landry Formation

Top at 724 m (2376 ft) below sea-level.  
Thickness: 248 m (813 ft).

2637-3450

Limestone, buff, brown, aphanitic with traces of pelletoid; grades downward to buff, microcrystalline, in part dolomitic; in the lower part, some dolomite, buff, microcrystalline, in part sacrosic.

Arnica Formation

Top at 972 m (3189 ft) below sea-level.  
Thickness: >228 m (>747 ft).

3450-4197

Dolomite, brown, buff, dark brown, micro- and very finely crystalline, sacrosic, with some intercrystalline porosity.

4197

Total depth: 1279 m.

53. H-47h

Log of Glacier Hare Indian No. 1.

Location: 66°17'23"N., 128°37'30"W.

Elevation of Kelly Bushing: 45 m (148 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

DEVONIAN

Thickness: >158 m (>520 ft).

Horn River Group

Hare Indian Formation

Top at bedrock, 34 m (113 ft) above sea-level.

Thickness: 154 m (505 ft).

35-490

Shale; at the top, pale grey, grading downward  
through grey to brown-grey; calcareous, micro-  
micaceous.

Bluefish Member, thickness: 15 m (50 ft).

490-540

Shale, very dark brown-grey to black, non-cal-  
careous.

Devonian carbonates assemblage

Hume Formation

Top at 119 m (392 ft) below sea-level.

Thickness: >5 m (>15 ft).

540-555

Limestone, brown, grey, microcrystalline.

555

Total depth: 169 m.

54. H-47m

Log of Arco Mountain River H-47.  
Location: 65°46'23"N., 129°07'50"W.  
Elevation of Kelly Bushing: 94 m (308 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC (Cretaceous)

Thickness: 54 m (176 ft).

50(S)-226

(Very poor samples, mostly cavings of drift).  
Traces of Cretaceous lithology: shale,  
black, carbonaceous; coal; at the base,  
possibly sand, coarse quartz.

UPPER DEVONIAN

Imperial Formation

Top at 25 m (82 ft) above sea-level.  
Thickness: 49 m (162 ft).

226-388

Shale, dark grey, in part silty, micromicaceous;  
at the base, siltstone, brown-grey argillaceous,  
micaceous.

DEVONIAN

Thickness: 772 m (2532 ft).

Horn River Group

Thickness: 373 m (1223 ft).

Ramparts Formation

Top at 24 m (80 ft) below sea-level.  
Thickness: 326 m (1071 ft).

Reef member, thickness: 140 m (459 ft).

388-847

Limestone, reef; in the lower part grades to  
buff, aphanitic.

Borehole footage

Lithology

Platform member and Siltstone lentil,  
thickness: 187 m (612 ft).

Carcajou marker, 23 m (75 ft).

- 847-922 Limestone and shale: limestone, brown, buff, black, in part argillaceous and bituminous; shale, black, calcareous, bituminous; grades downward to: limestone, buff-grey to brown and white, in part very silty and argillaceous; and shale, grey, calcareous, micromicaceous.
- 922-946 Limestone, brown, buff, white, bioclastic.
- 946-1412 Siltstone, grey-brown, calcareous, micaceous, grading through pale grey-buff and white, very calcareous, micaceous, to very silty, limestone.
- 1412-1459 Limestone, buff, white, brown, grey, fragmental, in part very silty and argillaceous.

Hare Indian Formation

Top at 351 m (1151 ft) below sea-level.  
Thickness: 46 m (152 ft).

- 1459-1576 Shale, brown-grey, calcareous, micromicaceous.
- Bluefish Member, thickness: 11 m (35 ft).
- 1576-1611 Shale, black, flaky to splintery, non-calcareous; at the base, some shale, brown-black, very calcareous.

Devonian carbonates assemblage

Thickness: 399 m (1309 ft).

Hume Formation

Top at 397 m (1303 ft) below sea-level.  
Thickness: 104 m (341 ft).

- 1611-1781 Limestone, brown, buff, white, micrograined and aphanitic, bioclastic; at 1630-1660 ft, much shale, brown-grey, calcareous.

Borehole footage

Lithology

1781-1952

Limestone and shale: limestone, grey, white, buff, brown, in part silty and argillaceous; shale, grey, pale-grey, brown-grey, calcareous, micro-micaceous.

Landry Formation

Top at 501 m (1644 ft) below sea-level.

Thickness: 137 m (448 ft).

1952-1996

Limestone, brown, buff, white, partly aphanitic, partly pelletoid, some "chalky" textured; some interbedded shale, black, bituminous.

1996-2400

Limestone, brown, dark brown, buff, aphanitic, some pelletoid; some interbedded shale, very dark grey; limestone colour grades downward to buff, pale buff, grey-buff.

Arnica Formation

Top at 638 m (2092 ft) below sea-level).

Thickness: 116 m (382 ft).

2400-2640

Dolomite, brown, buff, micro- to very finely crystalline with some intercrystalline porosity.

2640-2782

Dolomite, brown, microcrystalline, some very finely crystalline with trace of porosity.

Fort Norman Formation (basal tongue)

Top at 754 m (2474 ft) below sea-level.

Thickness: 42 m (138 ft).

2782-2920

Dolomite: in the upper part, pale buff to creamy white and pale grey, very finely to medium crystalline; grades downward to, in the lower part, buff, pale grey, grey, micro- to finely and medium crystalline, with some shale, grey, pale green-grey, in part micropyrrite.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 840 m (2755 ft).



Borehole footage

Lithology

Mount Kindle Formation

Top at 796 m (2612 ft) below sea-level.  
Thickness: >155 m (>507 ft).

2920-3427

Dolomite, buff, brown, micro- to very finely  
crystalline, in part sucrosic.

3427

Total depth: 1045 m.

55. H-57

Log of Shell Tree River East H-57.

Location: 67°06'27"N., 132°24'49"W.

Elevation of Kelly Bushing: 108 m (355 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at bedrock, 108 m (355 ft) above sea-level.  
Thickness: 714 m (2344 ft).

0-2344

Shale and siltstone: shale, grey, silty, micro-  
micaceous; siltstone, grey, argillaceous; at  
the base, shale and siltstone are very dark  
brown-grey.

DEVONIAN

Thickness: 834 m (2736 ft).

Horn River Group

Top at 606 m (1989 ft) below sea-level.  
Thickness: 90 m (296 ft).

2344-2610

Shale, black, bituminous, in part silty, hard;  
traces of pyrite.

2612

Top Bluefish Member, thickness: 9 m (28 ft).

Devonian carbonates assemblage

Thickness: 744 m (2440 ft).

Hume Formation

Top at 696 m (2285 ft) below sea-level.  
Thickness: 99 m (324 ft).

2640-2964

Limestone, buff and white, micrograined, in part  
"chalky" textured; in part silty and argil-  
laceous, fossiliferous; shale, buff-grey,  
flaky, micromicaceous, calcareous, in part  
silty.

Borehole footage

Lithology

Landry Formation

Top at 795 m (2609 ft) below sea-level.  
Thickness: 267 m (876 ft).

2964-3840

Limestone, buff, brown, aphanitic to micrograined, partly pelletoid; in the lower part, limestone is in part dolomitic; near the base, some dolomite, buff, microcrystalline.

Arnica Formation

Top at 1062 m (3485 ft) below sea-level.  
Thickness: 231 m (758 ft).

3840-4598

Dolomite, brown, dark brown, buff, microcrystalline, sucrosic; some intercrystalline porosity.

Tatsieta Formation

Top at 1293 m (4243 ft) below sea-level.  
Thickness: 147 m (482 ft).

4598-4668

Limestone, dolomite and shale: limestone, buff, dolomitic, grading to calcareous dolomite; dolomite, pale grey, brown, silty, calcareous; shale, pale green in part micropyrritic.

4668-4926

Limestone, creamy white, to pale buff, microcrystalline, dolomitic, grading downward to dolomite, buff, very finely crystalline, calcareous.

4926-5080

Limestone, pale buff, mainly aphanitic; some shale, pale green and pale green-brown.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1534 m (5032 ft).

Borehole footage

Lithology

Peel Formation

Top at 1440 m (4725 ft) below sea-level.  
Thickness: 220 m (722 ft).

- 5080-5285 Dolomite, pale buff, pale grey, microsugrosic;  
calcareous; some shale, dark grey, silty.
- 5285-5480 Limestone, buff, microcrystalline, dolomitic,  
grading downward to dolomite.
- 5480-5802 Dolomite, pale buff, buff, grey, brown, micro-  
crystalline, calcareous, in part silty.

Mount Kindle Formation

Top at 1660 m (5447 ft) below sea-level.  
Thickness: >213 m (>698 ft).

- 5802-6500 Dolomite, brown, dark brown, very finely to finely  
crystalline, sugrosic; in the upper part, much  
calcite, white, coarsely crystalline; in the  
lower part, dolomite is finely crystalline,  
partly medium crystalline, with intercrystalline  
porosity and oily odour at base.
- 6500 Total depth: 1981 m.

56. H-59

Log of Shell Peel River Y.T. H-59.  
Location: 66°38'18"N., 134°39'33"W.  
Elevation of Kelly Bushing: 34 m (110 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 259 m (850 ft).

Basal beds (Lower Cretaceous?).

716-970

(Below shale) (Poor samples). Siltstone, shale and sandstone: siltstone, grey, in part glauconitic; shale, grey, dark grey to black, silty, micromicaceous; sandstone, probably fine-grained, very poorly sorted, quartzose; some coarse sand.

897 and 947 ft - age: U. Jurassic - L. Cretaceous (see M.S. Barss; Appendix I, CRS-5-MSB-1969).

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 262 m (860 ft) below sea-level.

Thickness: >468 m (>1534 ft).

(Sandstone markers after Lutchman, 1977).

970-1170

Shale, dark grey-brown to black, splintery to flaky, in part silty.

1011 ft - age: Tournaisian (M.S. Barss; see Appendix I, CRS-5-MSB-1969).

(M6 sandstone, "delta plain facies", implied).

1170-1198

Shale, as above, with thinly interbedded sandstone, pale grey, poorly sorted, quartzitic, kaolinitic and siltstone, coarse-grained.

1198-1640

Shale, as above.

Borehole footage

Lithology

	1200 and 1525 ft - age: Strunian (M.S. Barss; see Appendix I, CRS-5-MSB-1969). (M5 sandstone, "delta plain facies").
1640-1717	Sandstone, pale grey, poorly sorted, quartzitic, kaolinitic and siltstone, grey, coarse-grained, quartzitic, and shale, dark grey-brown to black, silty.
1717-1796	Shale, dark grey-brown to black. (M4 sandstone, "delta plain facies" implied).
1796-1958	Sandstone, pale grey, very poorly sorted, fine- to coarse-grained, kaolinitic, in part quartzitic, quartz/some chert; probably some interbedded shale and siltstone; at the base, sandstone is conglomeratic (granules and pebbles of chert, pale grey, grey, white, buff).
1958-2054	Shale, dark brown-grey to black/splintery to flaky. 2006 ft - age: Strunian (M.S. Barss; see Appendix I, CRS-5-MSB-1969). (M3 sandstone, "delta front facies", implied).
2054-2075	Sandstone, grey and pale grey, fine- and medium-grained, quartzose with some coarse chert grains, kaolinitic, in part quartzitic.
2075-2220	Shale, as above. (M2 sandstone, "delta front facies", implied).
2220-2504	Interbedded sandstone and shale, as above. 2462 ft - age: Strunian (M.S. Barss; see Appendix I, CRS-5-MSB-1969).
2504	Total depth: 763 m.

57. H-71

Log of Mobil Peel Y.T. H-71.

Location: 66°20'29"N., 134°43'35"W.

Elevation of Kelly Bushing: 513 m (1683 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

SURFICIAL DEPOSITS

- 0-100 Unwashed samples reported by Board to be so badly contaminated (wood, rubber etc.) that they were discarded.
- 100-103 Samples 100-150 ft: plenty of drift cavings and also cavings of weathered Tuttle sandstone, but no trace of the characteristic rocks which would be expected at base of Lower Cretaceous in this area (except few coarse sand grains of quartz not unique to L. Cretaceous).

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at bedrock(?), 482 m (1580 ft) above sea-level.  
Thickness: 731 m (2397 ft).

(Sandstone markers implied after Lutchman, 1977).

- 103-508 (Many cavings) Shale, dark brown-grey to black, in part silty and micromicaceous; some sandstone, pale grey, very fine-grained, quartzose, kaolinitic; some siltstone, quartzitic, and orthoquartzite.
- 508-637 Shale, as above, very silty, micaceous, grading to and interbedded with siltstone, grey, argillaceous and siltstone, grey, quartzitic.  
  
(M7 sandstone, "delta plain facies").
- 637-817 Sandstone, pale grey, fine- to medium-grained, angular, poorly sorted, quartzose, kaolinitic, with interbedded shale, black, silty.
- 817-1220 Shale, dark brown-grey to black, in part silty and micromicaceous.

Borehole footage

Lithology

	(M6 sandstone, "delta plain facies").
1220-1275	Sandstone, very poorly sorted, medium- to very coarse-grained, conglomeratic (chert), in part quartzitic.
1275-1455	Shale, brown-black; some siltstone and sandstone, quartzitic.  (M5 sandstone, "delta plain facies").
1455-1475	Sandstone, pale grey, poorly sorted, fine- to medium-grained, quartzose, kaolinitic.
1475-1635	Shale, brown-black; some siltstone and rare sandstone, quartzitic.  (M4 sandstone, "delta plain facies").
1635-1951	Sandstone, very poorly sorted, medium- to very coarse-grained, mainly quartzose and kaolinitic, in part quartzitic.
1951-1997	Shale, dark brown-grey to black, in part silty; some siltstone.  (M2 sandstone, "prodelta facies").
1997-2276	Sandstone, siltstone and shale: sandstone, brown-grey, chert/quartz, quartzitic; siltstone, brown-grey, coarse-grained, quartzitic; siltstone, dark brown-grey, argillaceous; shale, dark brown-grey to black, in part silty.
2276-2500	Shale, brown-black; rare sandstone or siltstone, brown, quartzitic, and orthoquartzite.

UPPER DEVONIAN

Imperial Formation

Top at 249 m (817 ft) below sea-level.  
Thickness: 1085 m (3560 ft).

2500-2970	Shale, dark grey, in part silty.
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Borehole footage

Lithology

- 2970-3254 Siltstone, sandstone and shale: siltstone, grey-buff, coarse-grained and fine-grained, micaceous; sandstone, grey-buff, and pale grey, fine-grained, silty; shale, dark grey, silty.
- 3254-4216 Shale, dark grey, silty, micromicaceous; some siltstone, brown-grey, argillaceous.
- 4216-5282 Siltstone, buff-grey, coarse-grained, sandy, micaceous, quartz/chert, siltstone, brown-grey, fine-grained, micaceous; some interbedded shale, dark grey, silty.
- 5282-6060 Siltstone and shale: siltstone, dark brown-grey, coarse-grained and fine-grained, argillaceous micaceous; shale, dark grey, silty micromicaceous.

DEVONIAN

Thickness: 805 m (2640 ft).

Horn River Formation

Top 1334 m (4377 ft) below sea-level.  
Thickness: 31 m (102 ft).

- 6060-6162 Shale, black, bituminous, pyritic.

Devonian carbonates assemblage (transitional)

(Representative Section)

Thickness: 774 m (2538 ft).

Hume Formation (transitional)

Top at 1365 m (4479 ft) below sea-level.  
Thickness: 144 m (472 ft).

- 6162-6192 Shale, black; some limestone, buff, fine-grained and some chert, brown and pale buff.
- 6192-6634 Limestone, argillaceous and silty; shale, micromicaceous, increasingly downward to predominantly shale at base; some shell fragments.

Borehole footage

Lithology

Landry Formation (transitional)

Top at 1509 m (4951 ft) below sea-level.  
Thickness: 612 m (2007 ft).

6634-8641

Limestone and shale: limestone, brown-grey, argillaceous, in part very argillaceous grading to shale, dark brown-grey, calcareous, micromicaceous; some limestone, grey, silty and argillaceous; shell fragments; at c. 7500-7600 ft: some limestone, buff, white, bioclastic; in the lower 300 m, increasingly argillaceous to predominantly shale as above.

Tatsieta Formation (transitional)

Top at 2121 m (6958 ft) below sea-level.  
Thickness: 18 m (59 ft).

8641-8646

Limestone, white, buff, grey and black, bioclastic, in part very argillaceous and bituminous.

8646-8655

Shale, black, bituminous, calcareous.

8655-8700

Limestone, pale buff, buff, aphanitic; limestone, white, pale buff, "chalky" some bituminous streaks; some limestone, brown, pelletiod; trace of breccia; trace of shale, pale grey, very calcareous.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1036 m (3400 ft).

Peel Formation (transitional)

Top at 2139 m (7017 ft) below sea-level.  
Thickness: 131 m (430 ft).

8700-8830

Dolomite, brown-grey, argillaceous; some bituminous residue.

8830-8954

Shale, black, silty, slightly dolomitic.

8954-8990

Dolomite, pale buff with some black bituminous streaks, microcrystalline.

Borehole footage

Lithology

8990-9012

Dolomite, dark brown-grey to black, argillaceous, silty, bituminous.

9012-9130

Dolomite, pale buff, pale grey and grey, micro- to finely crystalline, in the lower part with some microsugrosic texture; some bituminous streaks.

Mount Kindle Formation

Top at 2270 m (7447 ft) below sea-level.  
Thickness: 221 m (726 ft).

9130-9856

Dolomite, pale buff, buff, grey, brown, micro- very finely, finely and medium crystalline; some intercrystalline porosity with bitumen residue; bituminous streaks throughout.

Franklin Mountain Formation

Top at 2491 m (8173 ft) below sea-level.  
Thickness: >388 m (>1273 ft).

9856-c. 10400

Dolomite, mainly pale buff and pale grey to white, some buff, rare brown, very finely to finely and medium crystalline; at 10350-10400 ft, some dolomite, very dark brown, microcrystalline.

Cherty member (transitional), thickness: >222 m (>729 ft).

c. 10400-c.10800

Dolomite, mainly dark brown to black, micro- and very finely crystalline; some chert, black and very dark brown.

c. 10800-c. 11070

Dolomite, pale grey to buff and brown, finely to medium crystalline and some coarsely crystalline; some dolomite, dark brown to black, micro- to very finely crystalline; some chert, black, brown, pale brown.

c. 11070-11129

Dolomite, dark grey-brown to black, microcrystalline, in part siliceous, slightly argillaceous; bituminous residue; much chert, very dark brown to black, especially abundant in bottom sample (11120-11129 ft).

10410-11129 ft - age: Middle Ordovician to early Silurian (R.S. Tipnis, *see* Appendix I, 9-RST-1979).

11129

Total depth: 3392 m.

58. H-73

Log of Imperial Whirlpool No. 1

Location: 65°32'25"N., 129°13'17"W.

Elevation of Kelly Bushing: 145 m (476 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to electric log.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at bedrock, 133 m (436 ft) below sea-level.  
Thickness: 268 m (880 ft).

40(S)-920(S)

Siltstone, sandstone, and shale: siltstone, grey, dark grey; in part coarse-grained and sandy, micaceous, grading to sandstone, pale grey, very fine-grained, silty; siltstone in part argillaceous, grading to shale, very dark grey, silty, micromicaceous; at 784-796 ft: limestone, pale buff and white, microcrystalline, dense, in part "chalky" textured.

DEVONIAN

Thickness: 771 m (2530 ft).

[possible reconstructed thickness (see note below and text, p. 27): 887 m (2910 ft)].

Horn River Group

Thickness: 357 m (1170 ft).

Canol Formation

Top at 135 m (444 ft) below sea-level.  
Thickness: 10 m (33 ft).

920(S)-953

Shale, black, bituminous with some pyrite.

Ramparts Formation

Top at 145 m (477 ft) below sea-level.  
Thickness: 164 m (537 ft).

Reef member, thickness: 100 m (327 ft).

Borehole footage

Lithology

953-1280

Limestone, reef, in part coarsely crystalline.

Platform member and siltstone lenticle,  
thickness: 64 m (210 ft).

1280-1490

Limestone and shale: limestone, buff, brown, white, dark brown-grey to black, in part micro-grained, in part finely crystalline, in part argillaceous, in part bituminous; shale, dark brown-grey to black, silty, calcareous, micromicaceous, in part bituminous; lithology grades downward to siltstone and limestone: siltstone, grey-buff to brown-grey, calcareous, micaceous, in part very calcareous, grading to limestone, grey-buff to grey and white, argillaceous, fossiliferous.

Hare Indian Formation

Top at 309 m (1014 ft) below sea-level.  
Thickness: 183 m (600 ft).

1490-2030

Siltstone, very dark grey, argillaceous, calcareous, micromicaceous, grading downward to shale, through grey to, in the lower part, brown-grey, calcareous, micromicaceous.

Bluefish Member, thickness: 18 m (60 ft).

2030-2090

Shale, black, slightly calcareous; some pyrite.

Devonian carbonates assemblage

Thickness: 415 m (1360 ft).

Note: thickness of Devonian Carbonates Assemblage at this location could be reasonably estimated at 530 m (1740 ft) - hence possibility of shortened section, say, 116 m (380 ft) of Fort Norman anhydrite lost in structural deformation (see text, p.27).

Borehole footage

Lithology

Hume Formation

Top at 492 m (1614 ft) below sea-level.  
Thickness: 160 m (525 ft).

2090-2615

Limestone, grey-brown to grey, buff, white, in part silty and argillaceous, fossiliferous; some shale, brown-grey, calcareous, silty.

Landry Formation

Top at 652 m (2139 ft) below sea-level.  
Thickness: 62 m (205 ft).

2615-2820

Limestone, brown, dark brown, buff, microcrystalline to aphanitic with traces of pelletoid.

Arnica Formation

Top at 714 m (2344 ft) below sea-level.  
Thickness: 131 m (430 ft).

2820-3250

Dolomite, brown, dark brown, buff, variably micro- to finely crystalline, with traces of anhydrite.

Fort Norman Formation (basal tongue)

Top at 846 m (2774 ft) below sea-level.  
Thickness: 61 m (200 ft).

[possible reconstructed thickness (see note above and text, p. 27): 177 m (580 ft)].

3250-3450

Dolomite, pale buff, pale grey, buff, grey, variably micro- to finely and medium crystalline with some coarsely crystalline; at the base, some microsucrosic texture; traces of intercrystalline porosity; traces of pyrite; traces of shale, very pale green, waxy.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 838 m (2750 ft).

Borehole footage

Lithology

Mount Kindle Formation

Top at 906 m (2974 ft) below sea-level.  
Thickness: 213 m (700 ft).

3450-4150(S) Dolomite, buff, brown, mainly micro- to very finely crystalline; at the base, some chert, white.

Franklin Mountain Formation

Top at 1120 m (3674 ft) below sea-level.  
Thickness: >389 m (>1275 ft).

4150(S)-4260(S) Dolomite, creamy white, pale buff to pale grey, micro- to very finely crystalline, with some finely to medium crystalline; some shale, green-grey, very pale green-grey, waxy, traces of pyrite.

Cherty member, thickness 256 (840 ft).

4260(S)-5100(S) Dolomite, pale buff, pale grey, creamy white, buff, some buff-grey, variably micro- to medium and coarsely crystalline; some chert, white, pale buff, especially abundant at 4390-4430 and 4650-4670 ft.

5100(S)-5424(S) Dolomite, mainly pale buff to pale grey, rare brown to grey, finely and medium crystalline.

FAULT.

DEVONIAN

[Reconstructed top at 1154 m (3785 ft) below sea-level].

Hume Formation

Top at 1508 m (4949 ft) below sea-level.

5425(S)-5560(S) Limestone, grey-brown to grey and white, in part silty and argillaceous, in part fractured especially near the base with white calcite filling; some shale, grey to very dark brown-grey, calcareous, silty.

Borehole footage

Lithology

?Landry Formation

5560 (S)-5780 (S)

Limestone, brown, dark brown, white, some buff, micrograined to aphanitic, very intensely fractured with white calcite filling.

FAULT?

Hume Formation

5780 (S)-6417

Limestone, as above at 5425-5560 ft, in part fractured.

6417

Total depth: 1956 m.



59. H-79

Log of Glacier Loon River No. 1.  
Location: 66°28'21"N., 128°58'20"W.  
Elevation of Kelly Bushing: 24 m (80 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to electric log.

Borehole footage

Lithology

DEVONIAN

Thickness estimated at 500 m (1640 ft).

Horn River Group

Hare Indian Formation

Top at bedrock, 21 m (70 ft) below sea-level.  
Thickness: 126 m (412 ft).

150(S)-562

Shale, at the top pale grey grading downward  
through grey to, at the base, dark brown-  
grey, calcareous, micromicaceous.

(Top Bluefish Member cannot be pin-pointed)

Devonian carbonates assemblage

Hume Formation

Top at 147 m (482 ft) below sea-level.  
Thickness: 103 m (338 ft).

562-646

Limestone, brown, buff, grey-buff, in part silty,  
bioclastic.

646-900

Limestone and shale: limestone, pale buff to pale  
grey, bioclastic; shale, grey, calcareous,  
micromicaceous; shale increases in amount downward.

Landry Formation

Top at 250 m (820 ft) below sea-level.  
Thickness: >26 m (>84 ft).

900-946

Limestone, buff, brown, grey, microcrystalline to  
aphanitic, in part grey-brown and argillaceous;  
traces of shale, green.

946-984

Samples missing.

984

Total depth: 300 m.

60. 1-05

Log of Chevron Whitefish Y.T. 1-05.  
Location: 67°04'37"N., 137°15'25"W.  
Elevation of Kelly Bushing: 348 m (1142 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 1452 m (4763 ft).

3986-4036

age: uncertain, probably no younger than Albian.

4458

age: late Barremian to Aptian (J.A. Jeletzky and  
J.H. Wall in Brideaux et al., 1979, p. 10-11).

Basal beds (Lower Cretaceous?).

4693-4763(R)

Sandstone, fine- to medium grained with some  
coarse and larger angular chert fragments;  
some shaly interbeds.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 1104 m (3621 ft) below sea-level.  
Thickness: >47 m (>153 ft).

4763-4916

Shale, dark grey, silty, micromicaceous, with  
interbedded siltstone and sandstone, fine-  
grained, silty, chert/quartz, in part siliceous.

4916

Total depth: 1498 m.

61. 1-06

Log Inc. Attoc Lake 1-06.

Location: 67°25'30"N., 133°15'10"W.

Elevation of Kelly Bushing: 86 m (283 ft).

Well log prepared by the writer, based on sonic log and well history report, there being no drill cuttings available.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at bedrock, 86 m (283 ft) above sea-level.  
Thickness: 1086 m (3564 ft).

07-3564(R)

"Shale, sandstone".

DEVONIAN

Thickness: 656 m (2152 ft).

Horn River Formation

Top at 1000 m (3281 ft) below sea-level.  
Thickness: 60 m (196 ft).

3564-3760(R)

"Shale, black with pyrite".

3740

Top Bluefish Member, thickness: 6 m (20 ft).

Devonian carbonates Assemblage

Thickness: 596 m (1956 ft).

Hume Formation

Top at 1060 m (3477 ft) below sea-level.  
Thickness: 81 m (266 ft).

3760-4026(R)

"Limestone, microcrystalline".

3836-3837 ft - age: Middle Devonian, Hifelian  
(A.E.H. Pedder, in Norford et al., 1973, p. 22).

Borehole footage

Lithology

Landry Formation

Top at 1141 m (3743 ft) below sea-level.  
Thickness: 283 m (928 ft).

4026-49547(R)

"Limestone, brown, microcrystalline".

Arnica Formation

Top at 1424 m (467 ft) below sea-level.  
Thickness: 198 m (650 ft).

49547-5604(R)

"Dolomite, brown, microcrystalline, with limestone".

5270 ft - age: probably Early Devonian (A.E.H.  
Pedder, in Norford et al., 1973, p. 22).

Tatsieta Formation

Top at 1622 m (5321 ft).  
Thickness: 34 m (112 ft).

5604-5716

?

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1368 m (4489 ft).

Peel Formation

Top at 1656 m (5433 ft) below sea-level.  
Thickness: 204 m (699 ft).

5716-6385(R)

"Dolomite, white, pale grey, with limestone".

Mount Kindle Formation

Top at 1860 m (6102 ft) below sea-level.  
Thickness: >311 m (>1020 ft).

6385-7405?(R)

"Dolomite, grey, white, finely crystalline, sucrosic".

7405

Total depth: 2257 m.

62. I-11

Log of Candel Iroquois I-11.

Location: 67°40'40"N., 129°32'05"W.

Elevation of Kelly Bushing: 127 m (418 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to acoustilog.

Borehole footageLithology

## DEVONIAN

Thickness: 509 m (1671 ft).

Horn River GroupHare Indian Formation

Top at bedrock, 122 m (401 ft) above sea-level.  
Thickness: 26 m (86 ft).

17-93

Shale, grey, micromicaceous, grading downward  
to dark brown-grey.

Bluefish Member, thickness: 8 m (25 ft).

78-93

Shale, black, non-calcareous.

93-103

Shale, black, calcareous, grading to limestone,  
dark brown and white, argillaceous.

Devonian carbonates assemblage

Thickness: 483 m (1585 ft).

Hume Formation

Top at 96 m (315 ft) above sea-level.

Thickness: 75 m (245 ft).

103-170

Limestone, grey-buff, microcrystalline, dense;  
limestone, pale buff, very finely crystalline;  
some shale, buff-grey, calcareous, micro-  
micaceous.

170-270

Limestone and shale: limestone, buff and grey-  
buff, bioclastic, fossiliferous, in part  
argillaceous; shale, as above.

Borehole footage

Lithology

270-348

Limestone, pale buff and grey-buff, micro-crystalline, in part aphanitic, dense, some limestone, buff and white, fossiliferous; some shale, grey, calcareous, micromicaceous.

Landry Formation

Top at 21 m (70 ft) above sea-level.  
Thickness: 259 m (850 ft).

348-370

Limestone, creamy white and brown, pelletoid.

370-c. 700

Limestone, pale buff, grey-buff, brown, aphanitic with some pelletoid; grades downward to buff, micrograined.

c. 700-c. 950

Limestone, as above; some shale, pale green, micropyrritic.

c. 950-1198

Limestone, pale buff, micrograined; near the base, some dolomite, buff, microcrystalline.

Arnica Formation

Top at 238 m (780 ft) below sea-level.  
Thickness: 149 m (490 ft).

1198-1350

Dolomite, buff, brown, microcrystalline.

1350-1688

Dolomite, pale buff to buff and brown, micro- and very finely crystalline with some finely crystalline, in part sucrosic; in the lower 42 m (120 ft), some calcite, white.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness: 1212 m (3978 ft)

Peel Formation

Top at 387 m (1270 ft) below sea-level.  
Thickness: 154 m (504 ft).

Borehole footage

Lithology

1688-1820	Dolomite, pale buff, microsugrosic; dolomite, pale buff, some brown, finely and medium crystalline.
1820-1900	Dolomite, grey-buff, microsugrosic, in part argillaceous.
1900-2120	Dolomite, pale buff, microcrystalline, with some shale, pale green; grades downward to dolomite, dark brown, microcrystalline, silty, with some shale, very dolomitic, silty.
2120-2192	Dolomite, pale buff, buff, brown, very finely crystalline; some white calcite.

Mount Kindle Formation

Top at 541 m (1774 ft) below sea-level.  
Thickness: 244 (802 ft).

2192-2720	Dolomite, brown to dark brown, very finely crystalline, sugrosic.
2720-2994	Dolomite, pale buff, micro- to very finely crystalline, sugrosic, with white calcite; grades downward to dolomite brown, very finely to finely crystalline, with some white dolomite and traces of chert.

Franklin Mountain Formation

Top at 785 m (2576 ft) below sea-level.  
Thickness: 814 m (2672 ft).

2994-3260	Dolomite, pale buff to pale grey, very finely and finely crystalline, grading downward to dolomite, brown and buff, finely to medium and coarsely crystalline.  <u>Cherty member</u> , thickness: 391 m (1284 ft).
3260-4070	Dolomite, creamy white to pale buff, finely to medium and coarsely crystalline; some chert, white to pale buff, especially abundant in the upper 46 m (150 ft); in the lower part some clear quartz.
4070-4544	Dolomite, pale buff to brown, micro- to finely and medium crystalline; some chert and clear quartz.

Borehole footage

Lithology

4544-5500

Dolomite: at the top, buff to brown, very finely crystalline, in part sucrosic; grades downward through creamy white to buff, microcrystalline; in the lower part, creamy white to pale buff and pale grey-buff, microcrystalline to aphanitic.

5500-5666

Dolomite, buff to brown, microcrystalline, in part grey-brown and argillaceous; in the middle part, some shale, dark grey and traces of shale, black; near the base, some shale, pale green and olive green.

CAMBRIAN

Clastics-evaporites assemblage

Thickness: 232 m (762 ft).

Saline River Formation

Top at 1600 m (5248 ft) below sea-level.

Thickness: 175 m (574 ft)

Upper clastic member, thickness: 54 m (574 ft).

5666-5843

Shale, siltstone, anhydrite and dolomite: shale, brick-red; siltstone, brick-red, dolomitic; anhydrite, pink and pale buff; some shale, pale green; dolomite, pale buff, microcrystalline; grades downward to dolomite, anhydrite, shale and siltstone: dolomite, pale grey, aphanitic to microcrystalline; shale, brick-red, green grey; some siltstone, grey, white, pink dolomite.

Salt member, thickness: 75 (245 ft).

5843-6088

Halite.

Lower clastic member, thickness: 46 m (152 ft).

6088-6110

Shale, green, pale purple, slightly calcareous, siliceous; possibly some dolomite and limestone.



Borehole footage

Lithology

- 6110-6182 Dolomite, siltstone and shale: dolomite, pale buff, brown, microcrystalline, siliceous; siltstone, pale buff, pale green, siliceous; shale, pale green, grey-green, maroon, red; some chert and some limestone, "chalky".
- 6182-6200 Chert, dark brown, buff, white, in part speckled, some milky white; some limestone, white, "chalky".
- 6200-6240 Dolomite, dark brown, microcrystalline, siliceous.

Mount Cap Formation

Top at 1775 m (582 ft) below sea-level.  
Thickness: 57 m (188 ft).

- 6240-6300 Siltstone and shale: siltstone, pale grey, pale green, siliceous; shale, buff-grey, siliceous; some shale, maroon, red, pale green.
- 6300-6340 Dolomite, dark brown microcrystalline, siliceous.
- 6340-6428 Siltstone and shale: siltstone, pale grey, siliceous; shale, pale green-grey, siliceous; some limestone, "chalky".

PROTEROZOIC

Top at 1832 m (6010 ft) below sea-level.

Dolomite unit, thickness: >162 m (>533 ft).

- 6428-6961 Dolomite, pale yellow with blood-red streaks, microcrystalline and aphanitic; in the lower part, with pale buff and pale pink.
- 6961 Total depth: 2122 m.

63. I-13

Log of SOBC East Porcupine Y.T. I-13.

Location: 66°02'35"N., 137°46'58"W.

Elevation of Kelly Bushing: 507 m (1665 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 1823 m (5980 ft).

Basal beds (Lower Cretaceous?).

5940-5980

(Below shale and siltstone). Samples missing.  
(R) Siltstone, brown, calcareous, very  
glauconitic.

UPPER PALEOZOIC

Thickness: >617 m (>2024 ft).

Ettrain Formation

Top at 1315 m (4315 ft) below sea-level.

Thickness: 62 m (204 ft).

5980-5990

Sample missing.

5990-6184

In the upper part; sandstone and limestone:  
sandstone, brown and white, very poorly  
sorted, fine- to very coarse-grained, chert/  
quartz, sub-rounded, in part very glauconitic  
and very pyritic, very calcareous, grading to  
and interbedded with, limestone, buff and  
white, in part very sandy or silty, in part  
very glauconitic and pyritic, fossiliferous;  
probably breccia fragments.

Grades downward into, in the lower part, sandstone  
and shale: sandstone, pale grey, very poorly  
sorted, variably fine-grained and coarse-  
grained, calcareous, slightly glauconitic;  
shale, dark brown-grey, silty, calcareous.

Borehole footage

Lithology

Blackie Formation

Top at 1377 m (4519 ft) below sea-level.

Thickness: 254 m (832 ft).

6184-6627

In the upper part, shale, sandstone and limestone: shale, dark brown-grey, calcareous, silty; sandstone, brown and white, poorly sorted, fine- to medium-grained, quartz/chert, very glauconitic, very calcareous, grading to limestone, buff, white, sandy, glauconitic.

Grades downward into, in the lower part, shale, dark brown-grey, silty, calcareous; some limestone, brown, argillaceous or silty; some sandstone, pale grey and brown, poorly sorted, calcareous, quartz/chert.

6627-7016

In the upper part, limestone, siltstone and shale: limestone, brown and white, skeletal, in part very silty, grading to siltstone, white, very calcareous; shale, brown-grey, very calcareous.

Grades downward through, in the middle part, sandstone, brown and white, very poorly sorted, fine- to very coarse-grained, chert/quartz, sub-angular, very calcareous. In lower part, limestone and shale: limestone, grey-brown to pale grey-buff and white, bioclastic, silty and argillaceous, grading to calcareous siltstone and sandstone; shale dark grey-brown, calcareous, silty.

Hart River Formation

Top at 1631 m (5351 ft) below sea-level.

Thickness: >310 m (>988 ft).

7016-7292

Limestone: at the top, brown to grey-buff and white, bioclastic, in part silty or sandy; at 7030-7040 ft, trace of sandstone, calcareous; limestone grades downward through grey-brown, buff-grey, white, micritic, in part argillaceous, to, in the lower part, buff, grey-brown, white, in part bioclastic, silty, with chert, brown, grey-buff, pale grey with brown specks, and smoky translucent; near the base, some dolomite, brown, microcrystalline.

Borehole footage

Lithology

7292-7490

Limestone, grey-buff to dark brown-grey, argillaceous, grading to shale, very calcareous.

7490-7526

Samples missing.

Chance Sandstone Member.

7526-8004

Samples missing. (R) calcareous, shale, argillaceous limestone and fossiliferous limestone.

8004

Total depth: 2440 m.

64. I-21

Log of Shell Peel River Y.T. I-21.  
Location: 66°10'37"N., 134°18'51"W.  
Elevation of Kelly Bushing: 381 m (1251 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at bedrock, 360 m (1181 ft) above sea-level.  
Thickness: 868 m (2848 ft).

(Sandstone markers after Lutchman, 1977).

70(S)-1251

Shale, dark brown-grey and black, variably silty, micromicaceous; some ironstone, grey-brown; some pyrite; shale grades downward to brown-black, flaky.

670 ft - age: Early Carboniferous, Tournaisian;  
700 ft - age: Early Carboniferous, Tournaisian, probably early or middle Tournaisian. (D.C. McGregor, in Norford et al., 1970).

(M7 sandstone, "delta plain facies").

1251-1313

Sandstone, buff, fine-grained, quartzitic, grading to orthoquartzite.

1313-1760

Shale, brown-black, in part silty, grading to argillaceous siltstone; rare thinly interbedded sandstone, buff, fine-grained, quartzitic; some pyrite; traces of ironstone.

1400-1600 ft - age: Early Carboniferous, Tournaisian; 1650-1750 ft - age: probably early Tournaisian, (D.C. McGregor, ibid., p. 7).

(M6 sandstone, "delta plain facies").

1760-1855

Sandstone, buff, fine-grained, quartzitic, and interbedded shale, black, silty.

1855-2172

Shale, brown-black and siltstone, as above.

(M5 sandstone, "delta front facies").

Borehole footage

Lithology

- 2172-2280 Sandstone, buff, fine-grained, poorly sorted with coarse grains, quartzitic, in part slightly kaolinitic, in part grading to orthoquartzite; some shale, brown-black.
- 2280-2467 Shale, very dark brown-grey, brown-black, in part silty or sandy.  
2400 ft - age: probably Tournaisian (D.C. McGregor, *ibid.*, p. 7).  
(M4 sandstone, "delta front facies").
- 2467-2820 Sandstone and shale, as above.  
2500, 2600 and 2700 ft - age: Latest Devonian, "Strunian" (D.C. McGregor, *ibid.*, p. 7-8).
- 2820-2918 Shale, brown-black, bituminous, in part silty, pyritic.

UPPER DEVONIAN

Imperial Formation

Top at 508 m (1667 ft) below sea-level.  
Thickness: 524 m (1718 ft).

- 2918-4402 Shale, dark grey, in part silty and micromicaceous, grading to siltstone; some siltstone, grey, coarse-grained.  
3050 ft - age: Late Devonian "Strunian"; 3100 ft - age: Late Devonian, "Strunian" or very late Famennian; 3200 ft - age: possibly "Strunian"; 4000 ft - age: probably Devonian. (D.C. McGregor, *ibid.*, p. 8).
- 4402-4636 Siltstone, brown, coarse-grained, argillaceous, micaceous, in part slightly calcareous, in part grading to very fine-grained sandstone; some shale, dark grey, micromicaceous.

DEVONIAN

Thickness estimated at 915 m (3000 ft).

Borehole footage

Lithology

Horn River Formation

Top at 1032 m (3385 ft) below sea-level.  
Thickness: 39 m (127 ft).

4636-4763

Shale, black, bituminous with some pyrite; in the upper part, some siltstone, brown calcareous.

4747

Top Bluefish Member, thickness: 5 m (16 ft).

Devonian carbonates assemblage

Hume Formation

Top at 1070 m (3512 ft) below sea-level.  
Thickness: 120 m (393 ft).

4763-5156

Limestone, buff, white, micro- and fine-grained, in part silty and argillaceous; some shell fragments; some interbedded shale, grey, silty, calcareous, micromicaceous.

Landry Formation (transitional)

Top at 1190 m (3905 ft) below sea-level.  
Thickness: >501 m (>1644 ft).

5156-6114

Shale and limestone: shale, grey, flaky to splintery, calcareous, micromicaceous, in part silty and very micaceous; limestone, grey-buff, fine-grained or finely crystalline, also microcrystalline, generally silty and/or argillaceous.

6114-6714

Limestone and shale: limestone, buff, brown, microcrystalline, silty, in part pelletoid (in the top 12 m); shale, grey silty, calcareous, micromicaceous; limestone, buff, white, brown, in part bioclastic, generally silty and/or argillaceous, in lower part some breccia.

6714-6800

Limestone, buff, brown, in part aphanitic, in part breccia.

6800

Total depth: 2073 m.

65. 1-38

Log of Decalta Ontaratue 1-38.

Location: 66°17'40"N., 131°51'00"W.

Elevation of Kelly Bushing: 144 m (474 ft).

Well log prepared by the writer, based on the drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 352 m (1154 ft).

Basal beds (Lower Cretaceous?).

1050-1154

(Below shale, in part very glauconitic). Sandstone, pale grey, very fine-grained, silty, micaceous, with trace carbonaceous streaks; trace of sand, coarse, rounded, quartz; some shale, grey, silty, micromicaceous.

UPPER DEVONIAN

Imperial Formation

Top at 207 m (680 ft) below sea-level.

Thickness: 535 m (1756 ft).

1154-2910

Shale, dark brown-grey, silty, micromicaceous; some siltstone, brown-grey; some siltstone, grey, coarse-grained, grading to silty sandstone.

DEVONIAN

Thickness: 760 m (2494 ft).

Horn River Formation

Top at 742 m (2436 ft) below sea-level.

Thickness: 100 m (326 ft).

2910-3236

Shale, black, bituminous, pyritic.

3220

Top Bluefish Member, thickness: 5 m (16 ft).



Borehole footage

Lithology

Devonian carbonates assemblage

Thickness: 664 m (2178 ft).

Hume Formation

Top at 839 m (2752 ft) below sea-level.

Thickness: 114 m (374 ft).

- 3236-3300 Limestone, buff, grey, brown, micro- to very finely crystalline, bioclastic, fossiliferous.
- 3300-3397 Limestone, as above, in part silty to very silty and argillaceous; some shale, pale grey and grey, calcareous, micromicaceous.
- 3397-3610 Shale, as above; some limestone, as above; at 3530-3540 ft, limestone and dolomite, brown, microcrystalline.

Landry Formation

Top at 956 m (3136 ft) below sea-level.

Thickness: 344 m (1130 ft).

- 3610-4740 Limestone, brown, buff, aphanitic, in part pelltoid, grading downward to, in the lower part, buff, brown, in part micro-grained and with some dolomite, brown, buff, micro- and very finely crystalline.

Arnica Formation

Top at 1300 m (4266 ft) below sea-level.

Thickness: 129 m (422 ft).

- 4740-5162 Dolomite, brown, dark brown, buff, micro- and very finely crystalline, sucrosic with some intercrystalline porosity.

Tatsieta Formation

Top at 1429 m (4688 ft) below sea-level.

Thickness: 74 m (242 ft).

Borehole footage

Lithology

5162-5404

Limestone, pale buff, aphanitic, in part micro-crystalline and dolomitic; some shale, pale green, olive green, in part micro-pyritic; in the lower part, some dolomite, pale buff, pale buff-grey, microcrystalline, calcareous.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1185 m (3888 ft).

Peel Formation

Top at 1503 m (4930 ft) below sea-level.  
Thickness: 162 m (530 ft).

5404-5934

Dolomite, buff, pale buff, grey, pale grey, some brown (in the lower part mainly brown), micro-sucrosic, in part silty; some shale, pale green, in part micropyrritic; trace of shale, very dark grey.

Mount Kindle Formation

Top at 1664 m (5460 ft) below sea-level.  
Thickness: 286 m (878 ft).

5934-6812

Dolomite, buff, brown, micro- to very finely crystalline, in part sucrosic; traces of chert, buff, at 6090-6120, calcite, white.

Franklin Mountain Formation

Top at 1932 m (6338 ft) below sea-level.  
Thickness: >211 m (>693 ft).

6812-7150

Dolomite, buff, pale buff, creamy white, micro- to finely and medium crystalline; in the upper part, some argillaceous beds, also some intercrystalline porosity with bitumen residue.

Cherty member, thickness: 23 m (76 ft).

Borehole footage

Lithology

7150-7226

Dolomite, creamy white to buff, micro- and some finely and medium crystalline, in part siliceous with clear quartz infilling; some chert, creamy white, pale buff.

7226-7505

Dolomite, at the top pale buff, pale grey, micro-crystalline, grading downward to brown, micro- and very finely crystalline.

7505

Total depth: 2268 m.

66. I-50

Log of I.O.E. Stony I-50.

Location: 67°29'44"N., 135°22'46"W.

Elevation of Kelly Bushing: 321 m (1056 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 186 m (610 ft).

Basal beds (Lower Cretaceous?).

850(S)-860(S)

(Below shale and glauconitic sandstone). Chert,  
mainly grey and black, granules and pebbles  
(?reworked Tuttle).

UPPER DEVONIAN

Imperial Formation

Top at 60 m (196 ft) above sea-level.

Thickness: 1832 m (6012 ft).

860(S)-6872

Shale, siltstone and sandstone: shale, dark grey  
to black, micromicaceous; siltstone, grey,  
brown-grey, coarse-grained and fine-grained,  
argillaceous, micaceous; mainly in the upper  
part, some sandstone, grey, poorly sorted,  
silty, in part with medium and coarse angular  
grains of chert.

DEVONIAN

Thickness: 532 m (1744 ft).

Horn River Formation

Top at 1773 m (5816 ft) below sea-level.

Thickness: 87 m (285 ft).

6872-7157

Shale, black, bituminous, pyritic; in the lower  
part, siliceous, in part grading to chert,  
black, argillaceous.

Borehole footage

Lithology

Devonian carbonates assemblage

Thickness: 445 m (1459 ft).

Hume Formation

Top at 1860 m (6101 ft) below sea-level.

Thickness: 67 m (219 ft).

7157-7330

Limestone, grey to buff and dark brown, micro- to fine-grained, argillaceous and silty; some shale, grey, calcareous.

7330-7376

Limestone, pale buff to white, aphanitic; much shale, grey, pale green-grey, micropyrritic.

Landry Formation

Top at 1926 m (6320 ft) below sea-level.

Thickness: 343 m (1124 ft).

7376-c. 8030

Limestone, brown, buff, aphanitic, in part argillaceous, some microcrystalline; in the lower part, some pellet limestone and some interbedded shale grey and black.

c. 8030-c. 8110

Dolomite, pale buff-grey, some dark brown, microcrystalline.

c. 8110-8500

Limestone, mainly buff, aphanitic to microcrystalline; some dolomite, buff, micro- and very fine crystalline.

Tatsieta Formation

Top at 2269 m (7444 ft) below sea-level.

Thickness: 35 m (116 ft).

8500-8616

Limestone, buff, aphanitic to micrograined; traces of shale, green-grey, slightly pyritic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1084 m (3556 ft).

Borehole footage

Lithology

Peel Formation

(limestone facies)

Top at 2304 m (7560 ft) below sea-level.

Thickness: 232 m (762 ft).

8616-9378

Limestone, buff to white, microcrystalline with some very finely crystalline and some aphanitic; in the upper part, some black bituminous insoluble residue.

8944-8962 ft - age: Silurian (B.S. Norford, in Norford et al., 1971, p. 22).

Mount Kindle Formation

(limestone facies)

Top at 2537 m (8322 ft) below sea-level.

Thickness: 135 m (44 ft).

9378-9822

Limestone, pale buff, mainly microcrystalline, in part dolomitic; some dolomite, pale buff, very finely and finely crystalline, in part calcareous; at 9430-9490 ft, limestone, buff, aphanitic; at 9790-9800 ft, dolomite, white, coarsely crystalline.

Franklin Mountain Formation

Top at 2672 m (8766 ft) below sea-level.

Thickness: >349 m (>1146 ft).

9822-10830

Dolomite, mainly pale grey-buff, medium to coarsely crystalline, with some intercrystalline porosity; near the top much dolomite, white, coarsely crystalline and quartz crystals; in the lower part, some dolomite, brown-grey, finely to medium crystalline.

10830-10968

Dolomite, as above, very sandy (fine and medium, rounded, quartz).

10968

Total depth: 3343 m.

67. I-51

Log of Banff Treeless Creek I-51.

Location: 67°50'42"N., 135°24'28"W.

Elevation of Kelly Bushing: 28 m (93 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic and density logs.

Borehole footage

Lithology

MESOZOIC

Thickness: 654 m (2146 ft).

LOWER CRETACEOUS? (Basal beds).

1073-1152

(Below sandstone, shale and siltstone). Sandstone, white, fine- to medium-grained, quartzose, rounded to sub-angular; trace of glauconite; some siltstone, pale green-grey, slightly calcareous.

JURASSIC?

1152-2292

Shale, dark grey, micromicaceous, in part fissile, in part finely silty; traces of siltstone, grey, green-grey, buff-grey, in part slightly dolomitic.

CAMBRIAN-DEVONIAN

Road River Formation

(Devonian carbonates equivalent)

Top at 670 m (2199 ft) below sea-level.

Thickness: 799 m (2623 ft).

?Hume equivalent (may include Canol), thickness: 117 m  
(384 ft).

2292-2676

Shale, black, siliceous with silica-filled veins.

?Arnica-Landry equivalent, thickness: 682 m  
(2239 ft).

2676-c. 3600

Shale, very dark grey to black, hard, finely silty, micromicaceous, pyritic.

c. 3600-4064

Shale, very dark grey to black, slightly calcareous; traces of pyrite; some white calcite veins.

Borehole footage

Lithology

4064-4915

Shale, black, hard, micromicaceous; in the upper part, some white calcite veins.

4410-4415 ft - age: possibly Devonian,  
(A.W. Norris, *see* Appendix I, D-5-AWN-1972).

Road River Formation

(?Peel equivalent)

Top at 1470 m (4822 ft) below sea-level.  
Thickness: 279 m (916 ft).

4915-5722

At the top, dolomite, very dark grey to black, microcrystalline, very argillaceous, siliceous, grading to shale, black, dolomitic, siliceous; trace of chert, grey-buff; grades downward to, in the lower part, shale, black, silty, dolomitic, in part siliceous, pyritic, in part grading to dolomite, dark grey, argillaceous; traces of chert, buff, pale grey; trace of calcite.

5722-5831

Dolomite, buff-grey, argillaceous, siliceous; some interbedded shale, black, bituminous.

Road River Formation

(?Mount Kindle equivalent)

Top at 1749 m (5738 ft) below sea-level.  
Thickness: >55 m (>179 ft).

5831-6010

At the top, shale, black, silty, bituminous, pyritic, with some grey and white calcite veins; some chert, buff, pale buff-grey, translucent with dark brown mottling; grades downward through, - shale, dolomite and chert: shale, black, silty, dolomitic, pyritic; dolomite, brown-grey to dark grey-brown, finely crystalline, argillaceous; chert, brown and pale buff-grey mottled and translucent, dark brown, grey, white; grades downward to shale and chert; shale, black, siliceous, grading to chert, argillaceous.

6010

Total depth: 1832 m.



68. I-55

Log of Glacier Ramparts No. 1.

Location: 66°14'44"N., 128°39'47"W.

Elevation of Kelly Bushing: 24 m (78 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to electric log.

Borehole footage

Lithology

DEVONIAN

Thickness estimated at 594 m (1950 ft).

Horn River Group

Hare Indian Formation

Top at bedrock, 24 m (78 ft) above sea-level.  
Thickness: 179 m (586 ft).

0-540

Shale, (at the top weathered brown), pale grey,  
grading downward through grey to brown-grey,  
calcareous, micromicaceous.

Bluefish Member, thickness: 14 m (46 ft).

540-586

Shale, very dark brown-grey to black, non-  
calcareous; at the base, limestone, dark brown,  
very argillaceous.

Devonian carbonates assemblage

Hume Formation

Top at 155 m (508 ft) below sea-level.  
Thickness: 137 m (449 ft).

586-770

Limestone, brown, buff, grey, mainly micrograined,  
in part silty and argillaceous; some shale,  
green-grey, calcareous.

770-940

Shale and limestone: shale, grey, green-grey,  
calcareous, micromicaceous; limestone, pale  
grey, pale buff, in part aphanitic, in part  
bioclastic and fossiliferous; some sparry calcite.

940-1035

Limestone, grey-brown to buff with some dark  
streaks, aphanitic to microcrystalline,  
argillaceous; some interbedded shale, dark  
grey, calcareous.

Borehole footage

Lithology

Landry Formation

Top at 292 m (957 ft) below sea-level.  
Thickness: 127 m (417 ft).

1035-1452

Limestone, in the upper part brown and dark brown, grading downward through buff to pale buff and grey-buff, mainly aphanitic.

Arnica Formation

Top at 419 m (1374 ft) below sea-level.  
Thickness: >28 m (>92 ft).

1452-1544

Dolomite, brown, dark brown, buff, micro- to finely crystalline; traces of intercrystalline porosity; some dolomite, grey-buff, aphanitic, anhydritic.

1544

Total depth: 471 m.

69. 1-77

Log of Candel South Ramparts 1-77.  
Location: 65°26'32"N., 130°58'18"W.  
Elevation of Kelly Bushing: 596 m (1954 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

(Lower Cretaceous?)

Thickness: 4437 m (14547 ft).

7-1080

Samples missing.

1080-1454

Siltstone and shale: siltstone, brown-grey in part coarse-grained, in part argillaceous; shale, dark grey, silty, micromicaceous.  
(Note: characteristic basal Mesozoic beds with quartzose sandstone and glauconitic not found in the drill cuttings; sonic log indicates possible Upper Devonian top at 1454 ft, which, at 152 m above sea-level is compatible with structure contours but not with isopachs. The possibility of Imperial/Tuttle/Lower Cretaceous contacts above 1080 ft well depth is not ruled out).

UPPER DEVONIAN

Imperial Formation

Top at 1527 m (5007 ft) above sea-level.  
Thickness: 2277 m (7447 ft).

1454-1996

Shale, very dark grey, silty, micromicaceous; some siltstone, brown-grey, argillaceous.

1996-2198

Siltstone, pale brown, coarse-grained; siltstone, grey-brown, argillaceous.

DEVONIAN

Thickness: 671 m (2202 ft).

Borehole footage

Lithology

Horn River Group

Thickness: 115 m (378 ft).

Canol Formation

Top at 74 m (244 ft) below sea-level.

Thickness: 90 m (294 ft).

2198-2492

Shale, black, hard, bituminous, pyritic.

Ramparts Formation

Top at 164 m (538 ft) below sea-level.

Thickness: 5 m (18 ft).

?Siltstone lentil.

2492-2510

Siltstone, brown, very dolomitic and calcareous, argillaceous.

Hare Indian Formation

Top at 169 m (556 ft) below sea-level.

Thickness: 20 m (66 ft).

2510-2530

Shale, grey micromicaceous.

Bluefish Member, thickness: 14 m (46 ft).

2530-2576

Shale, black, at the base, calcareous.

Devonian carbonates Assemblage

Thickness: 556 m (182 ft).

Hume Formation

Top at 190 m (622 ft) below sea-level.

Thickness: 144 m (474 ft).

2576-3050

Limestone, brown, buff, white, micrograined, bioclastic, fossiliferous, in part silty and argillaceous; in the lower part, some shale, grey, silty, micromicaceous.

Borehole footage

Lithology

Landry Formation

Top at 334 m (1096 ft) below sea-level.  
Thickness: 204 m (670 ft).

3050-3720

Limestone, brown, dark brown, buff, aphanitic with some micrograined and some pelletoid; in the lower part, some interbedded shale, black, silty.

Arnica Formation

Top at 538 m (1766 ft) below sea-level.  
Thickness: 166 m (544 ft).

3720-4264

Dolomite, brown, buff, pale buff, micro- to finely crystalline, in part sucrosic, with some intercrystalline porosity.

Tatsieta Formation

Top at 704 m (2310 ft) below sea-level.  
Thickness: 41 m (136 ft).

4264-4400

Limestone, pale buff, grey-buff, some white, aphanitic to microcrystalline, in part greenish coloured and argillaceous; some shale, pale green, micropyrritic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 853 m (2800 ft).

Peel Formation

Top at 746 m (2446 ft) below sea-level.  
Thickness: 22 m (72 ft).

4400-4472

Dolomite, pale grey, pale grey-buff, pale buff, microsucrosic; some shale, pale green, micropyrritic (cavings?).

Borehole footage

Lithology

Mount Kindle Formation

Top at 767 m (2518 ft) below sea-level.  
Thickness: 176 m (578 ft).

- 4472-4682 Dolomite, pale buff, buff, brown, very finely to medium crystalline; at 4530-4550 ft, much calcite, white.
- 4682-5050 Dolomite, buff, brown, micro- and very finely crystalline, sucrosic.

Franklin Mountain Formation

Top at 944 m (3096 ft) below sea-level.  
Thickness: >83 m (>271 ft).

Cherty member, thickness: 62 m (205 ft).

- 5050-5255 Dolomite, buff, grey-buff, micro-, very finely and finely crystalline; some chert, milky white, pale buff; traces of pyrite.
- 5255-5321 Dolomite, creamy white to pale buff, some pale grey, microcrystalline with some finely and medium crystalline.
- 5321 Total depth: 1622 m.

70. J-05

Log of Mesa Hanna River J-05.

Location: 65°44'30"N., 128°15'30"W.

Elevation of Kelly Bushing: 126 m (415 ft).

Well log prepared by the writer, based on neutron porosity log and well history report, there being no drill cuttings available below 820 ft well depth.

Borehole footage

Lithology

MESOZOIC

Thickness: 251 m (824 ft).

Basal beds (Cretaceous?).

714-820

(Below sandstone and coal). Sandstone (or sand), medium- to coarse-grained, poorly sorted quartzose.

DEVONIAN

Thickness: 574 m (1882 ft).

Horn River Group

Thickness: 238 m (782 ft).

Ramparts Formation

Top at 125 m (409 ft) below sea-level.

Thickness: 108 m (354 ft).

Reef member, thickness: 64 m (211 ft).

824-1035

Limestone, reef.

Platform member, thickness: 44 m (143 ft).

1035-1043

Carcajou marker, 2.4 m (8 ft), shale, black.

1043-1178

Limestone.

Hare Indian Formation

Top at 233 m (763 ft) below sea-level.

Thickness: 130 m (428 ft).

Borehole footage

Lithology

1178-1592

Shale, grey.

Bluefish Member, thickness: 4 m (14 ft).

1592-1606

Shale, black.

Devonian carbonates assemblage

Thickness: 335 m (1100 ft).

Hume Formation

Top at 363 m (1191 ft) below sea-level.

Thickness: 95 m (312 ft).

1606-1827

Limestone.

1827-1918

Shale.

Landry Formation

Top at 458 m (1503 ft) below sea-level.

Thickness: 11 m (37 ft).

1918-1955?

Limestone.

Arnica Formation

Top at 469 m (1540 ft) below sea-level.

Thickness: 67 m (219 ft).

1955?-2174

Dolomite.

Fort Norman Formation

Top at 536 m (1759 ft) below sea-level.

Thickness: 162 m (532 ft).

2174-2706

Anhydrite.

CAMBRIAN LOWER DEVONIAN

Ronning Group

Top at 698 m (2291 ft) below sea-level.

Thickness: >160 m (>542 ft).

estimated at 732 m (2400 ft).

3230

Total depth: 985 m.



71. J-19

Log of Canoe Chance Y.T. J-19.

Location: 66°08'31"N., 137°32'28"W.

Elevation of Kelly Bushing: 519 m (1702 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 1237 m (4060 ft).

Basal beds (Lower Cretaceous?).

4038-4060

(Below shale and siltstone). Siltstone, grey and green, up to 50% glauconite, in part very sandy with some very coarse rounded grains of quartz, in part argillaceous grading to silty shale; generally pyritic plus pyrite nodules.

UPPER PALEOZOIC

Hart River Formation

Top at 719 m (2358 ft) below sea-level.

Thickness: >209 m (>685 ft).

4060-4080

Sandstone, pale buff, fine-grained, poorly sorted, quartzose with some chert and kaolin; siliceous cement.

4080-4240

(R) Sandstone with some limestone.

4240-4338

Shale, dark brown to black, in part very calcareous and silty, bituminous with free bitumen.

Chance Sandstone Member, (4338 ft - 4562 ft).

4338-4380

At the top, limestone, brown, silty, grading to siltstone, pale brown to white, calcareous, and some sandstone of very coarse grains and pebbles of chert, smoky translucent; in the lower part, sandstone, pale grey, very fine- to medium- and coarse-grained with some very coarse grains and granules of chert, chert/quartz, kaolinitic, with some intergranular porosity.

4380-4498

(R) Sandstone.

Borehole footage

Lithology

4498-4553	Limestone, brown, buff, microcrystalline, in part argillaceous and silty, in part oil-stained; some chert, grey with brown specks.
4553-4562	Sandstone, grey, fine- to very coarse-grained, mainly chert, sub-angular to sub-rounded, siliceous cement.
4562-4745	Limestone, buff, white, some brown, in part silty or very finely sandy; some chert, pale grey with brown specks and smoky translucent; grades downward to limestone, dark grey-brown, grey-buff, white, micritic, in part argillaceous or silty, in part skeletal and fossiliferous; in the lower part, some interbedded shale, dark brown-grey, calcareous, silty.
4745	Total depth: 1446 m.

72. J-21

Log of Shell Peel River Y.T. J-21.

Location: 66°30'32"N., 134°04'23"W.

Elevation of Kelly Bushing: 46 m (150 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 341 m (1119 ft).

Basal beds (Lower Cretaceous?).

1048-1119

(Below shale). Sandstone and siltstone: sandstone, pale grey, fine-grained, poorly sorted, glauconitic; siltstone, grey, coarse-grained, in part very glauconitic; some interbedded shale, dark grey, silty, in part glauconitic.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 295 m (969 ft) below sea-level.

Thickness: >878 m (>2881 ft).

(Sandstone markers after Lutchman, 1977).

1119-1630

Shale, dark grey to black, in part silty, micromicaceous.

(M7 sandstone, "delta plain facies").

1630-2064

Interbedded sandstone, siltstone and shale: sandstone, mainly in the lower part, fine- to medium-grained, poorly sorted, in part kaolinitic plus grains of decaying feldspar, in part quartzitic grading to orthoquartzite; siltstone, mainly in the upper part, some argillaceous, some quartzitic; shale, dark brown-grey to black, in part silty.

2064-2367

Shale, dark grey-brown to black, mostly silty with some thinly interbedded quartzitic sandstones.

(M6 sandstone, "delta plain facies").

<u>Borehole footage</u>	<u>Lithology</u>
2367-2429	Sandstone, very poorly sorted, quartz/chert, quartzitic and in part kaolinitic; some shale, black, silty.
2429-2606	Shale, dark grey-brown to black, silty.  (M5 sandstone, "delta plain facies", implied).
2606-2672	Sandstone, very poorly sorted, quartz/chert, quartzitic; some shale, black.
2672-2711	Shale, as above.  (M4 sandstone, "delta front facies", implied).
2711-3130	Sandstone and shale: sandstone, grey, poorly sorted, quartz-chert, mostly quartzitic, grading to orthoquartzite; shale, dark brown-grey to black, in part silty.
3130-3208	Shale, dark grey to black, silty, with some thinly interbedded orthoquartzite.  (M2 sandstone, "prodelta facies", implied).
3208-3462	Orthoquartzite and siltstone, grey, in part quartzitic, with interbedded shale, dark grey to black, silty.
3462-4000	Shale, dark grey to black, in part silty.
4000	Total depth: 1219 m.

73. J-27

Log of TPPL Carcajou J-27.

Location: 65°36'38"N., 128°34'26"W.

Elevation of Kelly Bushing: 59 m (195 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 200 m (657 ft).

Basal beds (Lower Cretaceous?).

734-757

(Below shale and siltstone). (Poor samples).  
Siltstone, buff, coarse-grained, quartzitic,  
slightly glauconitic; traces of sandstone,  
very poorly sorted, coarse-grained, quartzose,  
glauconitic.

UPPER DEVONIAN

Imperial Formation

Top at 171 m (562 ft) below sea-level.

Thickness: 165 m (541 ft).

757-c. 1050

Siltstone and shale: siltstone, grey-buff,  
argillaceous; shale, grey and dark grey,  
micromicaceous.

c. 1050-1298

Siltstone, grey-buff, in part coarse-grained;  
some shale, dark grey, micromicaceous.

DEVONIAN

Thickness estimated at 745 m (2444 ft).

Horn River Group

Thickness: 383 m (1256 ft).

Canol Formation

Top at 336 m (1103 ft) below sea-level.

Thickness: 15 m (48 ft).

Borehole footage

Lithology

1298-1346

(Poor samples). Shale, black, bituminous.

Ramparts Formation

Top at 351 m (1151 ft) below sea-level.

Thickness: 271 m (888 ft).

Reef member, thickness: 179 m (586 ft).

1346-1932

Limestone, buff, white, reefoid.

Platform member and Siltstone lenti,  
thickness: 92 m (302 ft).

1932-1965

Carcajou marker, thickness: 10 m (33 ft). Siltstone, shale and limestone: siltstone, brown-grey, calcareous; shale, black, calcareous, silty, micromicaceous; limestone, brown, buff, finely crystalline, bioclastic, in part silty.

1965-2044

Limestone, brown, buff, white, bioclastic, in part silty.

2044-2090

Limestone, brown-grey, very silty, grading to siltstone, very calcareous.

2090-2172

Siltstone, limestone and shale; siltstone, brown-grey, argillaceous, very calcareous; limestone, black and white to grey-buff, silty, in part very argillaceous, grading to shale, black, silty, calcareous, micromicaceous.

2172-2234

Limestone and siltstone: limestone, grey-buff, silty, in part argillaceous; siltstone, buff-grey, argillaceous, calcareous.

Hare Indian Formation

Top at 621 m (2039 ft) below sea-level.

Thickness: 98 m (320 ft).

2234-2408

Shale, grey, brown-grey, calcareous, micromicaceous.

2408-2525

Siltstone and shale: siltstone, brown-grey, very calcareous, argillaceous; shale, dark brown-grey, variably calcareous, micromicaceous.

Bluefish Member, thickness: 9 m (29 ft).

Borehole footage

Lithology.

2525-2554

Shale, very dark brown-grey to black, mostly non-calcareous.

Devonian carbonates assemblage

Hume Formation

Top at 719 m (2359 ft) below sea-level.  
Thickness: 92 m (303 ft).

2554-2603

Limestone, brown to grey-buff and grey, argillaceous; in the lower part, some shale, brown-grey, calcareous, micromicaceous.

2603-2857

Limestone, brown, grey-buff, white to grey, micro-grained to "chalky" and bioclastic.

Landry Formation

Top at 811 m (2662 ft) below sea-level.  
Thickness: 19 m (61 ft).

2857-2918

Limestone, brown, dark brown, buff, white, aphanitic, in part pelletoid, in part "chalky" textured; traces of dolomite, brown, microcrystalline.

Arnica Formation

Top at 830 m (2723 ft) below sea-level.  
Thickness: 56 m (185 ft).

2918-3103

Dolomite, brown, dark brown, buff, microcrystalline with some intercrystalline porosity; traces of limestone, brown, argillaceous.

Fort Norman Formation

Top at 886 m (2908 ft) below sea-level.  
Thickness: >45 m (>147 ft).

3103-3250

Anhydrite and dolomite: anhydrite, pale buff, and pale grey; dolomite, brown, buff, microcrystalline.

3250

Total depth: 991 m.

74. J-42

Log Mobil Manuel Lake J-42.

Location: 67°11'40"N., 129°23'15"W.

Elevation of Kelly Bushing: 326 m (1068 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to acoustilog.

Borehole footage

Lithology

MESOZOIC

Thickness: 42 m (138 ft).

Basal Beds (Cretaceous).

60-138

(Below black shale). Sandstone and conglomerate:  
sandstone, white and grey, fine-grained, quartzose,  
glaucopitic; sandstone, white, poorly sorted, fine-  
to very coarse-grained, quartzose, glaucopitic;  
conglomerate, quartzose, granules and pebbles,  
mainly sub-rounded.

DEVONIAN

Thickness: 702 m (2304 ft).

Horn River Group

Thickness: 241 m (790 ft).

Ramparts Formation

Top at 283 m (930 ft) above sea-level.

Thickness: 37 m (122 ft).

Sandy member.

138-c. 260

Siltstone and limestone: siltstone, pale grey,  
calcareous, argillaceous, micromicaceous,  
grading to silty shale; siltstone, pale grey,  
coarse-grained, very calcareous, grading to  
limestone, buff to pale grey, bioclastic, in  
part very silty to sandy.

Hare Indian Formation

Top at 246 m (808 ft) above sea-level.

Thickness: 204 (668 ft).



Borehole footage

Lithology

c. 260-912

Shale, pale grey, grading downward through grey and brown-grey to dark brown-grey, silty, slightly calcareous, micromicaceous.

Bluefish Member, thickness: 5 m (16 ft).

912-928

Shale, black, non-calcareous.

Devonian carbonates assemblage

Thickness: 461 m (1514 ft).

Hume Formation

Top at 43 m (140 ft) above sea-level.

Thickness: 77 m (253 ft).

928-1008

Limestone, grey-buff, buff, grey, white in part argillaceous, bioclastic, fossiliferous; some shale, pale grey, grey, slightly calcareous, micromicaceous.

1008-1181

Limestone and shale: limestone, pale buff-grey to grey, mainly microcrystalline, in part argillaceous; some shell fragments; shale, grey, pale grey, flaky, slightly calcareous, micromicaceous.

Landry Formation

Top at 34 m (113 ft) below sea-level.

Thickness: 247 m (809 ft).

1181-1990

Limestone, buff to brown, aphanitic with some pelletoid; grades downward through limestone, buff to pale buff, aphanitic to micrograined, rarely dolomitic, and with some interbedded shale, grey, grey-green, flaky, to, in the lower part, limestone, pale buff to creamy white, aphanitic.

Arnica Formation

Top at 128 m (922 ft) below sea-level.

Thickness: 138 m (452 ft).

Borehole footage

Lithology

1990-2442

Dolomite, brown, dark brown, buff, micro-, very finely and finely crystalline, in part sucrosic with some good intercrystalline and vuggy porosity.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness: 1082 m (1374 ft) below sea-level.

Peel Formation

Top at 419 m (1374 ft) below sea-level.

Thickness: 63 m (208 ft).

2442-2650

Dolomite, pale grey, buff, microsucrosic, in part silty grading to dolomitic siltstone; some shale, grey-green and pale green, in part micro-pyritic; some shale, brown-grey.

Mount Kindle Formation

Top at 482 m (1582 ft) below sea-level.

Thickness: 235 m (772 ft).

2650-3422

Dolomite, buff, brown, pale buff, dark brown, micro- to medium crystalline, rarely coarsely crystalline, in part sucrosic.

Franklin Mountain Formation

Top at 717 m (2354 ft) below sea-level.

Thickness: 783 m (2570 ft).

3422-3570

Dolomite, pale buff, buff, finely, medium and coarsely crystalline.

Cherty member, thickness 256 m (841 ft).

3570-4411

Dolomite, creamy white, some buff, finely, medium and coarsely crystalline, in the lower part with much oolite structure and dolomitized oolites; some chert, white, milky white, pale buff, especially abundant at 3570-3630, 3700-3730 and 4200-4300 ft; some clear quartz.

Borehole footage

Lithology

- 4411-5760 Dolomite, pale buff and creamy white to brown and pale grey with rare greenish patches, mainly micro- and very finely crystalline, in part sucrosic; grades downward to microcrystalline; in the upper part, traces of chert and clear quartz.
- 5760-5992 Dolomite, buff, grey-buff, pale buff, microcrystalline, in part aphanitic, in part grey-brown and argillaceous grading to shale, brown-grey, dolomitic.

CAMBRIAN

Clastic-evaporites assemblage

Thickness: >219 m (>718 ft).

Saline River Formation

Top at 1501 m (4924 ft) below sea-level.  
Thickness: 188 m (618 ft).

Upper clastic member, thickness: 30 m (100 ft).

- 5992-6092 Shale, brick-red, some pale green, some purple, hard; some anhydrite; at 6070-6086 ft, dolomite, pale buff, microcrystalline.

Salt member, thickness: 123 m (402 ft).

- 6092-6494 Halite; at 6100-6200 and 6400-6494 ft, interbedded and interfingering shale.

Lower clastic member, thickness: 35 m (116 ft).

- 6494-6560 Shale, dolomite, siltstone and sandstone: shale, grey-green, pale green, pale purple, trace of maroon; dolomite, buff to grey-brown, microcrystalline, siliceous; siltstone, pale buff to pale green, siliceous; sandstone, white, very fine-grained, silty, quartzitic.

- 6560-6590 Chert, pale buff-grey translucent, brown-grey speckled, dark brown, in part pyritic; some dolomite, buff, brown, microcrystalline.

- 6590-6610 Dolomite, buff, brown, very finely crystalline and sucrosic.

Borehole footage

Lithology

Mount Cap Formation

Top at 1689 m (5542 ft) below sea-level.  
Thickness: >30 m (>100 ft).

6610-6710

Shale and siltstone: shale, grey-green, buff-grey, pale green, siliceous, in part silty; siltstone, grey-buff, pale buff, green-grey, siliceous; some dolomite, brown and white, medium and coarsely crystalline.

6710

Total depth: 2045 m.

75. J-80

Log of Bluemt. South Delta J-80.  
Location: 67°39'36"N., 134°44'29"W.  
Elevation of Kelly Bushing: 15 m (50 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at bedrock, 34 m (110 ft) below sea-level.  
Thickness: 1773 m (5818 ft).

160(S)-5978

Siltstone, shale and sandstone: siltstone, grey and brown-grey, coarse-grained and fine-grained, argillaceous, micaceous; shale, dark grey, silty, micromicaceous; in the upper part only, sandstone, brown-grey, very fine- and fine-grained, poorly sorted, rare medium-grained, quartz/chert, silty; also in the upper part only, sandstone and siltstone has in part siliceous cement grading to orthoquartzite.

DEVONIAN

Thickness: 436 m (1430 ft).

Horn River Formation

Top at 1807 m (5928 ft) below sea-level.  
Thickness: 13 m (44 ft).

5978-6022

Shale, black, bituminous with traces of pyrite.

6008

?Top Bluefish Member, thickness: 4 m (14 ft).

Devonian carbonate assemblage

Thickness: 422 m (1386 ft).

Hume Formation

Top at 1820 m (5972 ft) below sea-level.  
Thickness: 69 m (228 ft).

6022-c. 6150

Limestone, brown to buff, aphanitic.

Borehole footage

Lithology

c. 6150-6250

Limestone, buff, white, grey, micrograined, in part "chalky", grading downward to grey, white, brown, black, bioclastic, in part argillaceous and silty, with some interbedded, shale, dark grey, micromicaceous.

Landry Formation

Top at 1890 m (6200 ft) below sea-level.  
Thickness: 301 m (988 ft).

6250-7238

Limestone, buff to white, skeletal; traces of dolomite; at 6950-7080 ft, limestone, dark grey-brown, very argillaceous.

Tatsieta Formation

Top at 2191 m (7188 ft) below sea-level.  
Thickness: 52 m (170 ft).

7238-7408

Limestone, pale buff, buff, aphanitic, with interbedded shale, pale green micropyrritic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1296 m (4252 ft).

Peel Formation

Top at 2243 m (7358 ft) below sea-level.  
Thickness: 290 m (952 ft).

7408-8360

Dolomite, pale grey, pale buff, some brown and dark brown-grey, mainly microcrystalline, some very finely crystalline and some micro-sucrosic; some silty and/or argillaceous beds; at 7900-7930 ft, limestone, pale buff, aphanitic, in part microcrystalline and dolomitic.

Mount Kindle Formation

Top at 2533 m (8310 ft) below sea-level.  
Thickness: 244 m (800 ft).

Borehole footage

Lithology

8360-8664

Limestone, brown, pale buff, white, in part aphanitic, in part very finely and finely crystalline, variably dolomitized; some dolomite, brown, buff, finely to medium crystalline.

8664-9160

Dolomite, dark brown-grey to grey-buff, micro- to finely and medium crystalline; traces of chert, mottled brown and grey.

Franklin Mountain Formation

Top at 2777 m (9110 ft) below sea-level.  
Thickness: >104 m (>340 ft).

9160-9260

Dolomite, pale grey-buff, medium to coarsely crystalline with trace of intercrystalline porosity; traces of pyrite.

Cherty member, thickness: >73 m (>240 ft).

9260-9500

Dolomite, as above, with some clear quartz and traces of chert, white, translucent.

9500

Total depth: 2896 m.

76. K-04

Log of At. Ontaratue K-04.

Location: 66°33'38"N., 130°46'10"W.

Elevation of Kelly Bushing: 104 m (340 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 79 m (260 ft).

Basal beds (Lower Cretaceous).

220-270

(Below glauconitic sandstone, shale and siltstone).  
Sandstone and siltstone: sandstone, pale buff, fine- and very fine-grained, poorly sorted, quartzose, in part silty; siltstone, grey-buff to brown and black, in part coarse-grained, argillaceous; some shale, very dark grey, with traces of glauconite concentrations; some sand, coarse, rounded to sub-rounded, quartz.

90 ft - age: Early Cretaceous (W.W. Brideaux, in Brideaux et al., 1976, p. 4).

160-220 ft - age: Lower Albian (or late Aptian) (N.S. Ioannides; see Appendix I, 3-NSI-1978).

270-390

Siltstone, pale grey, in part coarse-grained and very finely sandy, in part kaolinitic; probably some interbedded shale.

390-430

Coal.

300-430 ft - age: probable Lower Cretaceous (see Appendix I, 3-NSI-1978).

UPPER DEVONIAN

Imperial Formation

Top at 27 m (90 ft) below sea-level.

Thickness: 135 m (444 ft).

430-874

Shale, dark grey, in part silty, micromicaceous.



Borehole footage

Lithology

440-560 ft - age: Frasnian(?). (see Appendix I, 3-NSI-1978).

800 ft - age: Devonian (W.W. Brideaux, in Brideaux et al., 1976, p. 4).

DEVONIAN

Thickness: 756 m (2480 ft).

Horn River Group

Thickness: 241 m (790 ft).

Canol Formation

Top at 163 m (534 ft) below sea-level.

Thickness: 21 m (70 ft).

874-944

Shale, black, bituminous, in part pyritic; at about 900 ft, some chert, black.

Ramparts Formation

Top at 184 m (604 ft) below sea-level.

Thickness: 15 m (48 ft).

Sandy member.

944-992

Siltstone, buff to pale grey, in part coarse-grained, calcareous, very micaceous, in part grading to very silty limestone.

Hare Indian Formation

Top at 199 m (652 ft) below sea-level.

Thickness: 205 m (672 ft).

992-1333

Siltstone and shale: siltstone, brown-grey, argillaceous, calcareous, very micaceous; shale, grey, micromicaceous, in part calcareous; some siltstone, as above, (cavings?).

Borehole footage

Lithology

1333-1629

Shale: at the top, grey, buff-grey, slightly calcareous, micromicaceous; grades downward through brown-grey and dark brown-grey to black, non-calcareous.

Bluefish Member, thickness: 11 m (35 ft).

1629-1664

Shale, black, calcareous, grading to limestone, dark brown, speckled white, very argillaceous, fossiliferous; some limestone, grey-buff to white, microcrystalline, bioclastic.

Devonian carbonate assemblage

Thickness: 515 m (1690 ft).

Hume Formation

Top at 404 m (1324 ft) below sea-level.  
Thickness: 97 m (319 ft).

1664-1768

Limestone, grey-brown to grey, buff and white, microcrystalline, bioclastic; some sparry calcite; in the lower part, some shale, grey, calcareous, micromicaceous, and limestone in part silty and argillaceous.

1768-1900

Shale, grey, brown-grey, calcareous, micromicaceous; some interbedded limestone, grey-buff to white, micro- to finely crystalline.

1900-1983

Limestone, grey-buff to grey and white, bioclastic, in part silty and argillaceous; some interbedded shale, grey, buff-grey, calcareous, micromicaceous.

Landry Formation

Top at 501 m (1643 ft) below sea-level.  
Thickness: 208 m (683 ft).

1983-2666

Limestone: at the top, brown, dark brown, grading downward through brown and buff to buff to pale buff; mainly aphanitic with some pelletoid throughout; in the lower part, some dolomite, microcrystalline.

Borehole footage

Lithology

Arnica Formation

Top at 709 m (2326 ft) below sea-level.  
Thickness: 174 m (570 ft).

2666-3236

Dolomite, brown, buff, dark brown, micro- to very finely crystalline, in part sucrosic; some intercrystalline porosity; at 3078-3138 ft: limestone, pale buff to creamy white, aphanitic with some microcrystalline.

Tatsieta Formation

Top at 883 m (2896 ft) below sea-level.  
Thickness: 36 m (118 ft).

3236-3290

Dolomite and limestone: dolomite, pale buff to creamy white, microsucrosic, in part medium crystalline with intercrystalline porosity; limestone, pale buff, brown, microcrystalline to aphanitic, in part dolomitic; traces of s shale, pale green.

3290-3354

Limestone and shale: limestone, creamy white to pale buff and buff, aphanitic; shale, green-grey to pale green, in part micropyrrite; some dolomite, very pale grey, microsucrosic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness: 1398 m (4588 ft).

Peel Formation

Top at 919 m (3014 ft) below sea-level.  
Thickness: 197 m (645 ft).

3354-3800

Dolomite, pale buff to pale grey, colour grading downward through buff and pale buff to grey-buff, microsucrosic.

3800-3970

Samples missing.

3970-3999

Very poor samples.

Borehole footage

Lithology

Mount Kindle Formation

Top at 1115 m (3659 ft) below sea-level.  
Thickness: 219 m (717 ft).

3999-4716

Dolomite, buff, brown, some grey-buff, very finely, finely crystalline; in the lower part, some sucrosic texture.

Franklin Mountain Formation

Top at 1334 m (4376 ft) below sea-level.  
Thickness: 983 m (3226 ft).

4716-5110

Dolomite, creamy white to pale buff, buff, some pale grey, variably micro- to medium and coarsely crystalline.

Cherty member, thickness: 268 m (878 ft).

5110-5988

Dolomite, as above, some brown; some chert, white, pale buff, especially abundant at 5120, 5150-5180 and 5210-5240 ft; in the lower part, some clear quartz.

5988-7742

Dolomite, buff, brown, pale buff, some zones creamy white to pale buff, mainly micro- to very finely crystalline with some finely and rare medium to coarsely crystalline.

7742-7942

Dolomite, brown, buff, buff-grey, microcrystalline to aphanitic, in part argillaceous; some interbedded shale, green-grey, dolomitic.

CAMBRIAN

Clastics-evaporites assemblage

Thickness: 209 m (686 ft).

Saline River Formation

Top at 2317 m (7602 ft) below sea-level.  
Thickness: 82 m (269 ft).

Borehole footage

Lithology

7942-8080

Shale, purple, brown, brick-red, grey-green, olive-green, dolomitic, slightly micaceous; some dolomite, brown to pale buff, micro-crystalline; some siltstone, pale buff, pink, pale green, siliceous, in part coarse-grained; traces of anhydrite.

8080-8211

Samples missing - sonic log indicates halite.

Mount Cap Formation

Top at 2399 m (7871 ft) below sea-level.  
Thickness: 51 m (167 ft).

8211-8378

Siltstone, sandstone and shale: siltstone, grey to grey-buff, siliceous; sandstone, pale grey, very fine-grained, in part glauconitic; shale, brown-grey, green-grey, siliceous, in part calcareous.

?Mount Clark Formation

Top at 2450 m (8038 ft) below sea-level.  
Thickness: 76 m (250 ft).

8378-8628

Orthoquartzite, pink, purple, some clear with red streaks.

PROTEROZOIC

Top at 2526 m (8288 ft) below sea-level.

Argillite unit, thickness: >98 m (>322 ft).

8628-8950

Orthoquartzite and argillite: orthoquartzite, grey, pale grey; argillite, dark grey to black, micaceous.

8950

Total depth: 2728 m.

77. K-09

Log of Shell Peel River Y.T. K-09.

Location: 66°18'36"N., 134°01'02"W.

Elevation of Kelly Bushing: 350 m (1147 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 851 m (2792 ft).

2650

Age: Mesozoic.

2695

Age: probably Cretaceous (*see* Appendix I,  
CRS-5-MSB-1969).

Basal beds (Lower Cretaceous?).

2730-2792

(Below glauconitic siltstone, sandstone and shale).  
Sandstone and siltstone: sandstone, pale grey,  
fine-grained, poorly sorted, quartzose, glauconitic;  
siltstone, brown-grey, argillaceous, slightly  
glauconitic, micaceous; some shale, black, in part  
very glauconitic.

2747 ft - age: Tournaisian (M.S. Barss; *see* Appendix  
I, CRS-5-MSB-1969).

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 501 m (1645 ft) below sea-level.

Thickness: >703 m (>2308 ft).

(Sandstone markers implied after Lutchman, 1977).

2792-3354

Shale, dark grey to black, in part silty, micro-  
micaceous; traces of siltstone, quartzitic.

2800, 2847 and 3300 ft - age: Tournaisian  
(M.S. Barss; *see* Appendix I, CRS-5-MSB-1969).

(M7 sandstone, "delta plain facies").

3354-3661

Sandstone, pale buff, fine- or medium-grained,  
poorly sorted, kaolinitic, in part quartzitic;  
shale, dark brown-grey to black, silty, micro-  
micaceous.

Borehole footage

Lithology

3661-4332 Shale, dark brown-grey to black, in part silty, micromicaceous; some thin sandstone beds.  
3848 ft - age: Tournaisian (M.S. Barss; see Appendix I, CRS-5-MSB-1969).  
(M6 sandstone, "delta plain facies").

4332-4445 Sandstone, as above; some interbedded shale, black, silty.  
4405 ft - age: Tournaisian (M.S. Barss; see Appendix I, CRS-5-MSB-1969).

4445-4690 Shale, as above, with thin sandstone beds.  
(M5 sandstone, "delta plain facies").

4690-4751 Sandstone, poorly sorted, kaolinitic, in part quartzitic.

4751-4897 Shale, dark brown-grey to black, in part silty, micromicaceous.  
(M4 sandstone, "delta front facies").

4897-5100 Sandstone, very poorly sorted quartz/chert, quartzitic grading to orthoquartzite; some interbedded shale, as above.

5100 Total depth: 1554 m.

78. K-15c

Log of Can. Sthn. Carnwath River No. 1.

Location: 67°44'40"N., 128°47'53"W.

Elevation of Kelly Bushing: 185 m (608 ft).

Well log prepared by the writer, based on drill cuttings;  
no mechanical logs.

Borehole footage

Lithology

DEVONIAN

Thickness: 479 m (1570 ft).

Horn River Group

Hare Indian Formation

Top at bedrock, 182 m (598 ft) above sea-level.

Thickness: 35 m (115 ft).

10(S)-c. 100(S)

Shale, grey to buff-grey, micromicaceous, grading  
downward to dark brown-grey.

Bluefish Member, thickness: 8 m (25 ft).

c. 100(S)-125(S)

Shale, black, calcareous, grading to limestone,  
very argillaceous.

Devonian carbonates assemblage

Thickness: 443 m (1455 ft).

Hume Formation

Top at 147 m (483 ft) above sea-level.

Thickness: 69 m (225 ft).

125(S)-350(S)

Limestone: at the top, grey, buff-grey, argillaceous  
and silty; grades downward through limestone  
and shale: limestone, grey, buff, white, bioclastic,  
fossiliferous; shale, grey to buff-grey, calcareous,  
silty; to, in the lower part, limestone and shale:  
limestone, grey-buff, micritic, in part argillaceous;  
shale, grey, flaky to splintery, calcareous,  
micromicaceous.



Borehole footage

Lithology

Landry Formation

Top at 79 m (258 ft) above sea-level.  
Thickness: 213 m (700 ft).

350(S)-c. 700

Limestone, brown, buff, aphanitic; some shell fragments; traces of shale, grey-green.

c. 700-c. 900

Limestone, buff, brown, microcrystalline, in part dolomitic, in part pelletoid; traces of shale, green-grey.

c. 900-1050(S)

Limestone, pale buff, micrograined to aphanitic; traces of shale, pale green, micropyrritic.

Arnica Formation

Top at 135 m (442 ft).  
Thickness: 162 (530 ft).

1050(S)-1580(S)

Dolomite, pale buff, buff, brown, dark brown, micro- to finely crystalline, in part sucrosic; in the upper part, some limestone, buff, dolomitic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1164 m (3820 ft).

Peel Formation

Top at 296 m (972 ft) below sea-level.  
Thickness: 143 m (470 ft).

1580(S)-2050(S)

Dolomite, pale grey, grey, buff, grey-buff, some brown, mainly microcrystalline, in part micro-sucrosic, in part argillaceous or silty; rare shale, green-grey, dolomitic, silty.

Mount Kindle Formation

Top at 440 m (1442 ft) below sea-level.  
Thickness: >79 m (>258 ft).

2050(S)-2190(S)

Dolomite, pale buff, buff to brown, some pale grey, very finely, finely and medium crystalline, in part very siliceous with clear quartz crystals; some intercrystalline porosity.

Borehole footage

Lithology

2190(S)-2240(S)

Dolomite, brown, dark brown, buff, very finely and finely crystalline.

2240(S)-2308

Dolomite, pale buff to pale grey, very finely, finely and medium crystalline; traces of pyrite.

2308

Total depth: 703 m.

79. K-15t

Log of McD. Taylor Lake Y.T. K-15.  
Location: 65°54'39"N., 133°03'00"W.  
Elevation of Kelly Bushing: 469 m (1538 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 608 m (1994 ft).

Basal beds (Lower Cretaceous?).

2090-2106

(Below shale). Shale, very dark grey, very glauconitic, with floating sand grains, coarse and very coarse, sub-rounded, quartz.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 173 m (568 ft) below sea-level.  
Thickness: 410 m (1346 ft).

(Sandstone markers after Lutchman, 1977).

2106-2220

Shale, very dark brown-grey, silty; some siltstone, dark brown-grey.

(M6 sandstone, "delta front facies").

2220-2417

Sandstone, buff, very fine-, fine-, and medium-grained, in part kaolinitic; some porosity; traces of glauconite; some shale, as above.

2417-2790

Shale, very dark brown-grey, silty; some siltstone, dark brown-grey.

(M5 sandstone, "delta plain facies").

2790-3004

Sandstone, buff, very fine- and fine-grained, with good porosity.

3004-3136

Shale, very dark brown-grey, silty; some sandstone, as above.

(M4 sandstone, "delta fringe facies").

Borehole footage

Lithology

- 3136-3340 Sandstone, buff, very fine- and fine-grained; some orthoquartzite: some shale, very dark brown-grey, silty.
- 3340-3406 Shale, very dark brown-grey, silty.
- 3406-3452 Shale, as above, with interbedded orthoquartzite, buff and brown, ?fine-grained, at 3406-3412 and 3430-3452 ft.

UPPER DEVONIAN

Imperial Formation

Top at 583 m (1914 ft) below sea-level.  
Thickness: 262 m (860 ft).

- 3452-4210 Shale, very dark grey to black, platy; some pyrite; at 3716-3744 ft, siltstone, dark grey-brown, hard.
- 4210-4312 Shale and siltstone: shale, black, silty, bituminous; siltstone, dark brown-grey, argillaceous, in part dolomitic; some pyrite.

DEVONIAN

Thickness: 783 m (2570 ft).

Horn River Formation

Top at 846 m (2774 ft) below sea-level.  
Thickness: 43 m (142 ft).

- 4312-4454 Shale, black, bituminous, non-calcareous, pyritic; at the base some veins of white (R) barite.
- 4436 Top Bluefish Member, thickness: 5 m (18 ft).  
4440-4450 ft - calcite, fluorite, quartz, barite, (see Appendix I, 79-XR-10).

Devonian carbonates assemblage

Thickness: 740 m (2428 ft).

Borehole footage

Lithology

Ihume Formation

Top at 889 m (2916 ft) below sea-level.  
Thickness: 166 m (546 ft).

- 4454-4546 Limestone, dark brown to black and white, in part argillaceous and silty, in part dolomitic; some calcite, white.
- 4546-4800 Limestone, brown, buff, white, micro- and fine-grained, in part argillaceous, fossiliferous; grades downward to limestone, brown, aphanitic.
- 4800-5000 Limestone and shale: limestone, brown and white, argillaceous, silty, fossiliferous; shale, brown-grey, calcareous, micromicaceous.

Landry Formation

Top at 1055 m (3462 ft) below sea-level.  
Thickness: 381 m (1250 ft).

- 5000-5200 Limestone: brown, grey-brown and white, micro-grained, argillaceous; brown, aphanitic, decreasing downward; some calcite, white.
- 5200-5690 Limestone, brown, buff, aphanitic, in part micro-crystalline, in part dolomitic grading to dolomite, brown, microcrystalline.
- 5690-6100 Dolomite, buff and brown, micro- to finely and medium crystalline; some calcite white.
- 6100-6250 Limestone, brown, dark brown, grey and white, fine-grained, dolomitic; some chert, buff, brown, grey; near the base, much calcite.

Arnica Formation

Top at 1436 m (4712 ft) below sea-level.  
Thickness: 152 m (500 ft).

- 6250-6750 Dolomite, at the top buff, brown, finely to medium crystalline, grading downward to pale buff, microcrystalline; intensely fractured, with many samples almost 100% calcite; in the lower part, traces of shale, pale green, micropyrritic.

Borehole footage

Lithology

Tatsieta Formation

Top at 1589 m (5212 ft) below sea-level.  
Thickness: 40 m (132 ft).

6750-6882

Dolomite, buff and brown, microcrystalline to aphanitic, calcareous; much calcite.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1171 m (3843 ft).

Peel Formation

Top at 1629 m (5344 ft) below sea-level.  
Thickness: 219 m (718 ft).

6882-7600

Dolomite, pale buff, pale grey, microsucrosic, grading downward to grey, buff, in part silty; heavily fractured, especially in the upper part, with calcite, white, throughout.

Mount Kindle Formation

Top at 1848 m (6062 ft) below sea-level.  
Thickness: >62 m (>204 ft).

7600-7804

Dolomite, brown, dark brown, buff, very finely crystalline, sucrosic; some calcite filling fractures.

7804

Total depth: 2379 m.

80. K-28

Log of I.O.E. Swan Lake K-28.

Location: 67°07'42"N., 133°34'44"W.

Elevation of Kelly Bushing: 90 m (294 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at bedrock, 80 m (264 ft) above sea-level.  
Thickness: 82 m (270 ft).

(?Ml sandstone, "delta plain facies", Lutchman, 1977).

30(S)-c. 300

Sandstone, poorly sorted, fine-grained with silt  
and medium and coarse grains of chert (black,  
grey, some green), quartz and kaolin; some  
interbedded shale and siltstone.

UPPER DEVONIAN

Imperial Formation

Top at 2 m (6 ft) below sea-level.  
Thickness: 1257 m (4125 ft).

c. 300-4425

Siltstone, sandstone and shale: siltstone, grey,  
coarse-grained, micaceous; siltstone, brown-  
grey, argillaceous, micromicaceous; sandstone,  
pale grey, very fine-grained, silty, chert/quartz;  
shale, dark grey, silty, micromicaceous; shale  
increases downward at expense of sandstone.

DEVONIAN

Thickness estimated at 758 m (2487 ft).

Horn River Formation

Top at 1259 m (4131 ft) below sea-level.  
Thickness: 75 m (246 ft).

4425-4671

Shale, black, bituminous, slightly pyritic.

4654

Top Bluefish Member, thickness: 5 m (17 ft).

Borehole footage

Lithology

Devonian carbonates assemblage

Hume Formation

Top at 1334 m (4377 ft) below sea-level.  
Thickness: 98 m (321 ft).

4671-4992

Limestone, brown, grey, buff, bioclastic, in part argillaceous and silty; some shale, grey, calcareous, micromicaceous.

Landry Formation

Top at 1432 m (4698 ft) below sea-level.  
Thickness: 270 m (886 ft).

4992-5878

Limestone, brown, buff, aphanitic and pelletoid; near the base, some dolomite, sucrosic.

Arnica Formation

Top at 1702 m (5584 ft) below sea-level.  
Thickness: >47 m (>153 ft).

5878-6031

Dolomite, brown, buff, micro- to very finely crystalline, sucrosic.

6031

Total depth: 1838 m.



81. K-35

Log of Banff Rat Pass K-35.

Location: 67°54'43"N., 135°21'57"W.

Elevation of Kelly Bushing: 25 m (81 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 407 m (1334 ft).

Basal beds (Jurassic?) or Lower Cretaceous?.

1824-1893

(Below glauconitic siltstone and sandstone, and shale). Shale, brown-black, silty, bituminous, micromicaceous, grading to siltstone, grey-brown, argillaceous, micaceous; some siltstone, pale grey, coarse-grained, slightly glauconitic.

PERMIAN

Unnamed shale and sandstone unit

Top at 552 m (1812 ft) below sea-level.

Thickness: 91 m (299 ft).

1893-1936

Sandstone, pale buff, fine- and very fine-grained, quartzose, kaolinitic.

1936-2010

Shale, black, very silty, hard; some thinly interbedded orthoquartzite, clear, fine-grained.

2010-2192

Shale with orthoquartzite, as above, and shale, brown, flaky to splintery; grades downward to shale, brown, dark brown, flaky to splintery, in part very finely sandy, and some sandstone, fine-grained, quartzitic.

CAMBRIAN-LOWER DEVONIAN

Ronning-Road River

Thickness: >1162 m (>3812 ft).

Borehole footage

Lithology

Road River Formation

Thickness: 441 m (1448 ft).

(?Peel equivalent)

Top at 643 m (2111 ft) below sea-level.

Thickness: 231 m (758 ft).

2192-2332

Shale, pale grey and grey, non-calcareous, brittle, in part micropyrritic; some siltstone, pale grey.

2332-2690

Shale, black, very dolomitic, silty, pyritic; some dolomite, dark grey and dark brown to black, argillaceous, siliceous, in part grading to chert.

2690-2765

Dolomite and shale: dolomite, very dark grey, microcrystalline, argillaceous; shale, black, slightly dolomitic, silty, pyritic.

2765-2950

Shale, pale grey, grey, dark grey and black (possibly very thin colour banding), variably dolomitic, siliceous, pyritic.

Road River Formation

(?Mount Kindle equivalent)

Top at 874 m (2869 ft) below sea-level.

Thickness: 210 m (690 ft).

2950-3230

Shale and dolomite: shale, black, silty, dolomitic; dolomite, dark grey, very finely to finely crystalline, argillaceous, in part siliceous; some chert, dark grey-brown to grey; some pyrite; some calcite, white, filling fractures.

3230-3640

Chert and dolomite: chert, black, in part argillaceous, grading to shale, black, siliceous; some chert, dark grey-brown and traces of chert, translucent; dolomite, dark grey, very finely crystalline, argillaceous; some pyrite; some calcite, white, filling fractures.

Franklin Mountain Formation

Top at 1085 m (3559 ft) below sea-level.

Thickness: >721 m (>2364 ft).

Borehole footage

Lithology

Cherty member, thickness: 228 m (748 ft).

3640-3840

Dolomite: in the upper part, grey, dark grey, pale grey, finely, medium and coarsely crystalline; some interbedded shale, black; much chert, dark brown, translucent grey-brown, with traces of oolite structure; some calcite, white, filling fractures; grades downward to dolomite, black and white, medium and coarsely crystalline, crystals "floating" in black argillaceous bituminous matrix; much chert, brown to dark brown and black.

3840-4388

Dolomite, grey to very dark grey (with black insoluble residue), micro-, very finely and finely crystalline, in part siliceous, grading to chert, dark brown, grey-brown and black; some dolomite, grey, finely to medium crystalline; some chert, grey and dark grey; some quartz; some calcite, white, filling fractures (especially at 4120-4140 ft).

4388-6004

Limestone and shale: Limestone, grey, brown-grey to very dark brown-grey, micro- to very finely crystalline, variably silty and argillaceous, in part coarsely silty; shale, dark brown-grey to black, silty, calcareous to very calcareous; some scattered pyrite; traces of dolomite, grey, finely to medium crystalline; rare chert, brown-black.

6004

Total depth: 1830 m.

82. K-47

Log of At. Circle River No. 1.

Location: 66°26'38"N., 130°08'50"W.

Elevation of Kelly Bushing: 87 m (285 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at bedrock, 44 m (145 ft) above sea-level.  
Thickness: 105 m (345 ft).

140(S)-485

Shale, dark grey, micromicaceous; traces of  
siltstone, grey, argillaceous.

270-330 ft - age: Paleozoic, Devonian (Brideaux  
W.W., in Cook and Aitken, 1975).

DEVONIAN

Thickness estimated at 793 m (2601 ft).

Horn River Group

Thickness: 257 m (844 ft).

Canol Formation

Top at 61 m (200 ft) below sea-level.  
Thickness: 28 m (92 ft).

485-577

Shale, very dark brown-grey to black, bituminous;  
traces of pyrite.

Ramparts Formation

Top at 89 m (292 ft) below sea-level.  
Thickness: 57 m (188 ft).

Platform member and Siltstone lentil.

Borehole footage

Lithology

577-765

Limestone and siltstone: limestone, buff, silty; siltstone, grey, slightly calcareous; grade downward to siltstone and shale: siltstone, brown, very calcareous, micaceous; shale, brown, calcareous, silty, micromicaceous.

Hare Indian Formation

Top at 146 m (480 ft) below sea-level.  
Thickness: 172 m (564 ft).

765-1278

Shale, at the top, brown-grey, calcareous, micromicaceous grading downward through grey, and brown-grey to dark brown-grey, variably calcareous.

Bluefish Member, thickness: 15 m (50 ft).

Devonian carbonates assemblage

Hume Formation

Top at 318 m (1044 ft) below sea-level.  
Thickness: 109 m (357 ft).

1329-1686

Limestone, brown, grey, microcrystalline, in part bioclastic, argillaceous and silty, grading downwards to shale, grey, calcareous, micromicaceous, with some limestone, buff, grey, fossiliferous.

Landry Formation

Top at 427 m (1401 ft) below sea-level.  
Thickness: 227 m (746 ft).

1686-2432

Limestone, in the upper part, brown, dark brown, microcrystalline, grades downward through brown, aphanitic, and buff, brown, microcrystalline to aphanitic with traces of pelletoid, to buff, pale buff, microcrystalline, in part with some dolomite, buff, microcrystalline; near the base, some interbedded shale, grey.

Arnica Formation

Top at 654 m (2147 ft) below sea-level.  
Thickness: >69 m (>228 ft).

Borehole footage

Lithology

2432-2660

Dolomite, brown, buff, dark brown, micro- to very finely crystalline, sucrosic, with some intercrystalline porosity.

2660

Total depth: 811 m.

83. K-56p

Log of Socony H. Porcupine River Y.T. K-56.

Location: 66°05'33"N., 137°55'32"W.

Elevation of Kelly Bushing: 498 m (1634 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 1797 m (5895 ft).

Basal beds (Lower Cretaceous?).

5891-5895

(Below shale and siltstone). Siltstone or shale,  
highly pyritic; sand, coarse, sub-rounded,  
quartz; some shale, glauconitic.

UPPER PALEOZOIC

Thickness: >794 m (>2605 ft).

Hart River Formation

Top at 1299 m (4261 ft) below sea-level.

Thickness: 647 m (2122 ft).

5895-5901

Chert, pale grey, buff, milky white.

5901-6272

Limestone, brown to buff and white, bioclastic  
and micritic, in part argillaceous; traces of  
chert; at 6100-6210 ft, limestone, very  
argillaceous, interbedded with shale, black,  
calcareous.

?Chance Sandstone Member, 6272-6927 ft. (Graham,  
1973).

6272-6597

Limestone and shale: limestone, dark grey-brown,  
argillaceous, skeletal; shale, brown-black,  
calcareous, silty; in the lower part, grades  
downward to shale, dark brown-grey to black,  
calcareous, silty, in part grading to lime-  
stone, very argillaceous.

6597-6927

Limestone and shale: limestone, dark grey-brown  
to grey-buff and white, argillaceous or silty,  
in part skeletal and crinoidal; shale, black,  
in part silty and calcareous.

Borehole footage

Lithology

- 6927-7535 Limestone, grey-brown to buff, pale grey and white, micritic; some chert, pale buff, pale grey, brown.
- 7535-7560 Shale, brown-black, in part silty and calcareous, grading to limestone, very argillaceous; some chert, dark brown.
- 7560-7922 Limestone and chert: limestone, brown, dark grey-brown, grey-buff, white, micritic, in part silty or argillaceous; chert, brown, grey, pale with brown speckles, smoky translucent.
- 7922-7960 Sandstone, brown to grey, very poorly sorted, in part fine- to coarse-grained, in part very coarse-grained, angular chert; some limestone, grey-brown to buff, siliceous, in part sandy.
- 7960-8017 Limestone, chert and shale: limestone, brown, dark grey-brown, grey-buff, white, siliceous, in part argillaceous, silty or sandy, grading to sandstone, calcareous; chert, brown, grey-buff, grey; shale, black, silty.

Ford Lake Shale

Top at 1946 m (6383 ft) below sea-level.  
Thickness: >147 m (>483 ft).

- 8017-8500 Shale, dark grey to black, in part silty, micromicaceous; some thinly interbedded quartzitic siltstone and sandstone and orthoquartzite.
- 8500 Total depth: 2591 m.



84. K-56r

Log Decalta Rond Lake No. 2

Location: 67°05'30"N., 128°25'44"W.

Elevation of Kelly Bushing: 242 m (793 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to electric log.

Borehole footage

Lithology

MESOZOIC

Thickness: 18 m (60 ft).

Cretaceous.

c. 40-c. 100

Sand, fine to coarse, sub-angular to rounded,  
quartz; some sandstone, fine-grained, quartzose;  
some glauconite; near the base, some carbonaceous  
fragments; all sand oil saturated.

DEVONIAN

Thickness estimated at 556 m (1823 ft).

Horn River Group

Hare Indian Formation

Top at 211 m (693 ft) above sea-level.  
Thickness: 112 m (366 ft).

c. 100-c. 430

Shale, grey, green-grey, buff-grey, variably  
calcareous, micromicaceous.

Bluefish Member, thickness: 11 m (36 ft).

c. 430-466

Shale, dark brown-grey to black, at the top, non-  
calcareous, and at 453-466 ft, very calcareous.

Devonian carbonates assemblage

Hume Formation

Top at 100 m (327 ft) above sea-level.  
Thickness: 83 m (272 ft).

466-500

Limestone, grey-buff, buff, grey, brown-grey,  
bioclastic, in part argillaceous and silty,  
fossiliferous.

Borehole footage

Lithology

500-738

Samples missing. (R) Limestone and shale: limestone, brown-grey, "fine fragmental as well as whole fossils"; shale, "dull green", slightly calcareous.

Landry Formation

Top at 17 m (55 ft) above sea-level.  
Thickness: >20 m (>67 ft).

738-805

Samples missing. (R) Limestone, brown, "very finely crystalline to dense".

805

Total depth: 246 m.

85. K-63

Log of Shell Sainville River K-63.

Location: 66°22'37"N., 133°12'15"W.

Elevation of Kelly Bushing: 139 m (455 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footageLithology

## MESOZOIC

Thickness: 398 m (1306 ft).

Basal beds (Lower Cretaceous).

1270-1356

(Below glauconitic shale and siltstone). Siltstone, brown-grey, coarse-grained, sandy, glauconitic; traces of sandstone, fine-grained, quartzose.

170-1400 ft - age: Lower Cretaceous (Albian).  
(A.P. Audretsch; *see* Appendix I, APA-1972).

## UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 275 m (901 ft) below sea-level.  
Thickness: 18 m (60 ft).

1356-1416

(Poor samples). Sandstone, pale buff, fine-grained, poorly sorted, quartzose, in part silty; porosity partly blocked by kaolin.

(1403 ft - top M4 sandstone, Lutchman, 1977).

## UPPER DEVONIAN

Imperial Formation

Top at 293 m (961 ft) below sea-level.  
Thickness: >358 m (>1176 ft).

1416-2592

Shale, very dark grey, in part silty; 1400-2592 ft - age: probably Strunian (A.P. Audretsch; *see* Appendix I, APA-1972).

2592

Total depth: 790 m.

86. K-68

Log of Amoco Carcajou K-68.

Location: 65°37'42"N., 128°12'23"W.

Elevation of Kelly Bushing: 219 m (717 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

DEVONIAN

Horn River Group

Hare Indian Formation

Top at bedrock, 219 m (717 ft) above sea-level.  
Thickness: 14 m (45 ft).

Bluefish Member.

0-45

(Cavings in 50-60 ft). Shale, dark brown-grey  
to black, non-calcareous.

Devonian carbonates assemblage

Thickness: >149 m (>490 ft).

Hume Formation

Top at 205 m (672 ft) above sea-level.  
Thickness: 85 m (280 ft).

45-230

Limestone, brown, buff, grey, white, fossiliferous;  
some shale, brown-grey, silty, calcareous (much  
shale at 70-80 ft); some chert, buff, pale grey.

230-325

Limestone and shale: limestone, brown, buff,  
grey, fossiliferous, in part argillaceous and  
silty; shale, grey, calcareous, micromicaceous.

Landry Formation

Top at 119 m (392 ft) above sea-level.  
Thickness: 14 m (45 ft).

325-370

(Poor samples). Limestone, brown, dark brown,  
buff, aphanitic to microcrystalline.

Borehole footage

Lithology

Arnica Formation

Top at 103 m (337 ft) above sea-level.  
Thickness: >50 m (>165 ft).

370-535

Dolomite, brown, dark brown, micro- to finely crystalline, sucrosic, with some intercrystalline porosity; at the top, oil staining; near the base, dolomite is microcrystalline.

FAULT.

Devonian carbonate assemblage

Thickness: 341 m (1119 ft).

Ihume Formation

Top at 55 m (182 ft) above sea-level.  
Thickness: 45 m (149 ft).

535-618

Limestone, brown, dark brown, buff, white, fossiliferous, fractured along with coarsely crystalline calcite; some shale, brown-grey, calcareous; some shale, grey, very micaceous.

618-684

Limestone and shale: limestone, buff, brown, grey, white, microcrystalline, in part "chalky", in part argillaceous and silty; shale, grey, calcareous, micromicaceous.

Landry Formation

Top at 10 m (33 ft) above sea-level.  
Thickness: 11 m (36 ft).

684-720

Limestone, brown, dark brown, white, microcrystalline, in part dolomitic, in part argillaceous; slight porosity.

Arnica Formation

Top at 1 m (3 ft) below sea-level.  
Thickness: 52 m (169 ft).

Borehole footage

Lithology

720-889

Dolomite, brown, dark brown, micro- to very finely crystalline, sucrosic, with some intercrystalline porosity; near the base, dolomite is microcrystalline.

Fort Norman Formation

Top at 52 m (172 ft) below sea-level.  
Thickness: 233 m (765 ft).

889-1638

Anhydrite, buff, pale buff, pale grey; some dolomite, buff, brown, microcrystalline.

1638-1654

Dolomite, grey, pale grey, brown, microcrystalline, in part argillaceous; some shale, grey, dark grey, dolomitic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Mount Kindle Formation

Top at 286 m (937 ft) below sea-level.  
Thickness: 115 m (378 ft).

1654-2032

Dolomite, mainly buff, microcrystalline with some very finely to finely crystalline; traces of shale, grey-green, pyritic.

Franklin Mountain Formation

Top at 40 m (1315 ft) below sea-level.  
Thickness: >153 m (>501 ft).

2032-2070

Dolomite, shale and sandstone: dolomite, buff, some pale grey, traces of pink, micro- to medium crystalline; shale, green-grey to olive-green and pale green, in part micropyrritic; sandstone, fine- to coarse-grained, very poorly sorted, quartzose, in part with dolomitic cement grading to sandy dolomite, and in part with green shale intergranular spaces.

Cherty member, thickness: >141 m (>463 ft).

Borehole footage

Lithology

2070-2533

Dolomite: at the top, creamy white, pink and red, grading downward through creamy white, pale buff and traces of pink, to pale buff, buff and some pale grey; variably very finely to medium and some coarsely crystalline; chert, white, pale buff, especially abundant at 2150-2170 and 2370-2400 ft; some clear quartz; some shale, green pale green, waxy.

FAULT.

DEVONIAN

Fort Norman Formation

Top at 554 m (1816 ft) below sea-level.  
Thickness: 18 m (59 ft).

2533-2592

Anhydrite, buff, pale buff; traces of shale green.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Mount Kindle Formation

Top at 572 m (1875 ft) below sea-level.

2592-2676

Dolomite, brown, dark brown, micro- to very finely crystalline, intensely fractured with calcite filling: some shale, green-grey, slickensided at the top.

FAULT.

DEVONIAN

Reconstructed thickness estimated at possibly less than 669 m (2195 ft).

Devonian carbonate assemblage

Thickness: 309 m (1015 ft).

Hume Formation

Top at 597 m (1959 ft) below sea-level.  
Thickness: 12 m (40 ft).

Borehole footage

Lithology

2676-2716

Limestone and shale: limestone, brown, grey-buff to grey, fractured; some black slickensides; some sparry calcite; shale, grey, calcareous, micromicaceous.

Landry Formation

Top at 609 m (1999 ft) below sea-level.  
Thickness: 12 m (39 ft).

2716-2755

Limestone, brown and white, micrograined, in part "chalky", fractured; some shale, black, slickensided.

Arnica Formation

Top at 621 m (2038 ft) below sea-level.  
Thickness: 54 m (177 ft).

2755-2932

Dolomite, brown, dark brown, micro- to very finely crystalline; some calcite-filled fractures.

Fort Norman Formation

Top at 675 m (2215 ft) below sea-level.  
Thickness: 231 m (759 ft).

2932-3691

Anhydrite, buff, pale buff to pale grey; some dolomite, brown, microcrystalline.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 730 m (2395 ft).

Mount Kindle Formation

Top at 906 m (2974 ft) below sea-level.  
Thickness: 133 m (435 ft).

3691-4126

Dolomite, brown, buff, pale buff, micro-, very finely and finely crystalline; some shale, grey, pale grey, pale green, waxy.



Borehole footage

Lithology

Franklin Mountain Formation

Top at 1039 m (3409 ft) below sea-level.  
Thickness: >119 m (>389 ft).

4126-4150

Dolomite, shale and sandstone: dolomite, buff, white, pink, grey, micro-, finely and coarsely crystalline; trace of chert, white; some dolomite, pale grey, aphanitic; shale, green-grey, pale grey-green, trace of bright green; sandstone, fine- to coarse-grained, very poorly sorted, quartzose, in part quartzitic; some green shale filling intercrystalline and intergranular spaces.

Cherty member, thickness: >11 m (>365 ft).

4150-4515

Dolomite, mainly creamy white to pale buff with pink and red, at the base pale buff with some pale grey, variably very finely to coarsely crystalline; much chert, white, pale buff, especially at 4230-4320 and 4390-4490 ft; some clear quartz; some shale, pale green, pale grey, waxy.

4515

Total depth: 1376 m.

87. K-76

Log of Shell Peel River Y.T. K-76.

Location: 66°25'35"N., 134°14'08"W.

Elevation of Kelly Bushing: 77 m (251 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 442 m (1449 ft).

Basal beds (Lower Cretaceous).

1428-1479

(Below shale) Siltstone, dark brown-grey, argillaceous, micromicaceous, in part sandy grading to sandstone, very poorly sorted, fine- and medium-grained, silty; some pyrite and traces of glauconite; some sand, coarse and very coarse, sub-rounded, quartz; 1382, 1448, 1472 ft - age: Early Cretaceous (with reworked Tournaisian and "Strunian spores") (D.C. McGregor, in Norford et al., 1970, p. 8-9).

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 374 m (1228 ft) below sea-level.

Thickness: >936 m (>3071 ft).

(Sandstone markers after Lutchman, 1977).

1479-2046

Shale, dark brown-grey to black, in part silty, micromicaceous; traces of siltstone, quartzitic; 1517 and 1682 ft - age: Tournaisian spore assemblage but probably reworked (D.C. McGregor, ibid., p. 9).

(M7 sandstone, "delta plain facies", implied).

2046-2366

Sandstone, shale and siltstone: sandstone, quartzitic and some orthoquartzite; shale, dark brown-grey to black, in part very silty, micromicaceous, grading to siltstone, argillaceous; some siltstone, quartzitic.

Borehole footage

Lithology

2366-3018	Shale, dark brown-grey to black, in part very silty, micromicaceous; 2462.5 ft - age: Jurassic or Early Cretaceous (with abundant reworked Tournaisian spores) (D.C. McGregor <i>ibid.</i> , p. 9).  (M6 sandstone, "delta plain facies").
3018-3132	Siltstone and sandstone, quartzitic; some shale, as above.
3132-3382	Shale, dark brown-grey to black, in part very silty, grading to argillaceous siltstone.  (M5 sandstone, "delta plain facies").
3382-3527	Sandstone, quartzitic and orthoquartzite; shale, as above; some siltstone, quartzitic.
3527-3640	Shale, dark brown-grey to black, in part silty.  (M4 sandstone, "delta front facies", implied).
3640-4240	Sandstone and shale: sandstone, fine- or medium-grained, poorly sorted, mainly quartzose, kaolinitic with some porosity; sandstone, coarse-grained, very poorly sorted, chert/quartz, in part quartzitic grading to orthoquartzite; shale, very dark grey to black, in part silty, micromicaceous.
4240-4550	Shale, as above; traces of thinly interbedded siltstone, quartzitic.
4550	Total depth: 1387 m.

88. L-01

Log of Shell Peel River Y.T. L-01.

Location: 66°30'38"N., 134°46'28"W.

Elevation of Kelly Bushing: 395 m (1295 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 668 m (2190 ft).

Basal beds (Lower Cretaceous?).

2216-2240

(Below siltstone and shale). Sandstone, fine-grained, quartzose, glauconitic; traces of sand, coarse, sub-rounded, quartz; probably interbedded siltstone.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 288 m (945 ft) below sea-level.

Thickness: 1103 m (3619 ft).

(Sandstone markers after Lutchman, 1977).

2240-3028

Siltstone and shale: siltstone, grey-brown to dark grey, coarse-grained and fine-grained, in part argillaceous; shale, dark brown-grey to black; shale increases downward with traces only of siltstone in the lower part.

(M7 sandstone, "delta plain facies").

3028-3306

Sandstone and shale: sandstone, pale grey, fine- to coarse-grained, quartz/chert, conglomeratic, in part quartzitic, slightly kaolinitic; shale, dark brown-grey to black, splintery.

3306-3722

Shale, dark brown-grey to black, splintery, in part silty.

(M6 sandstone, "delta plain facies").

3722-3888

Shale, as above, with some beds of siltstone and sandstone, quartzitic.

<u>Borehole footage</u>	<u>Lithology</u>
3888-4267	Shale, as above; some interbedded siltstone. (M5 sandstone, "delta plain facies").
4267-4320	Sandstone and siltstone, quartzitic; some interbedded, shale.
4320-4420	Shale, as above, with thinly interbedded siltstone, quartzitic. (M4 sandstone, "delta plain facies").
4420-4700	Sandstone, pale grey, coarse-grained, very poorly sorted, in part conglomeratic, very kaolinitic, mainly quartzose with rare chert fragments; in the lower part, interbedded shale, black.
4700-4757	Shale, black, splintery, in part silty. (M3 sandstone, "prodelta facies").
4757-4794	Sandstone, grey-buff, fine- to coarse-grained, poorly sorted, quartz/chert, in part quartzitic, grading to orthoquartzite; some interbedded shale.
4794-4976	Shale, very dark grey to black, splintery, in part silty; trace sandstone. (M2 sandstone, "delta fringe facies").
4976-5330	Sandstone, grey-buff, fine- to coarse-grained, poorly sorted, quartz/chert, in part quartzitic, some shale, black.
5330-5698	Shale, very dark grey to black, splintery to flaky, in part silty.
5698-5740	Sandstone, very coarse-grained to conglomeratic (angular chert) in fine-grained very poorly sorted matrix, in part quartzitic.
5740-5859	Siltstone and shale: siltstone, grey-brown, in part coarse-grained with rare angular coarse sand grains of chert, in part argillaceous; shale, very dark grey to black, splintery.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at 1391 m (4564 ft).

Thickness: >49 m (>161 ft).

5859-6020

Shale, grey to dark grey, micromicaceous, in part silty; some siltstone, brown-grey, in part argillaceous.

6020

Total depth: 1835 m.

89. L-09

Log of Mobil Hume River L-09.

Location: 65°28'31"N., 129°31'32"W.

Elevation of Kelly Bushing: 325 m (1067 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Note: deviated borehole through strata dipping steeply north;  
true vertical depth (TVD) calculated from deviation  
record in Well History Report: rock unit thickness  
estimated using data from both deviation record and  
directional log.

Bore hole  
footage

TVD (ft)

Lithology

MESOZOIC

Apparent vertical thickness: 620 m (2035 ft).  
Estimated thickness: 3007 m (1000 ft or  
less).

Basal beds (Lower Cretaceous?).

2001-2041

-2035

(Below shale). Sandstone, clear, fine-  
grained and coarse-grained, very poorly  
sorted, quartzose, in part glauconitic.

UPPER DEVONIAN

Imperial Formation

Top at 295 m (968 ft) below sea-level.  
Apparent thickness: 607 m (1991 ft).  
Estimated thickness: >305 m (>1000 ft).

2041-4153

2035-4026

Siltstone, sandstone and shale: siltstone,  
pale grey, grey, dark grey; in part  
coarse-grained, grading to sandstone,  
very fine-grained, silty; in part  
argillaceous and micaceous, grading to  
shale, dark grey, silty, micromicaceous.

DEVONIAN

Horn River Group

Apparent thickness: 261 m (855 ft).  
Estimated thickness: >>134 m (>>440 ft).

<u>Borehole footage</u>	<u>TVD (ft)</u>	<u>Lithology</u>
		<u>Canol Formation</u>
		Top at 902 m (2959 ft) below sea-level. Apparent thickness: 21 m (70 ft). Estimated thickness: >10 m (>35 ft).
4153-4232	4026-4096	Shale, black, in part silty, bituminous; some slickensides.
		<u>Allochthonous limestone unit,</u> Thickness: >8 m (>25 ft).
4232-4251 4251-4285	4096- -4141	(Two fold division by sonic log deter- mination). Shale, black, as above with some limey streaks.
		<u>Ramparts Formation</u>
		Top at 937 m (3074 ft) below sea-level. Apparent thickness: 16 m (51 ft). Estimated thickness: >9 m (>30 ft).
		<u>Reef member.</u>
4285-4343	4141-4192	Limestone, in part reefoid, in part argil- laceous and silty; very much calcite, white.
		<u>Hare Indian Formation</u>
		Top at 953 m (3125 ft) below sea-level. Apparent thickness: 210 m (689 ft). Estimated thickness: >107 m (>350 ft).
4343-5084	4192-4826	Shale, grey, brown-grey, grading downward to dark brown-grey, variably calcareous, micromicaceous; slickensides.
		<u>Bluefish Member</u> , thickness: (apparent) 17 m (55 ft).
5084-5148	4826-4881	Shale, black, very slightly calcareous; at the base, some limestone, white and black, "chalky", argillaceous, bitu- minous.



<u>Borehole footage</u>	<u>TVD (ft)</u>	<u>Lithology</u>
		<u>Devonian Carbonate assemblage</u>
		<u>Hume Formation</u>
		Top at 1163 m (3814 ft) below sea-level. Apparent thickness: 369 m (1211 ft). Estimated thickness: >>198 m (>>650 ft).
5148-6538	4881-6092	Limestone, brown, grey, white, micro-grained and aphanitic, bioclastic, in part fossiliferous; shale, grey to dark brown-grey, calcareous, micromicaceous; much evidence of fracturing.
		<u>Landry Formation</u>
		Top at 1532 m (5025 ft) below sea-level. Apparent thickness: 282 m (925 ft).
6538-7529	6092-7017	Limestone, brown, dark brown, buff, aphanitic with some pelletoid.
		<u>Arnica Formation</u>
		Top at 1814 m (5950 ft). Apparent thickness: >306 m (>1005 ft).
7529-8550	7017-8022	Dolomite, in the upper part, brown, buff, some grey, micro- to finely crystalline, grading downward to brown, dark brown, buff, micro- to finely crystalline, in part microsugrosic.
8550	8022	Total depth: 2606 m (TVD 2445 m).

90. L-19

Log of Shell Peel River Y.T. L-19.

Location: 66°48'39"N., 135°18'24"W.

Elevation of Kelly Bushing: 95 m (312 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at bedrock, 897 m (2927 ft) above sea-level.  
Thickness: 1039 m (3408 ft).

(Sandstone markers after Lutchman, 1977).

207(S)-160(S)

Sandstone, grey, fine-, medium- and coarse-grained,  
poorly sorted, quartz/chert; some shale, grey,  
flaky, and black.

160(S)-202

Shale, black, micromicaceous, in part silty;  
traces of coal.

(M7 sandstone, "alluvial plain facies").

202-458

Conglomerate and sandstone: conglomerate, chert,  
grey, white, buff, yellow and rare green; sand-  
stone, pale grey, in part fine-grained, poorly  
sorted and quartzitic, in part very poorly sorted,  
conglomeratic (chert), in part quartzitic.

458-1000

Sandstone, as above, and interbedded shale, dark  
grey and grey, micromicaceous, in part silty;  
670 ft - age: probably Late Devonian (Strunian,  
Tn1a, earliest Tournaisian). 696 ft - age:  
probably Late Devonian, Late Famennian or  
"Strunian"; 750, 900 ft - age: Famennian, possibly  
late Famennian (D.C. McGregor, in Norford et al.,  
1970, p. 4-5.)

1000-1174

Shale, dark grey and grey, micromicaceous, in part  
silty.

(M6 sandstone, "delta plain facies").

1174-1334

Interbedded shale, as above, and sandstone, pale  
grey, fine- or medium-grained, poorly sorted, in  
part quartzitic; 1200 ft - age: Late Devonian,  
Famennian (D.C. McGregor, ibid., p. 5).

Borehole footage

Lithology

1334-1555

Shale, dark grey and grey, micromicaceous, in part silty; 1500 ft - age: Late Devonian, Famennian (D.C. McGregor, *ibid.*, p. 6).

(M5 sandstone, "interdistributary bay facies").

1555-1732

Shale, as above with interbedded sandstone, poorly sorted, in part quartzitic; 1600 ft - age: late Devonian, possibly Famennian (D.C. McGregor, *ibid.*, p. 6). 1705 ft - age: late Devonian, (D.C. McGregor, *ibid.*, p. 6).

(M4 sandstone, "delta plain facies").

1732-2230

Sandstone, siltstone and shale: sandstone, pale grey, very poorly sorted, conglomeratic (chert), in part quartzitic; siltstone, pale grey, coarse-grained, and grey, fine-grained, micaceous; shale, grey, micromicaceous, in part silty; 1920 ft - age: Late Devonian, probably Famennian; 2020 ft - age: Late Devonian, probably early Famennian (D.C. McGregor, *ibid.*, p. 6).

2230-2448

Siltstone, coarse-grained and fine-grained, micaceous, and shale, as above.

(M3 sandstone, "delta front facies").

2448-2616

Sandstone, conglomerate and shale: sandstone, very poorly sorted, conglomeratic (chert), in part quartzitic; conglomerate, chert, white, some yellow and pale green; shale, grey, silty; 2500 ft - age: Late Devonian, late Frasnian or early Famennian (D.C. McGregor, *ibid.*, p. 6).

2616-2776

Shale, grey, micromicaceous, in part silty.

(M2 sandstone, "delta front facies").

2776-3110

Conglomerate and sandstone: conglomerate, chert, white and some grey, buff and rare green; sandstone, pale grey, very poorly sorted, conglomeratic, in part quartzitic, in part kaolinitic; some shale, grey and dark grey, micromicaceous; 2878 ft - age: Late Devonian, tentatively late Frasnian (D.C. McGregor, *ibid.*, p. 6).

3110-3222

Shale, grey and dark grey, flaky and splintery, micromicaceous.

(M1 sandstone, "delta front facies").

Borehole footage

Lithology

3222-3345

Conglomerate and sandstone, as above.

3345-3428

Interbedded sandstone and shale.

UPPER DEVONIAN

Imperial Formation

Top at 950 m (3116 ft) below sea-level.

Thickness: >936 m (>3072 ft).

3428-6500

Shale, very dark grey, in part silty; interbedded siltstone, brown-grey, in part argillaceous; some siltstone, grey, coarse-grained; 4035 ft - age: Late Devonian, Frasnian; 5000 ft - age: Late Devonian, late Frasnian or Famennian; 5500 ft - age: Middle Devonian or early Late Devonian (D.C. McGregor, *ibid.*, p. 6-7).

6500

Total depth: 1981 m.

91. L-24

Log of Triad Carcajou L-24.

Location: 65°33'34"N., 128°50'20"W.

Elevation of Kelly Bushing: 113 m (370 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 694 m (2278 ft).

Basal beds (Lower Cretaceous?).

2284-2288

(Below shale). Sand, medium and coarse, sub-  
rounded, quartz.

UPPER DEVONIAN

Imperial Formation

Top at 585 m (1918 ft) below sea-level.

Thickness: 229 m (752 ft).

2288-3040

Siltstone, sandstone and shale: siltstone, grey,  
brown-grey, micromicaceous; in part coarse-  
grained, sandy, grading to sandstone, pale  
buff-grey, very fine-grained silty, in part  
argillaceous, grading to shale, dark grey,  
silty, micromicaceous.

DEVONIAN

Thickness: 852 m (2794 ft).

Horn River Group

Thickness: 457 m (1498 ft).

Canol Formation

Top at 814 m (2670 ft) below sea-level.

Thickness: 2 m (6 ft).

3040-3046

Shale, black, bituminous with some pyrite.

Borehole footage

Lithology

Ramparts Formation

Top at 816 m (2676 ft) below sea-level.  
Thickness: 393 m (1291 ft).

Reef member, thickness: 236 m (774 ft).

3046-3820

Limestone, dark brown, microcrystalline, dense,  
grading downward to buff, brown, white, reefoid.

Platform member, thickness: 34 m (113 ft).

Carcajou marker, 10 m (32 ft).

3820-3852

Shale and limestone: shale, black, micromicaceous,  
variably calcareous, grading to limestone, dark  
brown-grey, argillaceous; limestone, brown and  
white, bioclastic and fragmental.

3852-3933

Limestone, buff, brown, white, grey, bioclastic  
and fragmental.

Siltstone lentil, thickness: 123 m (404 ft).

3933-4337

Siltstone, pale grey to buff-grey, very calcareous,  
micaceous, grading to limestone, buff and white,  
silty; increasing amounts with depth of inter-  
bedded shale, brown-grey, calcareous, very silty,  
micromicaceous.

Hare Indian Formation

Top at 1209 m (3967 ft) below sea-level.  
Thickness: 61 m (201 ft).

4337-4496

Shale, brown-grey, calcareous, silty, micromicaceous.

Bluefish Member, thickness: 13 m (42 ft).

4496-4538

Shale, black, non-calcareous; at the base, very  
calcareous.

Devonian carbonate assemblage

Thickness: 395 m (1296 ft).

Borehole footage

Lithology

Hume Formation

Top at 1270 m (4168 ft) below sea-level.  
Thickness: 98 m (323 ft).

4538-4696 Limestone, grey-buff to dark brown and white, bioclastic, in part very argillaceous and silty; at 4550-4590 ft, much shale, grey to brown-grey, calcareous, silty, micromicaceous; in the lower part, limestone is brown, buff and white, bioclastic.

4696-4861 Limestone and shale: limestone, brown, white, grey, bioclastic, fossiliferous, in part silty and argillaceous; shale, grey to dark brown-grey, calcareous, in part silty, micromicaceous.

Landry Formation

Top at 1369 m (4491 ft) below sea-level.  
Thickness: 25 m (81 ft).

4861-4942 Limestone, brown, dark brown and white, at the top, pelletoid, grading downward to brown, dark brown, aphanitic; in the lower part, some dolomite, brown, very finely crystalline.

Arnica Formation

Top at 1394 m (4572 ft) below sea-level.  
Thickness: 67 m (220 ft).

4942-5162 Dolomite, buff, brown, very finely and finely crystalline, with some intercrystalline and pinpoint porosity.

Fort Norman Formation

Top at 1461 m (4792 ft) below sea-level.  
Thickness: 205 m (672 ft).

5162-5770 Anhydrite, buff, grey, brown; some dolomite, grey, mostly finely crystalline.

5770-5834 Dolomite, chert and shale: dolomite, grey to buff and white, micro- to finely and medium crystalline; some chert, buff, mottled, in part dolomitic; shale, grey, grey-green, in part micro-pyritic and pyritic, in part very dolomitic, in part sandy.

Borehole footage

Lithology

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 788 m (2586 ft).

Mount Kindle Formation

Top at 1665 m (5464 ft) below sea-level.  
Thickness: 173 m (566 ft).

5834-6400

Dolomite, buff, grey-buff, brown, very finely and finely crystalline, with some intercrystalline porosity; some clear quartz crystals.

Franklin Mountain Formation

Top at 1838 m (6030 ft) below sea-level.  
Thickness: >7 m (>22 ft).

6400-6422

Dolomite, creamy white, pale buff, pale grey, microcrystalline, in part very finely to finely crystalline, in part sandy (grains fine to coarse, rounded, quartz).

6422

Total depth: 1957 m.



92. L-26

Log of Candel Grandview L-26.

Location: 66°35'32"N., 130°20'21"W.

Elevation of Kelly Bushing: 165 m (541 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log (1000 to 6692 ft only).

Borehole footage

Lithology

UPPER DEVONIAN?

Imperial Formation?

Top at bedrock, 156 m (511 ft) above sea-level.  
Thickness: 143 m (470 ft).

307-130(S)

Shale, dark grey; siltstone, grey; some sandstone,  
pale green-grey, very fine-grained, silty; 40-  
50 ft - age: Paleozoic, Devonian (Brideaux,  
W.W., in Cook and Aitken, 1975).

Note: may be Lower Cretaceous; in similar strati-  
graphic situation 80 kilometres north of  
L-26. Devonian palynomorphs occur along with  
foraminifera in Lower Cretaceous shale over-  
lying Imperial Formation - Aitken and Cook,  
1975, pp. 25,37,41, G.S.C. loc. 5549).

130(S)-500(S)

Shale, dark grey, micromicaceous.

500 ft - age: Paleozoic, Devonian (Brideaux, W.W.,  
in Cook and Aitken, 1975 and not above).

DEVONIAN

Thickness: 749 m (2456 ft).

Horn River Group

Thickness: 262 m (858 ft).

Canol Formation

Top at 12 m (41 ft) above sea-level.  
Thickness: 27 m (90 ft).

500(S)-590(S)

Shale, brown-black, bituminous; some pyrite.

Ramparts Formation

Top at 15 m (49 ft) below sea-level.  
Thickness: 67 m (220 ft).

Borehole footage

Lithology

Siltstone lentil (probably includes  
Sandy member)

590(S)-810(S)

Siltstone, limestone and shale: siltstone, pale grey, calcareous; limestone, pale buff, pale grey, micrograined, argillaceous and silty; shale, pale grey, in part calcareous, micromicaceous.

Hare Indian Formation

Top at 82 m (269 ft) below sea-level.  
Thickness: 167 m (548 ft).

810(S)-1328

Shale, pale grey, slightly calcareous, grading downward progressively through brown-grey and dark brown-grey to black, non-calcareous.

Bluefish Member, thickness: 9 m (30 ft).

1328-1358

Shale, black, calcareous; limestone, black, brown, speckled white, very argillaceous, hard bioclastic.

Devonian carbonate assemblage

Thickness: 487 m (1598 ft).

Hume Formation

Top at 249 m (817 ft) below sea-level.  
Thickness: 92 m (302 ft).

1358-1390

Limestone, brown, micrograined, bioclastic.

1390-1470

Limestone, as above, silty and argillaceous, fossiliferous, with shale, pale grey, calcareous, micromicaceous.

1470-1590

Shale and limestone: shale, as above; limestone, pale grey-buff, micrograined.

1590-1660

Limestone, pale buff, pale grey, white, bioclastic, in part silty and argillaceous; interbedded shale, as above.

Borehole footage

Lithology

Landry Formation

Top at 341 m (1119 ft) below sea-level.  
Thickness: 225 m (738 ft).

- 1660-2220 Limestone, brown, buff, micrograined to aphanitic,  
in part pelletoid.
- 2220-2250 Dolomite, buff, microcrystalline.
- 2250-2398 Limestone, pale buff, aphanitic.

Arnica Formation

Top at 566 m (1857 ft) below sea-level.  
Thickness: 165 m (542 ft).

- 2398-2940 Dolomite, buff, brown, dark brown, microcrystalline,  
in part sucrosic.

Tatsieta Formation

Top at 731 m (2399 ft) below sea-level.  
Thickness: 5 m (16 ft).

- 2940-2956 Limestone, buff, micrograined; limestone, buff,  
very argillaceous.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness: 1103 m (3620 ft).

Peel Formation

Top at 736 m (2415 ft) below sea-level.  
Thickness: 110 m (360 ft).

- 2956-3100 Dolomite, pale grey, pale buff, microsucrosic;  
some shale, grey and dark grey; traces of shale,  
green, dark green, micropyrritic.
- 3100-3316 Dolomite, buff, brown, pale buff, pale grey,  
microcrystalline, some finely to medium  
crystalline.

Borehole footage

Lithology

Mount Kindle Formation

Top at 846 m (2775 ft) below sea-level.  
Thickness: 220 m (721 ft).

3316-4037

Dolomite, buff, brown, very finely to finely crystalline; in the upper 30 to 45 m, much white calcite and crystalline dolomite; in lower part, dolomite is in part sucrosic.

Franklin Mountain Formation

Top at 1066 m (3496 ft) below sea-level.  
Thickness: 774 m (2539 ft).

4037-4174

Dolomite, creamy white to pale buff and buff, micro- to medium and coarsely crystalline; at base, some intercrystalline glauconite.

Cherty member, thickness: 246 m (806 ft).

4174-4980

Dolomite, creamy white, some buff and brown, very finely to medium and coarsely crystalline; chert, white, pale buff, buff, especially abundant at 4250-4280 ft.

4980-6380

Dolomite, buff, brown, pale buff, micro- to very finely crystalline, some finely crystalline, grading downward to pale grey microcrystalline; scattered pyrite.

6380-6576

Dolomite, pale buff, buff, pale grey, grey-buff, microcrystalline and aphanitic; some interbedded shale, grey dolomitic; at 6430-6465 ft, dolomite, buff, microsucrosic, porous.

CAMBRIAN

Clastics-evaporites assemblage

Saline River Formation

Top at 1839 m (6035 ft) below sea-level.  
Thickness: 291 m (954 ft).

Upper clastic member.

6576-6750(S)

Shale, brick-red, green, olive-green, purple, in part dolomitic; anhydrite and dolomite, pale buff, pink; in the lower part, some siltstone, pale grey, and some sandstone, white, very fine-grained.

Borehole footageLithology

Salt member, thickness: 238 m (780 ft).

6750(S)-7530(S)

Halite.

PROTEROZOIC

Top at 2130 m (6989 ft) below sea-level.

Dolomite unit, thickness: >101 m (>330 ft).

7530(S)-7640(S)

Dolomite, pale buff, coarsely crystalline; some shale, black, splintery to brittle.

7640(S)-7860

Dolomite, pink, some blood-red streaks, buff, grey, white, microcrystalline to aphanitic, possibly in part anhydritic; some chert, pale grey, white, replacing oolite.

7860

Total depth: 2396 m.

93. L-47

Log of Decalta Rond Lake No. 4.

Location: 67°06'30"N., 128°24'00"W.

Elevation of Kelly Bushing: 271 m (890 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to electric log.

Borehole footage

Lithology

MESOZOIC (Cretaceous)

Thickness: 4 m (12 ft).

70-82

Sand, fine to very coarse, sub-angular to rounded,  
quartz.

DEVONIAN

Thickness: >139 m (>455 ft).

Horn River Group

Hare Indian Formation

Top at 246 m (808 ft) above sea-level.

Thickness: 135 m (442 ft).

82-493

Shale, grey, pale grey, grading downward to grey,  
brown-grey, variably calcareous, micromicaceous.

Bluefish Member, thickness: 9 m (31 ft).

493-524

Shale, dark brown-grey, non-calcareous.

Devonian carbonates assemblage

Hume Formation

Top at 112 m (366 ft) above sea-level.

Thickness: >4 m (>13 ft).

524-537

Samples missing. (R) Limestone, argillaceous,  
fossiliferous, with interbedded shale, green.

537

Total depth: 164 m.

94. L-50

Log of I.O.E. Martin House L-50.

Location: 66°49'42"N., 133°24'03"W.

Elevation of Kelly Bushing: 88 m (289 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 82 m (270 ft).

Basal beds (Lower Cretaceous?).

330-350

(Below shale and glauconitic siltstone). Sandstone,  
pale grey, fine-grained, poorly sorted, quartzose,  
glauconitic.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 19 m (61 ft) below sea-level.

Thickness: 6 m (20 ft).

(M1 sandstone, "delta fringe facies", Lutchman, 1977).

350-370

Sandstone, pale buff, very fine-grained with some  
coarse grains, kaolinitic; some shale, brown, flaky.

UPPER DEVONIAN

Imperial Formation

Top at 25 m (81 ft) below sea-level.

Thickness: 1167 m (3828 ft).

370-4198

Shale, very dark grey, micromicaceous, in part silty;  
at 2500-2800 ft, some siltstone, pale grey, coarse-  
grained; in the lower part, some siltstone, grey  
brown, variably argillaceous.

DEVONIAN

Thickness: 752 m (2468 ft).

Borehole footage

Lithology

Horn River Formation

Top at 1191 m (3909 ft) below sea-level.  
Thickness: 82 m (270 ft).

4198-4468

Shale, black, bituminous; traces of pyrite.

4448

Top Bluefish Member, thickness: 6 m (20 ft).

Devonian carbonates assemblage

Thickness: 670 m (2198 ft).

Ihume Formation

Top at 1274 m (4179 ft) below sea-level.  
Thickness: 106 m (348 ft).

4468-4766

Limestone, buff, grey, brown, micrograined, in part argillaceous and silty, fossiliferous; some shale, grey, calcareous.

4766-4816

Shale, grey, calcareous, and limestone, argillaceous.

Landry Formation

Top at 1380 m (4527 ft) below sea-level.  
Thickness: 396 m (1304 ft).

4816-5533

Limestone, buff, brown, aphanitic, in part pelletal; in the lower part, some dolomite, brown, sucrosic.

5533-5642

Dolomite, brown, micro- and very finely crystalline, sucrosic, in part with good intercrystalline porosity.

5642-5734

Limestone, buff, aphanitic and micrograined; some limestone, white, "chalky"; some dolomite, sucrosic.

5734-5900

Dolomite, buff, brown, dark brown, microcrystalline, in part sucrosic; some limestone, brown, in part argillaceous.

5900-6120

Limestone, brown, micrograined, fossiliferous; some dolomite, as above.



Borehole footage

Lithology

Arnica Formation

Top at 1777 m (5831 ft) below sea-level.  
Thickness: 132 m (432 ft).

6120-6552

Dolomite, brown, buff, mainly microcrystalline and sucrosic.

Tatsieta Formation

Top at 1909 m (6263 ft) below sea-level.  
Thickness: 35 m (114 ft).

6552-6610

Limestone, brown, micrograined, and shale, black, brittle, grading downward to dolomite, creamy white, calcareous, microsucrosic, and limestone, buff, aphanitic.

6610-6666

Limestone, pale buff, aphanitic, and white, "chalky", some shale, pale grey-green.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1451 m (4759 ft).

Peel Formation

Top at 1944 m (6377 ft) below sea-level.  
Thickness: 253 m (829 ft).

6666-7495

Dolomite, pale grey, pale buff, microsucrosic, in part silty or argillaceous; some dolomite, pale grey, aphanitic, argillaceous.

Mount Kindle Formation

Top at 2196 m (7206 ft) below sea-level.  
Thickness: >123 m (>405 ft).

7495-7900

Dolomite, brown, dark brown, micro- and very finely crystalline, partly sucrosic; at 7870-7890 ft, some shale, brown-black, silty, dolomitic.

7900

Total depth: 2408 m.

95. L-61

Log of At. Manitou Lake L-61.

Location: 66°20'40"N., 128°58'00"W.

Elevation of Kelly Bushing: 132 m (432 ft).

Well log prepared by the writer, based on the drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 85 m (280 ft).

Basal beds (Cretaceous).

240(S)-330(S)

(Below sandstone). Conglomerate and sandstone:  
conglomerate, granules and pebbles, quartz  
and some siliceous reef material; sandstone,  
fine- to coarse-grained, very poorly sorted,  
quartzose, in part conglomeratic.

DEVONIAN

Thickness: 662 m (2172 ft).

Horn River Group

Ramparts Formation

Top at 31 m (102 ft) above sea-level.

Thickness: 227 (745 ft).

Reef member, thickness: 216 m (710 ft).

330(S)-510

Limestone, buff, brown, white, pale grey, reefoid  
with much silica replacement and chert.

510-550

Mostly cement.

550-1040

Limestone, creamy white, reef.

?Platform member, thickness: 11 m (35 ft).

1040-1075

Limestone, buff, microcrystalline and aphanitic.

Devonian carbonates assemblage

Thickness: 435 m (1427 ft).

Borehole footage

Lithology

Hume Formation

Top at 196 m (643 ft) below sea-level.  
Thickness: 108 m (353 ft).

- 1075-1140 Limestone, grey-brown, grey-buff, in part silty and argillaceous; some shale, brown-grey, calcareous.
- 1140-1260 Limestone, brown, buff, white, microcrystalline, with some shell fragments; grades downward to limestone, grey-buff to grey, in part argillaceous, and some shale, green-grey, calcareous, micromicaceous.
- 1260-1428 Limestone and shale: limestone, grey, buff, argillaceous, bioclastic; shale, grey, calcareous, micromicaceous; some sparry calcite.

Landry Formation

Top at 304 m (996 ft) below sea-level.  
Thickness: >190 m (>622 ft).

- 1428-1880 Limestone, brown, aphanitic with some pelletoid; some limestone, grey, argillaceous.
- 1880-1900 Dolomite, buff, finely crystalline.
- 1900-1970 Limestone, brown, buff, aphanitic to microcrystalline.
- 1970-2050 Limestone, buff, pale buff, microcrystalline to aphanitic.
- 2050- Samples missing.

Arnica Formation

Thickness: >94 m (>308 ft).

- 2320 Samples missing.
- 2320-2358 Dolomite, buff, brown, microcrystalline.

Fort Norman Formation  
(basal tongue)

Top at 587 m (1926 ft) below sea-level.  
Thickness: 44 m (144 ft).

Borehole footage

Lithology

2358-2502

Dolomite, pale buff, pale grey, microsugrosic with some finely and medium crystalline.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness: 889 m (2918 ft).

Mount Kindle Formation

Top at 631 m (2070 ft) below sea-level.  
Thickness: 182 m (596 ft).

2502-3098

Dolomite, buff to brown, at the top, microcrystalline, grading downward to very finely and finely crystalline.

Franklin Mountain Formation

Top at 813 m (2666 ft) below sea-level.  
Thickness: 708 m (2322 ft).

3098-3134

Dolomite, buff, pale buff-grey, finely and medium crystalline; some shale, pale grey, waxy, micropyrictic.

Cherty member, thickness: 259 m (850 ft).

3134-3220

Dolomite, creamy white, pale buff, pale grey, finely and medium crystalline, cherty, in part very sandy (fine and medium size grains of quartz); at the top, much chert, pale buff.

3220-3984

Dolomite, creamy white, pale buff, finely and medium crystalline, grading downward to buff, microcrystalline, and near the base with some finely to medium crystalline, some chert throughout, especially abundant at 3280-90 ft (replacing oolite) and at 3530-3560 ft.

3984-5190

Dolomite, buff, brown, pale buff, some pale grey, microcrystalline to very finely crystalline with, in the upper part, some finely to medium crystalline.

Borehole footage

Lithology

5190-5420

Dolomite, pale buff, buff, buff-grey, micro-crystalline, in part sucrosic; in the lower part, some interbedded shale, grey, dolomitic.

CAMBRIAN

Clastics-evaporites assemblage

Saline River Formation

Top at 1520 m (4988 ft) below sea-level.  
Thickness: >72 m (>237 ft).

Upper clastic member.

5420-5546

Shale, purple, brick-red, pale green, olive-green, brown; dolomite, buff, pale buff, grey, micro-crystalline; some anhydrite, pale buff, pink.

Salt member, thickness: >34 m (>111 ft).

5546-5657

Halite; some shale, pale green.

5657

Total depth: 1724 m.

96. M-05

Log of I.O.B. Nevejo M-05.

Location: 67°14'58"N., 134°01'45"W.

Elevation of Kelly Bushing: 74 m (244 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at bedrock, 32 m (104 ft) above sea-level.  
Thickness: 1580 m (5185 ft).

1407-5325

(Note: drift cavings in top samples contain some sandstone, medium- to coarse-grained, poorly sorted, quartz/chert, kaolinitic; possibly erosional debris from Tuttle Formation).

Sandstone, siltstone and shale: sandstone, grey and pale grey, fine-grained, poorly sorted, chert/quartz with some kaolin, silty; siltstone, grey, brown-grey, coarse-grained and fine-grained, argillaceous; shale, dark grey, silty, micromicaceous; near the base, shale, very dark grey to black.

DEVONIAN

Thickness: 693 m (2273 ft).

Horn River Group Formation

Top at 1549 m (5081 ft) below sea-level.  
Thickness: 73 m (240 ft).

5325-5565

Shale, black, bituminous; trace of pyrite.

5550

Top Bluefish Member, thickness: 5 m (15 ft).

Devonian carbonates assemblage

Thickness: 620 m (2033 ft).

Borehole footage

Lithology

Hume Formation

Top at 1622 m (5321 ft) below sea-level.  
Thickness: 96 m (315 ft).

5565-c. 5670

Limestone and shale: limestone, brown, grey, micritic, argillaceous and silty; shale, grey, slightly calcareous, micromicaceous.

c. 5670-5880

Limestone, brown, grey, white bioclastic, fossiliferous, in part silty and argillaceous; some shale, grey, silty, calcareous.

Landry Formation

Top at 1718 m (5636 ft) below sea-level.  
Thickness: 282 m (925 ft).

5880-6805

Limestone, brown, dark brown, buff, aphanitic and pelletoid; in the lower part, some dolomite, brown, buff, microcrystalline.

Arnica Formation

Top at 2000 m (6561 ft) below sea-level.  
Thickness: 229 m (750 ft).

6805-7555

Dolomite, brown, dark brown, buff, micro- to very finely crystalline, in part sucrosic with intercrystalline porosity.

Tatsieta Formation

Top at 2228 m (7311 ft) below sea-level.  
Thickness: 13 m (43 ft).

7555-7598

Limestone, dolomite, and shale: limestone, buff, aphanitic to microcrystalline, in part dolomitic; dolomite, pale buff-grey, microcrystalline; shale, pale grey, pale green-grey, micropyrritic.

CAMBRIAN LOWER DEVONIAN

Ronning Group

Thickness estimated at 1390 m (4560 ft).

Borehole footage

Lithology

Peel Formation

Top at 2241 m (7354 ft) below sea-level.  
Thickness: >63 m (>206 ft).

7598-7804

Dolomite, pale grey, pale buff, aphanitic to  
microcrystalline, in part microsugrosic.

7804

Total depth: 2379 m.



97. M-08

Log of W.M. Chance Y.T. No. 1.  
Location: 66°07'46"N., 137°31'27"W.  
Elevation of Kelly Bushing: 539 m (1769 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to gamma-ray-neutron log.

Borehole footage

Lithology

MESOZOIC

Thickness: 1230 m (4036 ft).

Basal beds (Lower Cretaceous?).

3810-4036

(Below shale). Siltstone, grey, argillaceous, micaceous, glauconitic; some shale, dark brown-grey, micromicaceous, at the base, highly glauconitic, very finely sandy and pyritic.

UPPER PALEOZOIC

Thickness: >1406 m (>4612 ft).

Hart River Formation

Top at 691 m (2267 ft) below sea-level.

Thickness: 811 m (2660 ft).

4036-4258

Limestone, chert and shale: limestone, brown, grey, white, bioclastic, argillaceous; chert, brown, grey, translucent, much of it of bioclastic origin; shale, dark grey, calcareous.

Chance Sandstone Member, (Type section, Martin, 1972).

4258-4850

Sandstone, grey, very poorly sorted, some fine-grained, some fine- to very coarse-grained and conglomeratic, much angular chert, porosity with bitumen; downward, the sandstone becomes increasingly calcareous; rare interbedded shale, very dark grey.

Borehole footage

Lithology

- 4850-c. 5200 Limestone and chert: limestone, grey, buff to white, micritic; chert, grey, grey-buff, smoky translucent; at the top some interbedded sandstone, pale grey, poorly sorted calcareous.
- c. 5200-6028 Limestone and chert: limestone, grey, brown, dark brown, grey-buff, white, in part argillaceous; chert, grey-brown, grey, pale grey; at the top some sandstone, coarse-grained, poorly sorted, calcareous.
- 6028-6072 Shale, very dark brown-grey, calcareous, grading to limestone, brown and white, argillaceous.
- 6072-c. 6100 Sandstone, pale grey, very poorly sorted, fine- to very coarse-grained; (angular chert), partly conglomeratic, calcareous.
- c. 6100-6322 Limestone and chert: limestone, buff, brown, white, grey-brown, in part argillaceous; chert, grey, pale grey, brown-grey.
- 6322-6527 Limestone, chert and shale: limestone, grey-brown, buff, grey-buff, argillaceous; chert, brown, buff, grey, pale grey; shale, very dark brown-grey, silty calcareous.
- 6527-6696 Limestone, chert and sandstone: limestone, grey-brown, argillaceous, siliceous; chert, grey-brown, at c. 6560-6590 ft, sandstone, grey, very poorly sorted, very fine- to very coarse-grained (angular chert, grey, black, white, buff, pale green), silty, calcareous, in part with argillaceous infill.

Ford Lake Shale

Top at 1502 m (4927 ft) below sea-level.  
Thickness: >595 m (>1952 ft).

- 6696-8648 Shale, at the top, black and flaky, grading downward to very dark grey and in part silty, rare sandstone, brown-grey, very fine-grained, silty, siliceous; at 7168-7175 ft, sandstone, grey, very poorly sorted, conglomeratic (chert pebbles).  
8500-8600 ft - age: Visean (M.S. Barss: see Appendix I, CRS-5-MSB-1969).
- 8648 Total depth: 2636 m.

98. M-55

Log of Inc. Blackfly Y.T. M-55.  
Location: 65°54'55"N., 140°25'55"W.  
Elevation of Kelly Bushing: 755 m (2477 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC (Triassic?)

Thickness: 466 m (1530 ft).

-1530(S)

Shale, grey, dark grey, variably calcareous, siliceous and silty; traces of limestone, siltstone and sandstone, very fine-grained.

UPPER PALEOZOIC

Thickness: >1603 m (>5260 ft).  
Estimated thickness: 2229 m (7312 ft).

Jungle Creek Formation

Top at 289 m (947 ft) above sea-level.  
Thickness: 719 m (2358 ft).

1530(S)-3082

Limestone, orthoquartzite and shale: limestone, grey, buff, brown, in part bioclastic and skeletal, in part sandy and siliceous grading to orthoquartzite, grey, in part calcareous; traces of limestone, aphanitic; shale, dark grey, siliceous, calcareous; much silica and calcite in fill.

3082-3888

Shale, brown-grey to black, in part siliceous, variably calcareous grading to limestone, argillaceous; some white calcite-filled veins, some pyrite and some chert.

Ettrain Formation

Top at 430 m (1411 ft) below sea-level.  
Thickness: 231 m (758 ft).

Borehole footage

Lithology

3888-4646

Limestone, in the upper part buff, pale buff, buff-grey, coarsely crystalline with traces of organic beds; some dolomite and some silica replacement; chert, grey, brown, smoky; limestone grades downward to buff, brown, dark brown, dark grey, in part medium grained, in part coarsely crystalline, in part bioclastic and skeletal, in part argillaceous grading to shale, black, calcareous, pyritic; some dolomite and some chert; near base, white silica in fill.

Blackie Formation

Top at 661 m (2169 ft) below sea-level.  
Thickness: 365 m (1196 ft).

4646-5842

Siltstone, shale and sandstone: siltstone, dark grey, calcareous and dolomitic, grading to silty limestone and silty dolomite; shale, black, silty, calcareous; sandstone, pale grey, very calcareous, grading to sandy, silty limestone; downward shale increases, sandstone decreases.

Ford Lake Shale

Top at 1026 m (3365 ft) below sea-level.  
Thickness: >289 m (>948 ft).  
Thickness estimated at 914 m (3000 ft).

5842-6790

Shale, dark grey and black, slightly siliceous, in part silty, dolomitic; traces of dolomite and limestone and white silica and pyrite; at 5950-5960 ft, much silica; white and clear.

6790

Total depth: 2070 m.

99. M-59

Log of Socony Blackie Y.T. M-59.

Location: 65°58'55"N., 137°11'11"W.

Elevation of Kelly Bushing: 562 m (1844 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 583 m (1912 ft).

0-1912

Shale, carbonaceous; siltstone, argillaceous;  
rare sandstone.

UPPER PALEOZOIC

Thickness: >1349 m (>4426 ft).

Jungle Creek Formation

Top at 21 m (68 ft) below sea-level.

Thickness: 309 m (1014 ft).

1912-2109

Siltstone, at the top dark grey-brown, calcareous,  
argillaceous, grading downward to grey-brown,  
calcareous, coarse-grained, very finely sandy.  
1961-1974 ft - age: Early Permian, Sakmarian  
(J.B. Waterhouse, *see* Appendix I, 716-928-2011-  
JBW-1970).  
1960-1978 ft - age: Permian (M.S. Barss, *in*  
Norford et al., 1971, p. 8).

2109-2115

Chert pebbles and granules in highly glauconitic,  
pyritic, sandy and argillaceous matrix.

2115-2926

Sandstone and conglomerate: sandstone, pale grey,  
poorly sorted, fine-grained with coarse grains  
of chert and some kaolin; conglomerate; chert,  
grey, pale grey, buff, white, some orange; some  
siltstone and shale.  
2173 ft - age: Early Permian, Sakmarian  
(J.B. Waterhouse, *ibid.*)  
2117-2176 ft - age: Permian (M.S. Barss, *ibid.*, p. 8).

Borehole footage

Lithology

Blackie Formation TYPE SECTION

Top at 330 m (1082 ft) below sea-level.

Thickness: 682 m (2238 ft).

- 2926-4200 Siltstone and shale: siltstone, dark brown-grey, argillaceous, slightly calcareous or dolomitic; shale, very dark brown-grey, in part silty; some thin beds of limestone, argillaceous.  
2963-3910 ft - age: Permian (M.S. Barss, in Norford et al., 1971, p. 9).
- 4200-4309 Shale, black, silty; rare dolomite.
- 4309-5164 Shale, black, bituminous, in part silty or sandy; rare limestone, argillaceous.

Hart River Formation

Top at 1012 m (3320 ft) below sea-level.

Thickness: 332 m (1088 ft).

- 5164-5932 Shale, limestone and sandstone: shale, black, non-calcareous; shale, dark brown-grey, calcareous; limestone, grey-brown, argillaceous.
- Chance Sandstone Member.
- At 5540-5570 ft, sandstone, pale grey, very poorly sorted, fine- to very coarse-grained, sub-rounded to sub-angular, chert, very calcareous; at 5605-5620 ft, sandstone, pale brown, very poorly sorted, fine- to coarse-grained, chert, very calcareous and some siliceous cement.
- 5932-6130 Limestone and chert: limestone, grey-brown, pale buff, micrograined, in part argillaceous; chert, pale grey with brown streaks, pale brown, dark brown; some sandstone, poorly sorted, chert, calcareous.
- 6130-6252 Sandstone, limestone, chert and shale: sandstone, grey, very poorly sorted, fine- to very coarse-grained, silty, siliceous; some orthoquartzite; limestone, brown and white, micrograined and fine-grained, argillaceous; chert, smoky translucent, pale grey; shale, black, bituminous.

Borehole footage

Lithology

Ford Lake Shale

Top at 1344 m (4403 ft) below sea-level.  
Thickness: >26 m (>86 ft).

6252-6338

Samples missing. (R) Shale, black, non-calcareous, fossiliferous. 6319-6336 ft - age: Chesteran, or late Viséan (*see* Appendix I, 716-928-2011-JBW-1970). 6336 ft - age: Viséan (M.S. Barss, *in* Norford et al., 1971)

6338

Total depth: 1931 m.

100. M-69

Log of Shell Peel River Y.T. M-69.  
Location: 66°08'56"N., 133°58'04"W.  
Elevation of Kelly Bushing: 292 m (957 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 933 m (3062 ft).

Basal beds (Lower Cretaceous?).

3052-3062

(Below siltstone and glauconitic shale). Sandstone, glauconitic, conglomeratic.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 642 m (2105 ft) below sea-level.

Thickness: 881 m (2890 ft).

(Sandstone markers after Lutchman, 1977).

3062-3262

Sandstone, pale grey, fine- to medium-grained, quartzitic, kaolinitic; orthoquartzite; shale and siltstone.

3262-3920

Shale, brown-black, variably silty.

(M7 sandstone, "delta plain facies").

3920-4113

Siltstone with interbedded black shale.

4113-4712

Shale, brown-black, variably silty.

(M6 sandstone, "delta plain facies").

4712-4946

Sandstone, pale grey, buff, quartzitic, kaolinitic, in part silty; some interbedded shale, brown-black, silty, and siltstone, sandy.

4946-5197

Shale, brown-black, silty; some siltstone, sandy.



Borehole footage

Lithology

- (M5 sandstone, "delta plain facies").
- 5197-5303 Sandstone, pale grey, buff, quartzitic, kaolinitic; interbedded shale, brown-black, silty, and siltstone.
- 5303-5440 Shale, brown-black, silty; some very thinly interbedded sandstone and siltstone.
- (M4 sandstone, "delta front facies").
- 5440-5821 Sandstone, siltstone and shale: sandstone, pale grey, buff, quartzitic, kaolinitic; siltstone, in part sandy; shale, brown-black,
- 5821-5952 Shale, brown-black, bituminous.

UPPER DEVONIAN

Imperial Formation

- Top at 1522 m (4995 ft) below sea-level.  
Thickness: 456 m (1497 ft).
- 5952-7449 Shale, dark grey and black, in part silty grading to siltstone.

DEVONIAN

Thickness: 855 m (2805 ft).

Horn River Formation

- Top at 1979 m (6492 ft) below sea-level.  
Thickness: 30 m (97 ft).
- 7449-7546 Shale, brown-black, silty; near the base, some siltstone, brown-black, dolomitic.
- 7532 Top Bluefish Member, thickness: 4 m (14 ft).

Devonian carbonates assemblage

Thickness: 825 m (2708 ft).

Borehole footage

Lithology

Hume Formation

Top at 2008 m (6589 ft) below sea-level.  
Thickness: 131 m (429 ft).

7546-7975

Limestone, grey, buff, white, bioclastic, in part argillaceous, in the lower part with interbedded shale, calcareous.

Landry Formation

Top at 2139 m (7018 ft) below sea-level.  
Thickness: 602 m (1975 ft).

7975-9680

Limestone, buff, brown, dark brown, white, pelletoid (in the top 30 m, aphanitic to micrograined), variably argillaceous; some pyrite; in the lower part, some breccia.

9680-9950

Limestone, breccia, shell fragments, crinoids.

Arnica Formation

Top at 2741 m (8993 ft) below sea-level.  
Thickness: 48 m (156 ft).

9950-10106

Dolomite, grey-brown, dark brown, pale brown, microcrystalline, argillaceous, in part calcareous.

Tatsieta Formation

Top at 2789 m (9149 ft) below sea-level.  
Thickness: 45 m (148 ft).

10106-10254

Limestone, pale buff and white, aphanitic, in part dolomitic; grades downward to pale buff and some grey-green, in part micropyrritic, and with some shale, pale green, micropyrritic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1116 m (3660 ft).

Borehole footage

Lithology

Peel Formation

Top at 2834 m (9297 ft) below sea level.  
Thickness: >147 m (>483 ft).

10254-10737

Dolomite, pale buff, pale grey-buff, white,  
microcrystalline to aphanitic.

10737

Total depth: 3273 m.

101. N-05

Log of Socony South Tuttle Y.T. N-05.  
Location: 66°24'51"N., 136°46'23"W.  
Elevation of Kelly Bushing: 505 m (1656 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER DEVONIAN

"Imperial"

Top at bedrock, 496 m (1626 ft) above sea-level.  
Thickness: 1306 m (4286 ft).

30(S)-1460

Shale, dark grey, micromicaceous; some sandstone, grey, generally poorly sorted, fine-grained with some coarse grains of chert, in part quartzitic; some siltstone, brown-grey, argillaceous or sandy.

1460-4316

Unwashed samples.

DEVONIAN

Thickness: 1305 m (4281 ft).

Canol Formation

Top at 811 m (2660 ft) below sea-level.  
Thickness: 124 m (407 ft).

4216-4680

Unwashed samples.

4680-4723

Shale and orthoquartzite: shale, black, splintery, non-calcareous; orthoquartzite, clear and dark grey, or siltstone, silicified and argillaceous; much free quartz.

4410-4411 (cored) - Shale, grey-buff, silty, pyritic; some black plant remains.

4711-4720 (cored) - Breccia: dark grey argillaceous chert fragments in black siliceous matrix; some thin sandy layers; much white barite (bedded and/or filling), with quartz-filled fractures. (x-ray diffraction analysis on randomly selected white chip - 53% barite, 47% quartz, see Appendix I, 79-XR-10).

Borehole footage

Lithology

Devonian carbonates assemblage

Thickness: 1181 m (3874 ft).

Ogilvie Formation  
(upper part)

Top at 935 m (3067 ft) below sea-level.

Thickness: 105 m (343 ft).

4723-5066

Limestone, in the upper part buff, white, brown, dark brown, grey, bioclastic, in part argillaceous, grading downward to brown, grey, argillaceous, in part grading to shale, calcareous.

Landry Formation

Top at 1039 m (3410 ft) below sea-level.

Thickness: 185 m (606 ft).

5066-5672

Limestone, pale buff, white, brown, aphanitic and micrograined, in part fine-grained and in part "chalky".

Arnica Formation

Top at 1224 m (4016 ft) below sea-level.

Thickness: 863 m (2832 ft).

5672-8170

Dolomite: in the upper part, pale buff to grey-buff, mainly microcrystalline with rare very finely crystalline, interbedded with some shale, very dark grey, micromicaceous; grades downward through dolomite, buff, microcrystalline to, in the lower part, dolomite, brown, dark brown, very finely crystalline, sucrosic.

8170-8436

Dolomite, buff, brown, micro- and very finely crystalline, calcareous; some limestone, brown, buff, aphanitic to micro-grained. 8339-8340 ft - age: probably Late Silurian, Ludlow (B.S. Norford, in Norford et al., 1971, p. 22); Silurian or Devonian (B.S. Norford, pers. com., March 1979).

8436-8504

Appears to be intensely fractured: calcite, white, and "chalk".

Borehole footage

Lithology

Tatsieta Formation

Top at 2087 m (6848 ft) below sea-level.  
Thickness: 28 m (93 ft).

8504-8597

Limestone, pale buff, buff-grey, aphanitic; some shale, pale grey-green, green-grey, in part micropyrritic.

CAMBRIAN LOWER DEVONIAN

"Ronning-Road River"

Thickness: estimated at 1760 m (5773 ft).

Mount Kindle-Road River transitional unit

Top at 2116 m (6941 ft) below sea-level.  
Thickness: 92 m (301 ft).

8597-8898

Limestone, buff, "earthy", grey, white, dark brown, argillaceous, "chalky"; shale, brown calcareous, increasing downward; 8897.5-8898 ft - age: Silurian, probably Late Llandovery (B.S. Norford, *ibid.*, p. 22).

Road River Formation

Top at 2207 m (7242 ft) below sea-level.  
Thickness: 144 m (472 ft).

8898-9370

Shale, brown-black, very calcareous, grading to limestone, dark grey, argillaceous; some dolomite, dark brown, microcrystalline, slightly calcareous; at 9210-9220 ft, traces of chert, brown.

Franklin Mountain Formation

Top at 2351 m (7714 ft) below sea-level.  
Thickness: >657 m (>2157 ft).

Borehole footage

Lithology

9370-9414

Limestone, white and buff, "chalky" and micro-grained; some sparry calcite; traces of shale, pale grey-green, micropyrritic.

?Cherty member, thickness: 89 m (292 ft).

9414-9706

Limestone, brown, buff, very dark grey-brown, aphanitic, variably argillaceous; some limestone, brown, very finely crystalline, slightly dolomitic; at 9500-9560 ft, some chert, smoky, translucent and a little dark brown, chert especially abundant at 9500-9520 ft. 9523 and 9530 ft - age: Late Ordovician (B.S. Norford, *ibid.*, p. 22).

9706-11078

Limestone, buff, some pale buff, brown, grey-buff, mainly aphanitic; minor amounts of dolomite, microcrystalline.

11078-11527

Dolomite, pale buff to buff-grey, medium to coarsely crystalline.

11527

Total depth: 3513 m.

102. N-25

Log of Gulf Caribou Y.T. N-25.  
Location: 66°14'46"N., 134°50'04"W.  
Elevation of Kelly Bushing: 495 m (1625 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at bedrock, 495 m (1625 ft) above sea-level.  
Thickness: 206 m (677 ft).

[0-590 ft - M4 sandstone, "delta plain facies",  
(Lutchman, 1977), implied].

0-246

Sandstone, buff, very poorly sorted, fine- to coarse-grained, mainly quartz but with some other minerals including kaolin; some carbonaceous fragments; some siltstone, buff and some shale, black; grades downward to sandstone, conglomeratic, in part quartzitic.

246-590

Shale and sandstone: shale, very dark grey and black, carbonaceous, in part silty grading to siltstone, dark grey, in part sandy and in part with carbonaceous fragments; sandstone, grey, coarse-grained very poorly sorted, quartzitic, grading to orthoquartzite.

590-677

Shale, black, bituminous(?), silty, pyritic.

UPPER DEVONIAN

Imperial Formation

Top at 289 m (948 ft) above sea-level.  
Thickness: 1170 m (3840 ft).

677-2450

Shale, grey and dark grey, micromicaceous, in part silty grading to siltstone, brown-grey, argillaceous; some thinly interbedded siltstone, grey; 810-850 ft - age: Late Devonian, Famennian; 910-950 ft - age: Late Devonian; 960-1000 ft - age: Late Devonian, Famennian; (T.T. Uyeno; *see* Appendix I, 16-TTU-1974).

2450-2765

Siltstone, grey, in part argillaceous, and shale, as above.



Borehole footage

Lithology

2765-3360

Siltstone, pale grey and grey, in part coarse-grained, micaceous, with interbedded shale, as above.

3360-4517

Siltstone, brown-grey, argillaceous, micaceous, grading to shale, dark grey, silty, micaceous.

Horn River Formation

Top at 881 m (2892 ft) below sea-level.  
Thickness: 25 m (82 ft).

4517-4599

Shale, black, bituminous, pyritic.

CAMBRIAN-DEVONIAN

Road River Formation  
(Devonian carbonates equivalent)

Thickness: 1069 m (3506 ft).

Hume equivalent, top at 906 m (2974 ft) below sea-level.

Thickness: 189 m (619 ft).

4599-5218

Shale, black, non-calcareous, bituminous; some chert, black, in part black with white specks; some white calcite veins; traces of pyrite; in lower part, some limestone, grey, very silty.

Arnica-Landry equivalent, top at 1095 m (3593 ft) below sea-level, thickness: 857 m (2813 ft).

5218-7866

Shale, grey, brown-grey, in part flaky and micaceous, calcareous; in the lower part shale is in part very calcareous and, near the base, traces of limestone, buff, aphanitic.

7866-8031

Shale, black, calcareous, grading in part to limestone, brown, grey, argillaceous.

Tatsieta-Road River transitional unit, top at 1953 m (6406 ft) below sea-level, thickness: 23 m (74 ft).

8031-8105

Limestone, grey, brown and white, breccia; some shale, black, calcareous, with white calcite veins.

Borehole footage

Lithology

Road River Formation

Thickness: 312 m (1025 ft).

(Peel equivalent)

Top at 1975 m (6480 ft) below sea-level

Thickness: 136 m (447 ft).

8105-8552

Shale, in the upper part brown-grey and very calcareous, grading downward to dark brown-grey, silty, calcareous.

Road River Formation

(Mount Kindle equivalent)

Top at 2111 m (6927 ft) below sea-level.

Thickness: 176 m (578 ft).

8552-9130

Shale, black, silty, calcareous, with traces of limestone, white; some shell fragments and impressions; at 8640-8840 ft, traces of chert, black; in the lower part, shale is brown-black, very silty and dolomitic.

Franklin Mountain Formation

Top at 2288 m (7505 ft) below sea-level.

Thickness: 650 m (2134 ft).

9130-9220

Siltstone, black, brown-grey, argillaceous, dolomitic; some dolomite, buff, white with black streaks; traces of chert, buff, and some pyrite.

9220-9266

Siltstone, dark brown-grey, argillaceous, very dolomitic, grading to dolomite, silty, argillaceous; some chert, buff, brown, black.

Cherty member, thickness: 290 m (952 ft).

9266-10218

Dolomite, dark brown-grey to brown-black, microcrystalline, argillaceous and finely silty, in part pyritic; at 9298-9343 ft, dolomite, buff-grey and pale buff, non-argillaceous; some chert: at 9300-9600 ft, pale smoky with dark specks, pale buff, brown, some black, and some clear quartz, (chert especially abundant at 9350-9390 ft); at 10050-10218 ft, mottled white, translucent smoky, brown with banding and traces of oolitic structure, some brown and black, and some milky white to clear (chert especially abundant at 10070-10100 ft).

Borehole footage

Lithology

- 10218-10800 Dolomite, mainly creamy white to pale buff, medium crystalline; some brown, mottled, in part after oolite(?).
- 10800-11077 Dolomite, grey-buff, brown-grey, finely crystalline, in part siliceous and in part silty and possible argillaceous; some pyrite.
- 11077-11210 Dolomite, pale grey-buff, fine and medium(?) crystalline, siliceous in part very finely sandy or silty; much pyrite.
- 11210-11264 Dolomite, grey and dark grey, siliceous, silty, in part grading to siltstone, dolomitic.

PROTEROZOIC

Top at 2938 m (9639 ft) below sea-level.

Orthoquartzite unit, thickness: >167 m (>548 ft).

- 11264-11812 Orthoquartzite, grey, after siltstone, coarse-grained, in part finely sandy, quartzose, variably dolomitic; in the top 20 m, orthoquartzite is more dolomitic, grading to dolomite, siliceous, silty.
- 11812 Total depth: 3600 m.

103. N-26

Log of Socony Whitestone Y.T. N-26.

Location: 66°05'59"N., 138°20'00"W.

Elevation of Kelly Bushing: 696 m (2285 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 1930 m (6332 ft).

Basal beds (Lower Cretaceous?).

-6332

(Below shale). At the base, pyrite nodules and traces of dark grey chert pebbles.

UPPER PALEOZOIC

Thickness: >534 m (>1753 ft).

Hart River Formation

Top at 1234 m (4047 ft) below sea-level.

Thickness: 486 m (1596 ft).

6332-6386

Chert, pale buff to pale grey with brown specks, some grey, colour changing downward to mainly pale grey with brown specks and streaks.

?Chance Sandstone Member (Graham, 1973).

6386-6620

Limestone and shale: limestone, grey-brown to buff-grey and white, mostly argillaceous and silty; shale, black, calcareous, silty; some chert, brown, pale grey with brown specks, smoky translucent.

6620-6872

Limestone, brown, grey-buff, dark brown, white, micritic and bioclastic; some chert, grey-buff, pale grey with brown specks, smoky translucent; at 6670-6730 ft, interbedded shale, black calcareous.

6872-7108

Shale, black, silty, calcareous, with some interbedded limestone, brown, dark brown, microcrystalline.

Borehole footage

Lithology

7108-c. 7850

Limestone, grey-brown, some grey-buff, variably argillaceous; some chert, pale grey with brown specks, pale brown; some interbedded shale, black.

c. 7850-7912

(Poor samples). Siltstone and sandstone.

7912-7928

Sandstone, fine-, medium- and very coarse-grained, varicoloured chert/quartz; some chert pebble conglomerate.

Ford Lake Shale

Top at 1720 m (5643 ft) below sea-level.

Thickness: >48 m (>157 ft).

7928-8085

Shale, very dark grey to black, splintery, in part silty, at 7930-7970 ft, some interbedded sandstone and siltstone, quartzitic.

7940 ft - age: Visean to Namurian suggested (M.S. Barss, in Norford et al., 1971, p. 10).

8085

Total depth: 2464 m.

104. N-32

Log of At. Little Chicago N-32.

Location: 67°11'46"N., 130°06'55"W.

Elevation of Kelly Bushing: 89 m (292 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

DEVONIAN

Thickness: 613 m (2012 ft).

Horn River Group

Hare Indian Formation

Top at bedrock, 12 m (38 ft) above sea-level.  
Thickness: 80 m (264 ft).

2547-502

Shale, pale buff-grey, slightly calcareous  
micromicaceous, colour grading downward to dark  
brown-grey.

Bluefish Member, thickness: 5 m (16 ft).

502-518

Shale, black, calcareous, and limestone, brown-  
black with white streaks, very argillaceous,  
bioclastic.

Devonian carbonates Assemblage

Thickness: 533 m (1748 ft).

Hume Formation

Top at 69 m (226 ft) below sea-level.  
Thickness: 91 m (298 ft).

518-610

Limestone, pale buff to pale grey, micrograined,  
in part silty and argillaceous, fossiliferous;  
some shale, pale grey, slightly calcareous,  
micromicaceous.

610-816

Limestone and shale: limestone, pale buff-grey,  
micrograined, in part very finely crystalline,  
fossiliferous; shale, as above.

Borehole footage

Lithology

Landry Formation

Top at 160 m (524 ft) below sea-level.

Thickness: 262 m (858 ft).

816-1674

Limestone, brown, micrograined to aphanitic, grading downward to pale buff, cryptograined; some dolomite throughout, but especially around 1440-1470 ft.

Arnica Formation

Top at 421 m (1382 ft) below sea-level.

Thickness: 161 m (528 ft).

1674-2202

Dolomite, brown, dark brown, buff, pale buff, micro- to very finely crystalline, in part sucrosic.

Tatsieta Formation

Top at 582 m (1910 ft) below sea-level.

Thickness: 20 m (64 ft).

2202-2266

Limestone, pale buff, aphanitic, in part "chalky"; some shale, pale green, waxy, in part pyritic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness: 1209 m (3966 ft).

Peel Formation

Top at 602 m (1974 ft) below sea-level.

Thickness: 27 m (90 ft).

2266-2356

Dolomite, buff, microsucrosic, and pale grey, micro-crystalline; shale, grey-green, waxy.

Mount Kindle Formation

Top at 629 m (2064 ft) below sea-level.

Thickness: 303 m (994 ft).

Borehole footage

Lithology

- 2356-2545 Dolomite, brown to dark brown, microcrystalline; some dolomite, buff, aphanitic, calcareous.
- 2545-3350 Dolomite, buff to brown, very finely to finely crystalline, partly sucrosic; near the base, some calcite, white.

Franklin Mountain Formation

Top at 932 m (3058 ft) below sea-level.  
Thickness: 878 m (2882 ft).

- 3350-3600 Dolomite, buff, very finely to medium crystalline; some shale, grey-green, micropyrritic.
- Cherty member, thickness: 344 m (1130 ft).
- 3600-4730 Dolomite, creamy white, some buff and brown, very finely to medium and coarsely crystalline; chert, milky white, throughout, with some clear quartz in the lower part; chert especially abundant around 3700 ft.
- 4730-6086 Dolomite, pale buff to brown, micro- to very finely crystalline, finer with depth.
- 6086-6232 dolomite, pale buff, grey-buff, grey, microcrystalline; some interbedded shale, grey, in part dolomitic.

CAMBRIAN

Clastics-evaporites assemblage

Saline River Formation

Top at 1811 m (5940 ft) below sea-level.  
Thickness: >58 m (>190 ft)

Upper clastic member.

- 6232-6275 Dolomite and limestone, pale buff, microcrystalline to aphanitic; interbedded shale, grey-green, olive-green, maroon.



Borehole footage

Lithology

6275-6386

Shale, maroon, olive-green, red, purple, green; some thinly interbedded dolomite, buff, microcrystalline, and some siltstone, buff, green, pink, dolomitic, micromicaceous; traces of anhydrite.

Salt member, thickness: >11 m (>36 ft).

6386-6422

Halite.

6422

Total depth: 1957 m.

105. N-39.

Log of Mobil Ontadek Lake N-39.  
Location: 66°18'45"N., 128°21'39"W.  
Elevation of Kelly Bushing: 97 m (319 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to acoustilog.

Borehole footage

Lithology

DEVONIAN

Thickness: 486 m (1594 ft).

Horn River Group

Hare Indian Formation

Top at bedrock, 23 m (77 ft) above sea-level.  
Thickness: 102 m (336 ft).

242-578

(Mostly cavings). Traces of shale, grey, calcareous,  
micromicaceous.

540

Top Bluefish Member, thickness: 12 m (38 ft).

Devonian carbonates assemblage

Thickness: 383 m (1258 ft).

Hume Formation

Top at 79 m (259 ft) below sea-level.  
Thickness: 118 m (386 ft).

578-810

Cavings.

810-910

Limestone and shale: limestone, buff, pale buff,  
grey, bioclastic, fossiliferous; shale, grey,  
green-grey, calcareous.

910-964

Limestone, brown, grey, argillaceous; some shale,  
grey, dark brown-grey, calcareous.

Landry Formation

Top at 197 m (645 ft) below sea-level.  
Thickness: 127 m (416 ft).

Borehole footage

Lithology

964-1380

Limestone, brown, dark brown, buff, mainly aphanitic, some pelletoid; traces of shale, olive-green, in part micropyrritic; near the base, some dolomite, buff, microcrystalline.

Arnica Formation

Top at 323 m (1061 ft) below sea-level.

Thickness: 119 m (392 ft).

1380-1772

Dolomite, buff, brown, pale buff, micro- to very finely crystalline, in part sucrosic, in part with intercrystalline porosity; some shale, olive-green, waxy.

Fort Norman Formation  
(basal tongue)

Top at 443 m (1453 ft).

Thickness: 20 m (64 ft).

1772-1836

Dolomite, grey, pale grey, some buff, micro- to finely and medium crystalline, in part micro-sucrosic.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness: 776 m (2548 ft).

Mount Kindle Formation

Top at 462 m (1517 ft) below sea-level.

Thickness: 135 m (444 ft).

1836-2280

Dolomite, mainly buff, micro- to very finely crystalline, in part sucrosic.

Franklin Mountain Formation

Top at 598 m (1961 ft) below sea-level.

Thickness: 641 m (2104 ft).

Borehole footage

Lithology

2280-2382

Dolomite, creamy white, pale buff, pink, very finely to medium and coarsely crystalline, in part with some shale, very pale green, waxy.

Cherty member, thickness: 144 m (474 ft).

2382-2856

Dolomite, at the top creamy white, pale buff and traces of pink, grading downward through pale buff to buff, medium and coarsely crystalline, except microcrystalline in the lower 30 m; some chert, white and pale buff, throughout, more in the middle part (with oolites and pisolites) and especially abundant at 2580-2690 ft; some clear quartz throughout.

2856-4150

Dolomite, buff, brown, pale buff, some pale grey micro- to very finely crystalline, finer with depth.

4150-4384

Dolomite, grey-buff to brown-grey, microcrystalline, argillaceous; in the lower part, some interbedded shale, very dark grey to black, dolomitic; at the base, some shale, dark green.

CAMBRIAN

Clastics-evaporites assemblage

Thickness: 421 m (1382 ft).

Saline River Formation

Top at 1239 m (4065 ft) below sea-level.

Thickness: 349 m (1146 ft).

Upper clastic member, thickness: 39 m (128 ft).

4384-4512

Shale and dolomite; shale, purple, brick-red, olive-green, brown, green; dolomite, buff, pale buff, grey-buff, microcrystalline, in part argillaceous.

Salt member, thickness: 265 m (870 ft).

4512-5382

Halite.

Borehole footage

Lithology

Lower clastic member, thickness: 45 m (148 ft).

5382-5530

Dolomite, brown, buff, argillaceous, with interbedded shale, dark grey; traces of chert, dark brown.

Mount Cap Formation

Top at 1588 m (5211 ft) below sea-level.  
Thickness: 72 m (236 ft).

5530-5746

Shale, dark grey, brown, black, slightly calcareous; shale, green, green-grey; some limestone, buff, aphanitic; these grade downward to limestone, buff to buff-grey, aphanitic, and some shale, green, grey, brown, black.

5746-5766

Dolomite, brown, finely crystalline, with scattered high concentrations of glauconite pellets.

PROTEROZOIC

Top at 1660 m (5447 ft) below sea-level.  
Thickness: >41 m (>135 ft).

Dolomite unit.

5766-5901

Dolomite, pale buff, grey-buff, some pink streaks, anhydritic.

5901

Total depth: 1799 m.

106. N-49

Log of Peel Eagle Plains Y.T. No. 1.  
Location: 66°48'54"N., 138°08'30"W.  
Elevation of Kelly Bushing: 448 m (1469 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to gamma ray-neutron log.

Borehole footage

Lithology

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at bedrock, 436 m (1429 ft) above sea-level.  
Thickness: 105 m (344 ft).

40-384

Sandstone, brown-grey, very poorly sorted, fine- to coarse-grained, silty, angular chert/quartz, in part conglomeratic; some shale and siltstone, dark grey.

UPPER DEVONIAN

"Imperial" Formation

Top at 331 m (1085 ft) above sea-level.  
Thickness: 954 m (3130 ft).

384-3514

Shale, dark grey, in the lower part very dark grey, in part silty, micromicaceous; some siltstone and traces of sandstone, grey, very fine-grained, chert/quartz, silty.

DEVONIAN

Thickness: 995 m (3264 ft).

Canol Formation

Top at 623 m (2045 ft) below sea-level.  
Thickness: 24 m (78 ft).

3514-3592

Shale, black, bituminous, pyrite.

Borehole footage

Lithology

Devonian carbonates assemblage

Thickness: 971 m (3186 ft).

Ogilvie Formation, upper part

Top at 647 m (2123 ft) below sea-level.  
Thickness: 326 m (1068 ft).

3592-4318

Limestone, brown, bioclastic, in part reefoid (stromatopora, coral), in part argillaceous; in the lower part, some limestone, black, very argillaceous.

4318-4660

Limestone, brown and white, micrograined, bioclastic, "chalky"; much calcite, white.

Landry Formation

Top at 973 m (3191 ft) below sea-level.  
Thickness: 290 m (950 ft).

4660-5322

Limestone, in the upper part dark grey-brown, colour grading downward to buff and white, micrograined and aphanitic; limestone in the upper part argillaceous; white calcite throughout, more with depth.

5322-5610

Limestone and dolomite: limestone, pale buff, brown, white, fine-grained, fragmental; dolomite, brown, very finely crystalline, calcareous.

Arnica Formation

Top at 1262 m (4141 ft) below sea-level.  
Thickness: 220 m (723 ft).

5610-5906

Dolomite, brown, buff, white, micro-, very finely and finely crystalline; veins of white calcite and dolomite; some limestone, brown, aphanitic and micrograined.

5906-6333

Dolomite, pale grey, pale buff, microcrystalline; near the base, some shale, pale green.

Borehole footage

Lithology

Tatsieta Formation

Top at 1483 m (4864 ft) below sea-level.

Thickness: 136 m (445 ft).

6333-6778

Limestone, buff, aphanitic and micrograined with scattered pyrite; much limestone, white, "chalky" and calcite, white; some shale, pale green with brownish streaks and pale green-grey, waxy, in part micropyrritic; in the lower part, 50% calcite and "chalk", and some bituminous streaks.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1897 m (6223 ft).

Peel Formation

(dark dolomite facies)

Top at 1618 m (5309 ft) below sea-level.

Thickness: 80 m (264 ft).

6778-7042

Dolomite, dark brown, microcrystalline, slightly calcareous; 6792-6824 ft - age: Mid-Ordovician to Mid-Devonian, probably Silurian (*see* Appendix I, 4-TTU-1978).

Note: therefore probably Upper Silurian, if underlying beds are Middle to Upper Silurian.

Mount Kindle-Road River transitional unit

Top at 1699 m (5573 ft) below sea-level.

Thickness: 201 m (659 ft).

7042-7701

Limestone and shale: limestone, buff, "earthy", argillaceous; limestone, brown, dark brown, microcrystalline, dolomitic, in part argillaceous; shale, black, calcareous; grade downward to shale, dark grey, calcareous, and limestone, buff-grey, very argillaceous, and some limestone, grey-brown, argillaceous; 7048-7069 ft - age: Silurian to Early Devonian (Wenlockian? to early Emsian), but probably Wenlockian? to Ludlovian (T.T. Uyeno; *see* Appendix I, 4-TTU-1978); 7061 ft - age: Silurian to Devonian (B.S. Norford, *in* Norford et al., 1973, p. 25).



Borehole footage

Lithology

7069-7097 ft - age: Silurian, probably Wenlockian? to Ludlovian. (T.T. Uyeno; *see* Appendix I, 4-TTU-1978); 7337-7377 ft - age: Silurian (Wenlockian? - Ludlovian) to Early Devonian. (T.T. Uyeno; *see* Appendix I, 4-TTU-1978); 7337-7377 ft - age: probably Late Llandovery (B.S. Norford, in Norford et al., 1973, p. 26).

Franklin Mountain Formation

Top at 1900 m (6232 ft) below sea-level.  
Thickness: >575 m (>1888 ft).

- |           |   |
|-----------|---|
| 7701-7870 | Limestone, dark brown-grey, argillaceous.   |
| 7870-8180 | Limestone, dark brown-grey, slightly argillaceous, brecciated and with calcite veins; 7876-7906 ft - age: may be late Middle to early Late Ordovician. (T.T. Uyeno; <i>see</i> Appendix I, 4-TTU-1978); 7891-7898 ft - age: Late Ordovician. (B.S. Norford, <u>in</u> Norford et al., 1973, p. 26). |
| 8180-9589 | Dolomite, buff, pale buff, some brown, medium to coarsely crystalline.  |
| 9589      | Total depth: 2923 m.  |

107. N-50

Log of Am. Bell River Y.T. No. 1.  
Location: 67°19'45"N., 136°53'29"W.  
Elevation of Kelly Bushing: 318 m (1042 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to electric log.

Borehole footage

Lithology

MESOZOIC

Thickness: 1303 m (4275 ft).

Basal beds (Jurassic?).

4090-4275

(Below sandstone). Sandstone, grey to dark brown-grey, mainly fine- to very fine-grained, quartzitic, grading to orthoquartzite.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 985 m (3233 ft) below sea-level.

Thickness: 703 m (2306 ft).

4275-4960

Sandstone, grey, dark grey (very immature greywacke), very poorly sorted, conglomeratic, - angular chert, sedimentary rock fragments (including dolomite), some quartz-siliceous cement; some interbedded siltstone, dark grey, and shale, very dark grey to black, silty.

4960-5540

Sandstone, siltstone and shale: sandstone, grey, very poorly sorted, conglomeratic, cherty, siliceous cement; siltstone, brown-grey in part sandy, in part argillaceous, grading to shale, dark grey to black, silty; in the lower part, siltstone and shale predominated.

5540-5632

Sandstone, brown-grey, very poorly sorted, in part conglomeratic, silty, siliceous; some shale and siltstone.

5632-6123

Siltstone and shale: siltstone, brown-grey, in part coarse-grained, mostly argillaceous and siliceous; shale, dark grey to black, mostly silty; rare sandstone, grey, quartzitic.

Borehole footage

Lithology

6123-6581

Sandstone, siltstone and shale: sandstone, grey, mainly fine- to coarse-grained, very poorly sorted, in part conglomeratic, in part silty, chert with some quartz, siliceous cement; siltstone, dark grey, in part coarse-grained and sandy, siliceous cement; shale, dark grey to black, in part silty; some hairline, quartz-filled fractures.

"Imperial"

Top at 1688 m (5539 ft) below sea-level.  
Thickness: >434 m (>1423 ft).

6581-7700

Shale, dark grey to black, in part silty; some interbedded siltstone, grey, brown-grey, siliceous, in part coarse-grained; rare sandstone, grey, fine-grained, quartzitic; some quartz-filled fractures.

7700-8004

Samples missing.

8004

Total depth: 2440 m.

108. N-53

Log of W.M. North Hope Y.T. N-53.

Location: 66°32'54"N., 138°25'30"W.

Elevation of Kelly Bushing: 351 m (1150 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 715 m (2347 ft).

Basal beds (Lower Cretaceous?).

2398-2407

(Below shale). Pebbles and sandstone: pebbles of chert, dark grey, pale grey and trace of green; sandstone, pale buff-grey, fine-grained, poorly sorted, silty, quartz/chert, slightly dolomitic and siliceous; some sand, coarse, rounded, quartz; some siltstone, dark grey and green, argillaceous, highly glauconitic.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 383 m (1247 ft) below sea-level.

Thickness: 730 m (2395 ft).

2407-2420

Conglomerate: granules and pebbles of chert, grey, brown, buff, white, green-grey, in matrix of sandstone, fine- to very coarse-grained, silty, chert, siliceous and kaolinitic and pyritic.

2420-2776

Shale and siltstone: shale, dark brown-grey, in part silty, micromicaceous; siltstone, brown-grey, argillaceous.

2776-3590

Sandstone, siltstone and shale: sandstone, pale grey, very poorly sorted, fine- to very coarse-grained, in part conglomeratic (angular chert), kaolinitic, in part siliceous; siltstone, grey, fine-grained and coarse-grained, in part siliceous; shale, grey and dark brown-grey, in part silty.

3590-3807

Shale and siltstone: shale, grey and grey, micromicaceous; siltstone, grey, fine-grained and coarse-grained, siliceous.

Borehole footage

Lithology

3807-4802

Siltstone, sandstone and shale: siltstone, grey, brown-grey, fine-grained and coarse-grained, siliceous, in part sandy; sandstone, grey, poorly sorted, fine- to coarse-grained, angular chert, quartzitic; shale, dark grey, micromicaceous; trace of glauconite.

UPPER DEVONIAN

"Imperial"

Top at 1113 m (3652 ft) below sea-level.  
Thickness: 359 m (1178 ft).

4802-5980

Shale, dark and very dark grey, in part silty, micromicaceous; some siltstone, brown-grey, in part siliceous; traces of sandstone, grey, poorly sorted, chert/quartz.

DEVONIAN

Thickness: 872 m (2860 ft).

Canol Formation

Top at 1472 m (4830 ft) below sea-level.  
Thickness: 25 m (81 ft).

5980-6061

Shale, black, bituminous, pyritic.

Devonian Carbonates assemblage

Thickness: 847 m (2779 ft).

Ogilvie Formation, upper part

Top at 1497 m (4911 ft) below sea-level.  
Thickness: 103 m (339 ft).

6061-6400

Limestone, buff, brown, white, grey, dark brown, in part argillaceous, bioclastic; some very thin bituminous streaks.

Borehole footage

Lithology

Landry Formation

Top at 1600 m (5250 ft) below sea-level.  
Thickness: 491 m (1610 ft).

- 6400-7450 Limestone: at the top, brown, buff, white, in part aphanitic and "chalky", and traces of chert, dark brown; grades downward through fragmental with some chert to, at the base, in part argillaceous.
- 7450-7930 Limestone and dolomite: limestone, brown, buff, aphanitic and microcrystalline and some very fine-grained; dolomite, brown, dark brown, microcrystalline.
- 7930-8010 Limestone, buff-grey, "earthy", argillaceous; some dolomite, brown-black, microcrystalline, argillaceous; much calcite, white.

Arnica Formation

Top at 2091 m (6860 ft) below sea-level.  
Thickness: 135 m (443 ft).

- 8010-c. 8730 Dolomite, brown, buff, micro-and very finely crystalline, in part sucrosic.
- c. 8730-8453 Dolomite, pale buff, pale grey, microsucrosic; some shale, pale green, pale grey.

Tatsieta Formation

Top at 2226 m (7303 ft) below sea-level.  
Thickness: 118 m (387 ft).

- 8453-8840 Limestone, pale buff, aphanitic; limestone, white, both crystalline and "chalky"; some shale, pale green, traces of green and pale grey, in part micropyrritic; at 8700-8730 ft: some dolomite, pale grey, pale buff, microcrystalline.

Borehole footage

Lithology

CAMBRIAN LOWER DEVONIAN

Ronning Group

(Porcupine Platform-Representative Section)

Thickness estimated at 2040 m (6693 ft).

Peel Formation

Top at 2344 m (7690 ft) below sea-level.

Thickness: 241 m (790 ft).

8840-9630

Dolomite, mainly creamy white to pale buff with traces of pale buff-grey, in the upper part micro- to medium crystalline, in the lower part finely to coarsely crystalline; traces of shale, green, pale green.

Mount Kindle-Road River transitional unit

Top at 2585 m (8480 ft) below sea-level.

Thickness: 123 m (403 ft).

9630-9683

Dolomite, dark brown and brown-black, micro-crystalline, argillaceous; some shale, dark brown-grey.

9683-9845

Limestone, brown, pale buff, micro- and very finely crystalline, granular texture, trace of pelletoid; some dolomite, pale buff, medium and coarsely crystalline with some intercrystalline bitumen.

9845-9930

Limestone and chert: limestone, dark grey-brown and buff-grey, micrograined, argillaceous; chert, black and brown-black.

9930-10033

Limestone, dark grey-brown and buff-grey, very fine-grained, argillaceous; some shale, black; traces of chert, black (caving?).

Franklin Mountain Formation

Top at 2708 m (8883 ft) below sea-level.

Thickness: >1222 m (>4010 ft).

Cherty member, thickness: 179 m (587 ft).

Borehole footage

Lithology

10033-c. 10130	Limestone, brown, buff, very fine-grained and micro-grained, grading downward to microcrystalline, and aphanitic, in part dolomitic; much chert, brown-black to brown and translucent smoky.
c. 10130-10620	Limestone, brown, aphanitic, some oolite; some dolomite, buff, finely to medium crystalline, traces of chert, dark brown and brown-black.
10620-10693	Dolomite, pale buff, medium to coarsely crystalline.
10693-10932	Limestone, buff, aphanitic; in the lower part, oolite, partly dolomitized.
10932-11760	Dolomite, pale buff, buff, in the lower part, buff, brown, mainly finely to medium and coarsely crystalline; at the top, oolite dolomitized.
11760-12010	Dolomite, pale buff, medium to coarsely crystalline.
12010-12450	Limestone, pale buff, aphanitic to microcrystalline; some limestone, white, "chalky".
12450-12737	Dolomite, buff, very finely to medium and coarsely crystalline; some scattered pyrite.
12737-13940	Dolomite, creamy white, pale buff, mainly medium-to coarsely crystalline; in the lower part, some shale, black, and traces of shale, pale green.
13940-14043	Dolomite, dark brown, buff, finely to medium crystalline, toward the base with much dolomite, white, coarsely crystalline (breccia?).
14043	Total depth: 4280 m.



109. N-58

Log of Murphy S. Whitestone Y.T. N-58.

Location: 65°57'50"N., 138°25'30"W.

Elevation of Kelly Bushing: 889 m (2918 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 1798 m (5898 ft).

Basal beds (Lower Cretaceous?).

5862-5898

(Below shale). Sandstone and shale: sandstone, dark grey and green, very fine-grained, silty, slightly calcareous, very highly glauconitic, pyritic; shale, dark grey, in part silty and glauconitic.

UPPER PALEOZOIC

Thickness: >334 m (>1095 ft).

Jungle Creek Formation

Top at 908 m (2980 ft) below sea-level.

Thickness: 77 m (253 ft).

5898-6151

Sandstone and conglomerate: sandstone, coarse- and very coarse-grained, very poorly sorted, in part with calcareous matrix, silty, conglomeratic, grading to conglomerate, chert, grey, pale grey, buff, brown, milky white and trace of grey-green; some pyrite.

Httrain Formation

Top at 985 m (3233 ft) below sea-level.

Thickness: >257 m (>842 ft).

6151-6993

Limestone, buff to grey, skeletal, medium- and coarse-grained, with chert, pale grey, in part mottled brown and buff; limestone in part sandy, grading to very calcareous sandstone; in the upper part, some glauconite.

6993

Total depth: 2131 m.

110. N-77

Log of Toltec Peel River Y.T. N-77.

Location: 65°56'46"N., 134°29'12"W.

Elevation of Kelly Bushing: 148 m (487 ft).

Well log prepared by the writer, based on drill cuttings and Well History Report. No logs available.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at bedrock, 148 m (487 ft) above sea-level.

Thickness: 172 m (565 ft).

0-440

No samples.

440-565(S)

Siltstone, grey, hard, argillaceous, micromicaceous, grading to shale, dark grey, silty, micromicaceous; some pyrite.

DEVONIAN

Thickness estimated at 1128 m (3700 ft).

Road River Formation

Top at 24 m (78 ft) below sea-level.

Thickness: >951 m (>3121 ft).

Hume equivalent, (may include Horn River Member at the top) thickness: 311 m (1021 ft).

565(S)-980(S)

Shale, black, siliceous, hard; chert, black with white specks.

980-1586(R)

Poor samples (R) Shale with chert, as above.

Arnica-Landry equivalent

Top at 335 m (1099 ft) below sea-level.

Thickness: >640 m (>2100 ft).

1586-3686(R)

Shale, black, in part pyritic, in part calcareous, with interbedded limestone, dark brown, argillaceous; grades downward to shale, dark grey, slightly calcareous.

3686

Total depth: 1123 m.

111. 0-18

Log of Inexco Mallard Y.T. 0-18.  
Location: 65°47'58"N., 140°17'41"W.  
Elevation of Kelly Bushing: 1117 m (3665 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

UPPER PALEOZOIC

Thickness: >1989 m (>6524 ft).

Jungle Creek Formation

Top at bedrock, 1117 m (3665 ft) above sea-level.  
Thickness: 264 m (865 ft).

07-865

Shale, black, siliceous, variably calcareous; some pyrite; traces of limestone; abundant white calcite veins.

Ettrain Formation

Top at 853 m (2800 ft) above sea-level.  
Thickness: 148 m (487 ft).

865-1352

Limestone, grey, dark brown-grey, in part medium to coarsely crystalline with skeletal structure, in part siliceous, in part argillaceous grading to shale, black, calcareous or dolomitic; some pyrite.

Blackie Formation

Top at 705 m (2313 ft) above sea-level.  
Thickness: 625 m (2050 ft).

1352-3402

Siltstone, shale and sandstone; siltstone, grey, very calcareous, grading to limestone, silty, shale, dark grey to black, silty, calcareous; sandstone, in part dark grey, calcareous and siliceous, in part grey and pale grey, and very calcareous grading to limestone, sandy and silty; much white silica infill.

Borehole footage

Lithology

Ford Lake Shale

Top at 80 m (263 ft) above sea-level.  
Thickness: 952 m (3122 ft).

3402-6524

Shale, black, silty, siliceous, in part slightly calcareous, in part pyritic; some white silica infill.

FAULT.

Blackie Formation

Top at 871 m (2859 ft) below sea-level.  
Thickness: 477 m (1564 ft).

6524-8088

Siltstone, shale and sandstone: siltstone, grey and pale grey, very calcareous, grading to limestone, silty; shale, dark grey to black, silty, calcareous; sandstone, pale grey, silty, very calcareous, in part siliceous, grading to limestone, sandy and silty; some white silica infill.

Ford Lake Shale

Top at 1348 m (4423 ft) below sea-level.  
Thickness: >735 m (>2411 ft).

8088-10499

Shale, very dark grey to black, silty, siliceous, in part pyritic; some white silica infill (very much at 9780-9800 ft).

10499

Total depth: 3200 m.

112. 0-22

Log of SOBC Shaeffer Ck. Y.T. 0-22.  
Location: 66°41'54"N., 137°19'40"W.  
Elevation of Kelly Bushing: 352 m (1155 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 594 m (1950 ft).

Basal beds (Lower Cretaceous?).

1900-1936 (Below shale, sandstone, siltstone and coal).  
Siltstone, grey, coarse-grained, glauconitic;  
some sand, coarse, rounded, quartz; shale,  
very glauconitic.

1936-1950 Pebbles of chert, grey, black, brown-yellow.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 242 m (795 ft) below sea-level.

Thickness: 1421 m (4662 ft).

1950-3967 Shale, siltstone and sandstone: shale, buff-grey  
to dark grey, micromicaceous, flaky; siltstone,  
pale grey, fine-grained and coarse-grained;  
sandstone, pale grey, fine-grained, poorly sorted,  
in part with coarse-grains of chert, in the  
greater part quartzitic.

3967-5046 Sandstone and siltstone: sandstone, pale grey,  
fine-grained, poorly sorted, quartz/chert, in  
part very poorly sorted and conglomeratic  
(angular chert), quartzitic, siltstone, buff-grey,  
coarse-grained, in part quartzitic; siltstone,  
brown-grey, in part argillaceous; some shale,  
dark grey, micromicaceous.

5046-5182 Shale, grey to black, flaky to splintery, micro-  
micaceous.

5182-6612 Sandstone, very poorly sorted, quartz/chert, in part  
conglomeratic (angular chert), quartzitic; siltstone,  
brown-grey; some shale, grey, flaky, micromicaceous.

Borehole footage

Lithology

UPPER DEVONIAN

Imperial Formation

Top at 1663 m (5457 ft) below sea-level.  
Thickness: 518 m (1698 ft).

6612-8310

Shale, dark grey, micromicaceous; some siltstone, grey, brown-grey, coarse-grained and fine-grained, argillaceous.

DEVONIAN

Thickness estimated at 1086 m (3563 ft).

Canol Formation

Top at 2181 m (7155 ft) below sea-level.  
Thickness: 5 m (18 ft).

8310-8328

Shale, black, bituminous.

Devonian carbonates assemblage

Thickness: >623 m (>2045 ft).

Ogilvie Formation, upper part

Top at 2186 m (7173 ft) below sea-level.  
Thickness: 219 m (720 ft).

8328-9048

Limestone, reef. (stromatoporoids, corals crinoids, brachiopods).

Landry Formation

Top at 2406 m (7893 ft) below sea-level.  
Thickness: >404 m (>1325 ft).

9048-9715

Limestone, brown, white, buff, micrograined with some fine-grained and some aphanitic, in part "chalky"; traces of dolomite, brown, very finely crystalline, calcareous.

Borehole footage

Lithology

9715-10040

Limestone, buff, white, brown, variably "chalky", fine-grained and micrograined, in part argillaceous; in the lower part some aphanitic.

10040-10373

Limestone, brown, dark brown, buff, white, aphanitic, in part "chalky" and in part argillaceous, limestone grading downward to micrograined and aphanitic with some dolomite, buff, brown, microcrystalline, calcareous.

10373

Total depth: 3162 m.

113. O-27

Log of Shell Arctic Red River O-27.  
Location: 66°46'56"N., 132°49'36"W.  
Elevation of Kelly Bushing: 137 m (448 ft).  
Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 119 m (390 ft).

Basal beds (Lower Cretaceous?).

340(S)-390(S)

(Below siltstone and shale). Sandstone, medium-grained, poorly sorted, with some coarse and very coarse-grains, quartzose; sandstone, brown-grey, very fine-grained, silty, grading to siltstone; siltstone, dark brown, argillaceous; some shale, black, silty, micromicaceous.

UPPER DEVONIAN

Imperial Formation

Top at 18 m (58 ft) above sea-level.

Thickness: 871 m (2856 ft).

390(S)-3246

Shale, in the upper part grey, becoming dark grey downward, in part silty; some siltstone, grey, argillaceous, increasing downward; at 3150-3190 ft, siltstone, grey-brown, coarse-grained, argillaceous, at 3190-3246 ft, shale, as above, with some brown-black, bituminous.

DEVONIAN

Thickness: 668 m (2191 ft).

Horn River Formation

Top at 853 m (2798 ft) below sea-level.

Thickness: 83 m (272 ft).

3246-3518

Shale, black, in part silty, bituminous, in part pyritic.

3501

Top Bluefish Member, thickness: 5 m (17 ft).



Borehole footage

Lithology

Devonian carbonates assemblage

Thickness: 585 m (1919 ft).

Hume Formation

Top at 936 m (3070 ft) below sea-level.

Thickness: 102 m (335 ft).

3518-3853

Limestone and shale: limestone, grey-buff, white, brown, in part argillaceous and silty, fossiliferous; shale, grey, brown-grey, calcareous, micromicaceous.

Landry Formation

Top at 1038 m (3405 ft) below sea-level.

Thickness: 365 m (1197 ft).

3853-5050

Limestone, buff, brown and white, aphanitic, in part pelletoid; in the lower part, some dolomite, buff, brown, micro- and very finely crystalline, in part sucrosic.

Arnica Formation

Top at 1403 m (4602 ft) below sea-level.

Thickness: 107 m (350 ft).

5050-5400

Dolomite, brown, buff, micro- to very finely crystalline, sucrosic, with some intercrystalline porosity.

Tatsieta Fromation

Top at 1509 m (4952 ft) below sea-level.

Thickness: 11 m (37 ft).

5400-5437

Limestone, buff, aphanitic and shale, pale green, micropyrritic.

Borehole footage

Lithology

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1491 m (4891 ft).

Peel Formation

Top at 1521 m (4989 ft) below sea-level.  
Thickness: 275 m (901 ft).

- 5437-5830 Dolomite, pale buff, creamy white, microcrystalline, calcareous, in part very finely crystalline and sucrosic; some limestone, white, "chalky".
- 5830-6124 Dolomite, pale buff, microcrystalline, slightly calcareous, in part microsucrosic.
- 6124-6338 Dolomite, pale buff, pale grey, microcrystalline, in part silty or argillaceous, grading to shale, green-grey, brown-grey, very dolomitic; traces of shale, very dark grey.

Mount Kindle Formation

Top at 1795 m (5890 ft) below sea-level.  
Thickness: 222 m (729 ft).

- 6338-7067 Dolomite, buff, brown, dark brown, micro-, very finely and finely crystalline, in part sucrosic.
- 7067 Total depth: 2154 m.

114. 0-62

Log of Triad Hume River 0-62.

Location: 65°51'46"N., 129°12'04"W.

Elevation of Kelly Bushing: 87 m (285 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 455 m (1494 ft).

Basal beds (Cretaceous).

1458-1504

(Below glauconitic sandstone). Sandstone, shale and coal: sandstone, grey to black, very poorly sorted, quartzose, carbonaceous, sand, coarse, sub-rounded, quartz; shale, black, carbonaceous, and coal.

UPPER DEVONIAN

Imperial Formation

Top at 372 m (1219 ft) below sea-level.

Thickness: 28 m (92 ft).

1504-1596

Shale, dark grey, in part silty and micromicaceous.

DEVONIAN

Thickness: 777 m (2551 ft).

Horn River Group

Thickness: 364 m (1194 ft).

Canol Formation

Top at 400 m (1311 ft) below sea-level.

Thickness: 9 m (31 ft).

1596-1627

Shale, black, bituminous, pyritic; some siltstone, brown-grey, medium-grained, argillaceous, slightly calcareous.

Borehole footage

Lithology

?Allochthonous limestone unit, thickness: 8 m  
(25 ft).

1627-1652

Siltstone, limestone and chert: siltstone, brown-grey, siliceous, in part very pyritic; limestone, buff and white with trace of oolite; chert, buff, and white, in part spicular.

Ramparts Formation

Top at 417 m (1367 ft) below sea-level.  
Thickness: 155 m (508 ft).

Reef member, thickness: 112 m (368 ft).

1652-2020

Limestone, reef.

Platform member, thickness: 43 m (140 ft).

2020-2052

Carcajou marker 10 m (32 ft). Shale, grey-brown, very calcareous; shale, black, bituminous; some limestone, black, brown, very argillaceous; some shale, dark green, splintery.

2052-2160

Limestone, buff to white, microcrystalline, bioclastic, in part silty.

Hare Indian Formation

Top at 572 m (1875 ft) below sea-level.  
Thickness: 192 m (630 ft).

2160-2749

Shale, at the top pale grey, calcareous, very silty and micromicaceous, grading to siltstone, shale grading downward through grey, calcareous and brown-grey to dark brown-grey.

Bluefish Member, thickness: 12 m (41 ft).

2749-2790

Shale, black, non-calcareous; at the base, limestone, brown, grey to black, very argillaceous.

Devonian carbonates assemblage

Thickness: 414 m (1357 ft).

Borehole footage

Lithology

Hume Formation

Top at 764 m (2505 ft) below sea-level.  
Thickness: 97 m (317 ft).

2790-2953 Limestone, brown, grey, buff, bioclastic, in part silty and argillaceous; at 2800-2850 ft, much shale, brown-grey, calcareous.

2953-3107 Limestone and shale: limestone, brown, buff, grey, white, in part silty and argillaceous; shale, pale grey, grey, calcareous, micromicaceous.

Landry Formation

Top at 860 m (2822 ft) below sea-level.  
Thickness: 177 m (580 ft).

3107-3687 Limestone, brown, dark brown, aphanitic with some pelletoid, colour grading downward through buff and brown to buff and pale buff.

Arnica Formation

Top at 1037 m (3402 ft) below sea-level.  
Thickness: 96 m (315 ft).

3687-4002 Dolomite, brown, dark brown, micro- to very finely crystalline with some intercrystalline porosity.

Fort Norman Formation (basal tongue)

Top at 1133 m (3717 ft) below sea-level.  
Thickness: 44 m (145 ft).

4002-4135 Dolomite, pale buff, pale grey, micro- to finely and medium crystalline; some shale, very pale green-grey and trace of very pale green, waxy, in part micropyrritic.

4135-4147 Dolomite, grey, pale grey, microcrystalline, some coarsely crystalline; some shale, green-grey.

Borehole footage

Lithology

CAMBRIAN LOWER DEVONIAN

Ronning Group

Thickness estimated at 869 m (2850 ft).

Mount Kindle Formation

Top at 1177 m (3862 ft) below sea-level.  
Thickness: >138 m (>453 ft).

4147-4600

Dolomite, buff, brown, micro- to very finely  
crystalline; some intercrystalline porosity.

4600

Total depth: 1402 m.

115. 0-65

Log of Inexco Weldon Creek 0-65.

Location: 66°04'45"N., 132°27'01"W.

Elevation of Kelly Bushing: 223 m (731 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 566 m (1856 ft).

Basal beds (Lower Cretaceous).

1800-1856

(Below shale). Siltstone, dark grey, argillaceous,  
very glauconitic, in part sandy; some sand,  
coarse.

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 343 m (1125 ft) below sea-level.

Thickness: 20 m (66 ft).

(7M4 sandstone, "prodelta facies", Lutchman, 1977).

1856-1922

(Poor samples). Siltstone, pale buff, coarse-grained,  
and sandstone, pale buff, pale grey, very fine-  
grained, in part quartzitic.

UPPER DEVONIAN

Imperial Formation

Top at 363 m (1191 ft) below sea-level.

Thickness: 666 m (2186 ft).

1922-3770

Shale, very dark grey, flaky to splintery.

3770-4108

Shale, as above, and siltstone, brown-grey, fine-  
grained and coarse-grained.

DEVONIAN

Thickness: 769 m (2522 ft).

Borehole footage

Lithology

Horn River Formation

Top at 1029 m (3377 ft) below sea-level.  
Thickness: 70 m (231 ft).

4108-4339

Shale, black, bituminous, pyritic.

4302

Top Bluefish Member, thickness: 11 m (37 ft).

Devonian Carbonates Assemblage

Thickness: 698 m (2291 ft).

Hume Formation

Top at 1100 m (3608 ft) below sea-level.  
Thickness: 138 m (453 ft).

4339-4792

Limestone, buff, grey-buff, brown, pale grey, micro-grained with some very fine-grained, in part silty and argillaceous, bioclastic, fossiliferous; in the lower part, some shale, very dark grey, splintery.

Landry Formation

Top at 1238 m (4061 ft) below sea-level.  
Thickness: 424 m (1392 ft).

4792-5520

Limestone, brown, aphanitic, in part micrograined, some pelletoid; shell fragments; some dolomite, brown, microcrystalline, in part sucrosic.

5520-6184

Dolomite, buff, brown, micro- to very finely crystalline, in part sucrosic, in part calcareous; in the lower part, dolomite, as above, and limestone, brown and white, micrograined, with some shell fragments.

Arnica Formation

Top at 1662 m (5453 ft) below sea-level.  
Thickness: 130 m (426 ft).



Borehole footage

Lithology

6184-6610

Dolomite, buff, brown, micro- to very finely crystalline, for the greater part sucrosic with some porosity.

Tatsieta Formation

Top at 1792 m (5879 ft) below sea-level.  
Thickness: 6 m (20 ft).

6610-6630

Limestone, buff, aphanitic, and limestone, pale grey, argillaceous.

CAMBRIAN-LOWER DEVONIAN

Ronning Group

Thickness estimated at 1219 m (4000 ft).

Peel Formation

Top at 1798 m (5899 ft) below sea-level.  
Thickness: >194 m (>635 ft).

6630-7265

Dolomite, pale buff, micro- to finely crystalline, grading downward to grey-buff, some pale grey, mainly microcrystalline.

7265

Total depth: 2214 m.

116. 0-78

Log of Chevron E. Pine Creek Y.T. 0-78.

Location: 66°57'53"N., 137°58'58"W.

Elevation of Kelly Bushing: 389 m (1277 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

Thickness: 778 (2552 ft).

Basal beds (Lower Cretaceous).

2547-2552

(Below siltstone and shale). Sandstone, fine-grained and coarse-grained, cherty with 25% glauconite, pyritic; 2415-2470 ft - age: Early to Middle Albian; 2535-2550 ft - age: Early Albian or older (J.H. Wall, in Brideaux et al., 1976, p. 10).

UPPER DEVONIAN-LOWER CARBONIFEROUS

Tuttle Formation

Top at 389 m (1275 ft) below sea-level.

Thickness: 170 m ( 557 ft).

2552-2648(R)

Sandstone, siltstone and some shale.

2660-3109

Sandstone, siltstone and shale: sandstone, grey, very poorly sorted, in part conglomeratic (angular fragments of chert, grey to white, rock fragments and quartz), in part silty; siltstone, grey, coarse-grained, sandy, in part argillaceous; shale, brown-grey to very dark grey, in part very silty, micaceous.

3109

Total depth: 948 m.

117. P-34

Log of Socony Molar Y.T. P-34.

Location: 67°03'59"N., 138°36'00"W.

Elevation of Kelly Bushing: 803 m (2636 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to sonic log.

Borehole footage

Lithology

MESOZOIC

7950-7990

(Below cherty conglomerate and sandstone). Sandstone, fine-grained, well-sorted, quartzose, with much kaolin, in part porous, in part quartzitic.

7990-8704

Shale, siltstone and sandstone (near the top, some ironstone, in part sandy): shale, very dark grey to black, silty, in part sandy grading to siltstone, dark grey, coarse-grained, argillaceous, sandy; sandstone, grey to dark grey, very poorly sorted, fine- to coarse-grained, very cherty, siliceous, in part with very coarse angular grains of chert.

Age: Early Cretaceous, on re-examination (J. Wall, pers. comm., Aug. 1979), previously 8150-8704 ft - Early to Middle Jurassic (T.P. Chamney, in Norford et al., 1971, p. 13).

118. P-75

Log. of Decalta Rond Lake No. 1.

Location: 67°04'48"N., 128°28'38"W.

Elevation of Kelly Bushing: 122 m (399 ft).

Well log prepared by the writer, based on drill cuttings;  
depth adjusted to electric log.

Borehole footage

Lithology

DEVONIAN

Thickness estimated at 453 m (1485 ft).

Devonian Carbonates assemblage

Hume Formation

Top at bedrock, 69 m (226 ft) above sea-level.

Thickness: 86 m (282 ft).

170(S)

173(R)-455

Limestone, grey-buff to grey and brown-grey, in part argillaceous and silty, bioclastic, increasingly fossiliferous with depth, in part pyritic; some shale, buff-grey and grey, calcareous, micromicaceous.

Landry Formation

Top at 17 m (56 ft) below sea-level.

Thickness: 248 m (815 ft).

455-c. 1270

Limestone, brown, buff, colour grading downward to pale buff and buff, micrograined to aphanitic; in the upper part, rare pelletal structure; near the base, in part dolomitized with rare intercrystalline porosity.

Arnica Formation

Top at 265 m (871 ft) below sea-level.

Thickness: >69 m (>227 ft).

c. 1270-1345

Dolomite, brown, dark brown, buff, mainly very finely crystalline with trace of porosity.

1345-1497(R)

Dolomite, brown, very finely crystalline with some good intercrystalline porosity.

1497

Total depth: 456 m.