

Research Council of Alberta
Report 72-6
DRILL HOLE LOGS, EDMONTON AREA — McPherson and Kathol

RESEARCH COUNCIL OF ALBERTA

REPORT 72-6

**STRATIGRAPHIC SECTIONS AND
DRILL HOLE LOGS,
EDMONTON AREA, ALBERTA**

by

R. A. McPherson and C. P. Kathol



Price \$1.50

RESEARCH COUNCIL OF ALBERTA

REPORT 72-6

STRATIGRAPHIC SECTIONS AND
DRILL HOLE LOGS,
EDMONTON AREA, ALBERTA

by

R. A. McPherson and C. P. Kathol

Research Council of Alberta
Edmonton, Alberta
1972

CONTENTS

	Page
Abstract	1
Introduction.....	1
Acknowledgments	1
Source of data	1
Description of geologic deposits	2
Bedrock	2
Bedrock (ice-shoved).....	2
Saskatchewan Sands and Gravels.....	2
Glacial till.....	2
Glacial sand and gravel	2
Lacustrine deposits	2
Lacustro-till	3
Alluvium	3
Fill.....	3
Method of data presentation	3
Drill hole logs.....	3
Stratigraphic sections	70

ILLUSTRATIONS

Figure 1. Location of drill holes and stratigraphic sections.....	79
---	----

STRATIGRAPHIC SECTIONS AND DRILL HOLE LOGS EDMONTON AREA, ALBERTA

Abstract

The Edmonton area is covered by unconsolidated surficial deposits of variable thickness and origin, overlying bedrock formations of Late Cretaceous age. Information on these deposits and bedrock strata is presented in the form of drill hole logs and measured outcrop sections.

INTRODUCTION

The purpose of this report is to publish, for those persons interested in the geology of the Edmonton area, data obtained by the Geology Division of the Research Council of Alberta as part of an urban geology project. The information published here, which includes measured outcrop sections and drill hole logs, will supplement a detailed geology report to be published under a separate cover.

Additional drilling data has been collected from private sources by the Research Council of Alberta, in cooperation with the Geological Survey of Canada. This information will be included in a data file which will be available to the general public upon request from the Geological Survey of Canada.

Acknowledgments

Mr. C. Waterman of the Research Council of Alberta aided the writers in the description of the stratigraphic sections and supervised much of the drilling program. Drilling was performed by Mr. C. Pearson and Mr. D. MacRae. The Department of Highways and Transport provided bench mark data used to determine drill hole elevations. A theodolite, which was used to measure stratigraphic sections, was obtained from the Department of Civil Engineering, University of Alberta.

SOURCE OF DATA

Drilling information was obtained using a 5-inch diameter truck-mounted power auger. One hundred and ninety-eight holes were drilled on a 1-mile grid system (Fig. 1). The holes were drilled to bedrock wherever possible; however, the auger is limited to a maximum depth of 150 feet. The elevation of the holes was determined by levelling.

Stratigraphic sections along the North Saskatchewan River were described and measured utilizing a theodolite for elevation determinations.

DESCRIPTION OF GEOLOGICAL DEPOSITS

The following section provides a brief explanation of the geologic terminology used in the drill log and stratigraphic section descriptions.

Bedrock

The Edmonton Formation, composed of interbedded bentonitic shales and sandstones with numerous coal seams, underlies most of the area. The Belly River Formation outcrops in the extreme northeast corner of the area; it consists of bentonitic sandstone and shale with minor coal.

Bedrock (ice-shoved)

Blocks of bedrock material underlain by glacial deposits are common in the area. They have been moved by glacier ice and are referred to as ice-shoved bedrock.

Saskatchewan Sands and Gravels

The Saskatchewan Sands and Gravels are quartzose sediments of fluvial origin deposited prior to glaciation in the area. They are usually underlain by bedrock and overlain by glacial deposits.

Glacial till

Till is unsorted, unstratified sediment deposited by a glacier. In many places the till contains a high percentage of local bedrock material; this is indicated in the logs as till (bedrock-till mixture).

Glacial sand and gravel

Sand and gravel deposited by glacial meltwater is referred to as glacial sand and gravel.

Lacustrine deposits

Sediments composed of bedded sands, silts, and clays were deposited in a large proglacial lake called Glacial Lake Edmonton. They are referred to as lacustrine deposits and described as either sands, silts, or clays.

Lacustro-till

This term is used to describe a deposit consisting of lacustrine sediments with pebbles and till-like layers. Lacustro-till is deposited either by mud flows into a glacial lake or by ice rafting.

Alluvium

Alluvium refers to Recent river terrace and flood plain deposits of the North Saskatchewan River and consists of gravel, sand, silt, and clay.

Fill

Fill describes any surface material deposited during construction.

METHOD OF DATA PRESENTATION

The locations of the drill holes and stratigraphic sections are indicated in figure 1 and are described in further detail using both U.T.M.¹ (Universal Transverse Mercator) and province of Alberta land survey systems.

All elevations used are geodetic elevations; it should be stressed that geodetic elevations are 43 feet lower than the datum used by the City of Edmonton.

DRILL HOLE LOGS

Hole No. 1

Location: U.T.M. - 507000 East, 217000 North
SE corner Lsd. 1-25-51-23 W. 4th Mer.

Elevation: 2480 ft.

Depth (ft.)

0-20	Till, brown, dry
20-51	Till, hard, grey with soft silty beds at 32-33, 35-37, 40-45 ft.
51-65	Bedrock

¹The Universal Transverse Mercator Grid, U.T.M., which was used to describe the location of holes or sections, is abbreviated slightly in this report. Each Easting consists of "3" followed by five digits and each Northing consists of "59" followed by five digits. All locations are within U.T.M. Zone 12.

Hole No. 2

Location: U.T.M. - 492000 East, 217000 North
SE corner Lsd. 1-26-51-23 W. 4th Mer.

Elevation: 2466 ft.

Depth (ft.)

0-5	Lacustro-till
5-20	Till, hard, buff, with large pebbles
20-48	Till, grey, silt increasing towards base
48-67	Bedrock, fairly soft at 48-60 ft., hard at 60-67 ft., mainly shale

Hole No. 3

Location: U.T.M. - 475000 East, 218000 North
SE corner Lsd. 1-27-51-23 W. 4th Mer.

Elevation: 2403 ft.

Depth (ft.)

0-6	Lacustro-till, silty clay with pebbles
6-15	Till, buff
15-52	Till, grey, few large pebbles at 36 ft.
52-70	Bedrock, hard shale at 65-70 ft.

Hole No. 4

Location: U.T.M. - 459000 East, 217000 North
NW corner Lsd. 13-22-51-23 W. 4th Mer.

Elevation: 2387 ft.

Depth (ft.)

0-41	Lacustrine clay, silty
41-53	Till
53-75	Bedrock, shale and siltstone, bentonite bed present

Hole No. 5

Location: U.T.M. - 444000 East, 219000 North
SW corner Lsd. 4-28-51-23 W. 4th Mer.

Elevation: 2441 ft.

Depth (ft.)

0-14	Till, hard, brown
14-80	Till, grey, soft to 40 ft., hard at 40-80 ft.
80-110	Bedrock

Hole No. 6

Location: U.T.M. - 428000 East, 219000 North
SW corner Lsd. 4-29-51-23 W. 4th Mer.

Elevation: 2423 ft.

Depth (ft.)

0-6	Lacustro-till, brown
6-21	Till, brown
21-57	Till, grey
57-63	Sand, glacial
63-75	Till
75-95	Bedrock, mainly grey sandstone

Hole No. 7

Location: U.T.M. - 411000 East, 220000 North
SW corner Lsd. 4-30-51-23 W. 4th Mer.

Elevation: 2423 ft.

Depth (ft.)

0-17	Till, buff, stony
17-60	Till, dark grey, wet
60-80	Bedrock, wet shale at 60-70 ft., sandstone at 70-80 ft.

Hole No. 8

Location: U.T.M. - 394000 East, 221000 North
SW corner Lsd. 4-25-51-24 W. 4th Mer.

Elevation: 2378 ft.

Depth (ft.)

0-13	Till, buff
13-75	Till, grey, silty (no sand)
75-79	Sand and gravel, glacial, wet
79-85	Bedrock, sandstone, very wet

Hole No. 9

Location: U.T.M. - 378000 East, 220000 North
NW corner Lsd. 13-23-51-24 W. 4th Mer.

Elevation: 2289 ft.

Depth (ft.)

0-8	Lacustrine clay, brown
8-30	Till, brown, bedrock inclusions to 25 ft.
30-48	Till, hard, grey, stony at 40-48 ft.
48-117	Sand, Saskatchewan, grey, few gravel beds at 92-117 ft.
117-120	Bedrock, hard brown shale

Hole No. 10

Location: U.T.M. - 362000 East, 222000 North
SW corner Lsd. 4-27-51-24 W. 4th Mer.

Elevation: 2257 ft.

Depth (ft.)

0-17	Lacustrine clay, brown, lacustro-till at 10-15 ft.
17-20	Till, brown, with large pebbles
20-69	Till, hard, grey
69-80	Bedrock, mainly dark grey shale

Hole No. 11

Location: U.T.M. - 345000 East, 222000 North
NE corner Lsd. 16-20-51-24 W. 4th Mer.

Elevation: 2253 ft.

Depth (ft.)

0-27	Lacustro-till
27-29	Till, brown, stony
29-37	Till, hard, grey
37-60	Bedrock, sandy, grey

Hole No. 12

Location: U.T.M. - 329000 East, 223000 North
SE corner Lsd. 1-30-51-24 W. 4th Mer.

Elevation: 2255 ft.

Depth (ft.)

0-15	Lacustro-till
15-26	Lacustrine clay, soft, wet
26-29	Till, grey
29-50	Bedrock, shale

Hole No. 13

Location: U.T.M. - 314000 East, 224000 North
SW corner Lsd. 4-30-51-24 W. 4th Mer.

Elevation: 2255 ft.

Depth (ft.)

0-15	Lacustrine clay, buff, wet below 11 ft.
15-26	Lacustrine clay, silty
26-37	Till, hard, grey
37-55	Bedrock, shale, very hard at 50-55 ft.

Hole No. 14

Location: U.T.M. - 279000 East, 225000 North
SE corner Lsd. 1-27-51-25 W. 4th Mer.

Elevation: 2255 ft.

Depth (ft.)

0-12	Lacustrine clay, buff to grey
12-62	Lacustrine clay, grey, silty
62-70	Bedrock, grey shaly sandstone

Hole No. 15

Location: U.T.M. - 263000 East, 225000 North
NE corner Lsd. 16-21-51-25 W. 4th Mer.

Elevation: 2254 ft.

Depth (ft.)

0-25	Lacustrine clay, buff, silty, grey below 20 ft.
25-67	Lacustrine silt, brownish-grey, sandy
67-80	Bedrock, grey shale

Hole No. 16

Location: U.T.M. - 247000 East, 225000 North
NE corner Lsd. 16-20-51-25 W. 4th Mer.

Elevation: 2246 ft.

Depth (ft.)

0-30	Lacustrine clay, increasingly silty with depth
30-60	Lacustrine silt, sandy
60-68	Till-bedrock mixture
68-72	Bedrock (ice-shoved ?)
72-74	Sand, glacial
74-90	Bedrock, grey shale

Hole No. 17

Location: U.T.M. - 214000 East, 227000 North
NW corner Lsd. 13-24-51-26 W. 4th Mer.

Elevation: 2265 ft.

Depth (ft.)

0-25	Lacustrine clay, silty
25-61	Lacustrine silt and silty clay, soft, wet
61-71	Till, hard, grey, with coal fragments
71-73	Gravel, glacial
73-80	Till, hard
80-125	Sand, Saskatchewan, few pebbles at 80-95 ft.

Hole No. 18

Location: U.T.M. - 509000 East, 233000 North
SE corner Lsd. 1-36-51-23 W. 4th Mer.

Elevation: 2466 ft.

Depth (ft.)

0-10	Till, brown
10-47	Till, grey, hard below 28 ft., silty with few pebbles at 35-40 ft.
47-60	Bedrock, sandstone at 55-60 ft.

Hole No. 19

Location: U.T.M. - 493000 East, 233000 North
NW corner Lsd. 13-25-51-23 W. 4th Mer.

Elevation: 2437 ft.

Depth (ft.)

0-17	Till, buff
17-53	Till, soft, grey, sandy
53-65	Bedrock, grey shale, bentonitic

Hole No. 20

Location: U.T.M. - 476000 East, 233000 North
NE corner Lsd. 16-27-51-23 W. 4th Mer.

Elevation: 2362 ft.

Depth (ft.)

0-10	Lacustrine clay, silty clay
10-17	Till, soft, buff
17-30	Till, soft, grey
30-45	Bedrock, grey sandstone at 30-40 ft., sandy shale and coal at 40-45 ft.

Hole No. 21

Location: U.T.M. - 460000 East, 234000 North
NW corner Lsd. 13-27-51-23 W. 4th Mer.

Elevation: 2362 ft.

Depth (ft.)

0-7	Lacustro-till
7-16	Till, buff, stony
16-37	Till, grey, few pebbles
37-50	Bedrock, grey shale at 37-42 ft., bluish-grey shaly sandstone at 42-50 ft.

Hole No. 22

Location: U.T.M. - 443000 East, 235000 North
SW corner Lsd. 4-33-51-23 W. 4th Mer.

Elevation: 2384 ft.

Depth (ft.)

0-8	Lacustro-till
8-14	Till, buff
14-73	Till, grey, sandy
73-85	Bedrock, bluish-grey shaly sandstone

Hole No. 23

Location: U.T.M. - 428000 East, 235000 North
NW corner Lsd. 13-29-51-23 W. 4th Mer.

Elevation: 2392 ft.

Depth (ft.)

0-11 Lacustro-till, brown
11-95 Till, grey, sandy bed at 52-57 ft.

Hole No. 24

Location: U.T.M. - 411000 East, 236000 North
SE corner Lsd. 1-36-51-24 W. 4th Mer.

Elevation: 2361 ft.

Depth (ft.)

0-16 Lacustro-till, largely lacustrine deposits
to 10 ft., a few sand lenses
16-95 Till, hard, grey, fine sand lenses
towards bottom

Hole No. 25

Location: U.T.M. - 395000 East, 237000 North
SW corner Lsd. 4-36-51-24 W. 4th Mer.

Elevation: 2331 ft.

Depth (ft.)

0-33 Sand, outwash, brown, "dirty",
silty below 25 ft.
33-53 Till, soft, dark grey, sandy
53-66 Till-bedrock mixture
66-75 Bedrock, hard

Hole No. 26

Location: U.T.M. - 378000 East, 237000 North
SE corner Lsd. 1-34-51-24 W. 4th Mer.

Elevation: 2265 ft.

Depth (ft.)

0-22	Lacustrine clay, greyish-brown
22-26	Till, soft, grey
26-72	Till, hard, grey with scattered stony lenses
72-85	Bedrock, fissured - contact may be as high as 50 ft.

Hole No. 27

Location: U.T.M. - 362000 East, 239000 North
SE corner Lsd. 1-33-51-24 W. 4th Mer.

Elevation: 2245 ft.

Depth (ft.)

0-13	Lacustro-till, greyish-brown
13-38	Till, hard, grey
38-57	Sand, glacial, scattered clay lenses, some gravel at 38-39 ft. and at 57 ft.
57-65	Bedrock, greyish-brown, sandy

Hole No. 28

Location: U.T.M. - 345000 East, 238000 North
SE corner Lsd. 1-32-51-24 W. 4th Mer.

Elevation: 2239 ft.

Depth (ft.)

0-17	Lacustrine clay, buff, grading to clayey silt at 17 ft.
17-31	Till, brownish-grey, sandy
31-43	Bedrock, shaly sandstone (ice-shoved?)
43-58	Till, dark grey
58-79	Sand, Saskatchewan, fine- to coarse-grained
79-90	Bedrock, grey sandy shale

Hole No. 29

Location: U.T.M. - 329000 East, 238000 North
SW corner Lsd. 4-32-51-24 W. 4th Mer.

Elevation: 2245 ft.

Depth (ft.)

0-20	Lacustrine clay, brownish-grey, sandy with a few pebbles
20-32	Till, sandy clay, quite stony at 26-32 ft.
32-43	Bedrock, shale (ice-shoved ?)
43-50	Till, dark grey
50-60	Bedrock, shale grading below into sandstone

Hole No. 30

Location: U.T.M. - 315000 East, 239000 North
SW corner Lsd. 4-31-51-24 W. 4th Mer.

Elevation: 2230 ft.

Depth (ft.)

0-10	Lacustrine clay, brownish-grey
10-26	Lacustrine silt, grey
26-30	Till, soft, brownish-grey
30-51	Till, hard, grey, stony
51-60	Bedrock, grey shale

Hole No. 31

Location: U.T.M. - 297000 East, 240000 North
SW corner Lsd. 4-36-51-25 W. 4th Mer.

Elevation: 2243 ft.

Depth (ft.)

0-20	Lacustrine clay and silty clay
20-59	Lacustrine sandy silt, grey
59-63	Sand and gravel, glacial
63-75	Till
75-100	Bedrock, shale and shaly sandstone

Hole No. 32

Location: U.T.M. - 280000 East, 240000 North
SE corner Lsd. 1-34-51-25 W. 4th Mer.

Elevation: 2247 ft.

Depth (ft.)

0-24 Lacustrine silty clay, brown
24-76 Lacustrine silty clay, greyish-brown
76-90 Bedrock, soft to hard

Hole No. 33

Location: U.T.M. - 263000 East, 242000 North
SE corner Lsd. 1-33-51-25 W. 4th Mer.

Elevation: 2239 ft.

Depth (ft.)

0-35 Lacustrine silty clay, brownish grey
to grey
35-62 Lacustrine sandy silt, very soft
62-73 Till, grey, sandy
73-80 Bedrock, shale (ice-shoved ?)
80-89 Till-bedrock mixture
89-92 Sand and gravel, glacial
92-110 Bedrock, sandy shale

Hole No. 34

Location: U.T.M. - 231000 East, 242000 North
SW corner Lsd. 4-32-51-25 W. 4th Mer.

Elevation: 2249 ft.

Depth (ft.)

0-10 Lacustrine silty clay, buff
10-30 Lacustrine sandy silt, brownish-grey
30-34 Lacustrine silty clay, grey
34-62 Till, soft, grey
62-79 Till, hard, grey, with scattered pebbles
79-100 Bedrock, grey shale, dry

Hole No. 35

Location: U.T.M. - 214000 East, 243000 North
SE corner Lsd. 1-36-51-26 W. 4th Mer.

Elevation: 2275 ft.

Depth (ft.)

0-25	Lacustrine clay and silty clay
25-68	Lacustrine sandy silt, grey
68-110	Till, sandy, grey, very soft below 78 ft.
110-120	Sand, Saskatchewan, grey, wet

Hole No. 36

Location: U.T.M. - 509000 East, 249000 North
SE corner Lsd. 1-1-52-23 W. 4th Mer.

Elevation: 2434 ft.

Depth (ft.)

0-13	Sand and gravel, glacial
13-80	Till, hard, grey
80-120	Bedrock

Hole No. 37

Location: U.T.M. - 493000 East, 250000 North
SW corner Lsd. 4-1-52-23 W. 4th Mer.

Elevation: 2425 ft.

Depth (ft.)

0-6	Lacustro-till, buff
6-18	Till, buff
18-45	Till, grey, silty, few pebbles
45-53	Sand, glacial
53-65	Till, hard, grey
65-80	Bedrock, hard shale

Hole No. 38

Location: U.T.M. - 477000 East, 250000 North
NW corner Lsd. 13-35-51-23 W. 4th Mer.

Elevation: 2411 ft.

Depth (ft.)

0-1	Sand, glacial
1-10	Till, buff
10-18	Sand, glacial, grey, wet
18-27	Till, dark grey
27-28	Sand, glacial
28-60	Till, soft, grey
60-75	Bedrock, grey shale

Hole No. 39

Location: U.T.M. - 459000 East, 250000 North
NE corner Lsd. 16-33-51-23 W. 4th Mer.

Elevation: 2397 ft.

Depth (ft.)

0-2	Lacustro-till
2-14	Till, buff
14-40	Till, dark grey, sandy
40-56	Sand, glacial, dark grey, silty
56-87	Till, grey, sandy
87-115	Bedrock, dark grey shale

Hole No. 40

Location: U.T.M. - 443000 East, 250000 North
SE corner Lsd. 1-5-52-23 W. 4th Mer.

Elevation: 2377 ft.

Depth (ft.)

0-5	Lacustro-till
5-10	Till, buff
10-25	Till, grey, silty
25-43	Till-bedrock mixture
43-70	Bedrock, soft (reworked ?) to 64 ft., hard brown carbonaceous shale at 64-70 ft.

Hole No. 41

Location: U.T.M. - 428000 East, 250000 North
E side Lsd. 16-31-51-23 W. 4th Mer.

Elevation: 2345 ft.

Depth (ft.)

0-12	Lacustro-till, buff
12-27	Till, grey, stony
27-44	Till, grey, silty to sandy
44-85	Till, grey, soft to 44 ft., hard below 44 ft.
85-90	Bedrock, shale (ice-shoved ?)
90-95	Till-bedrock mixture

Hole No. 42

Location: U.T.M. - 411000 East, 252000 North
SE corner Lsd. 1-1-52-24 W. 4th Mer.

Elevation: 2330 ft.

Depth (ft.)

0-14	Lacustro-till, greyish-brown, harder and more till-like below 10 ft.
14-55	Till, grey, sand lenses at 39-55 ft.
55-60	Sand, glacial
60-68	Till, grey
68-80	Bedrock

Hole No. 43

Location: U.T.M. - 394000 East, 252000 North
SE corner Lsd. 1-2-52-24 W. 4th Mer.

Elevation: 2289 ft.

Depth (ft.)

0-17	Lacustro-till, brownish-grey, scattered coal fragments
17-41	Till, soft, dark grey
41-43	Sand, glacial, soft, wet
43-55	Bedrock, pale grey shale, scattered concretions

Hole No. 44

Location: U.T.M. - 379000 East, 253000 North
SW corner Lsd. 4-2-52-24 W. 4th Mer.

Elevation: 2270 ft.

Depth (ft.)

0-18	Lacustro-till, brownish-grey, clay with some pebbles
18-49	Till, grey
49-60	Bedrock, sandstone with shale interbeds, scattered concretions

Hole No. 45

Location: U.T.M. - 297000 East, 257000 North
NE corner Lsd. 16-35-51-25 W. 4th Mer.

Elevation: 2259 ft.

Depth (ft.)

0-21	Till, brown
21-57	Sand, glacial, fairly clean with numerous silt lenses
57-101	Sand and gravel, glacial, dark grey, silty
101-105	Till, hard, dark grey

Hole No. 46

Location: U.T.M. - 281000 East, 257000 North
NW corner Lsd. 13-35-51-25 W. 4th Mer.

Elevation: 2265 ft.

Depth (ft.)

0-21	Lacustrine clay, grades into sandy silt towards base
21-62	Sand, glacial, medium- to coarse- grained, clean at 21-56 ft., sandy silt at 56-62 ft.
62-100	Sand and fine gravel, glacial
100-110	Till, hard, grey, with sand lenses

Hole No. 47

Location: U.T.M. - 268000 East, 257000 North
NE corner Lsd. 13-34-51-25 W. 4th Mer.

Elevation: 2223 ft.

Depth (ft.)

0-5	Fill
5-12	Lacustrine clay, brownish-grey
12-42	Lacustrine silt, sandy
42-79	Till, grey, sandy
79-115	Sand and gravel, glacial
115-120	Till, grey, sandy

Hole No. 48

Location: U.T.M. - 248000 East, 257000 North
NW corner Lsd. 13-33-51-25 W. 4th Mer.

Elevation: 2243 ft.

Depth (ft.)

0-30	Lacustrine clay, sandy, buff to brownish-grey
30-37	Lacustrine silt, sandy, soft, grey
37-50	Till, very soft, grey
50-90	Till, sandy, grey, very hard below 90 ft.

Hole No. 49

Location: U.T.M. - 232000 East, 258000 North
NW corner Lsd. 13-32-51-25 W. 4th Mer.

Elevation: 2261 ft.

Depth (ft.)

0-20	Lacustrine clay, brown
20-35	Lacustrine clay, silty, greyish-brown, very soft
35-41	Lacustrine clay, silty, dark grey, hard
41-87	Till, dark grey, very stony below 76 ft.

Hole No. 50

Location: U.T.M. - 215000 East, 259000 North
NW corner Lsd. 13-31-51-25 W. 4th Mer.

Elevation: 2270 ft.

Depth (ft.)

0-21	Lacustrine clay and silty clay
21-58	Lacustrine silt, sandy, grey
58-77	Till, sandy
77-95	Sand, Saskatchewan, grey
95-110	Bedrock, sandy shale and sandstone

Hole No. 51

Location: U.T.M. - 526000 East, 265000 North
SE corner Lsd. 1-7-52-22 W. 4th Mer.

Elevation: 2456 ft.

Depth (ft.)

0-10	Lacustro-till
10-18	Till, buff
18-47	Till, grey, stony
47-55	Bedrock, bluish-grey shaly sandstone

Hole No. 52

Location: U.T.M. - 509000 East, 265000 North
NE corner Lsd. 16-1-52-23 W. 4th Mer.

Elevation: 2420 ft.

Depth (ft.)

0-14	Lacustro-till
14-48	Till, grey, sandy with few pebbles
48-55	Bedrock, bluish-grey bentonitic sandstone

Hole No. 53

Location: U.T.M. - 494000 East, 265000 North
NW corner Lsd. 13-1-52-24 W. 4th Mer.

Elevation: 2423 ft.

Depth (ft.)

0-6	Lacustro-till
6-16	Till, buff
16-23	Till, grey, plastic
23-27	Sand and silty sand, glacial
27-84	Till, grey, scattered pebbles
84-101	Sand, glacial
101-115	Bedrock, dark grey shale

Hole No. 54

Location: U.T.M. - 476000 East, 267000 North
SE corner Lsd. 1-10-52-23 W. 4th Mer.

Elevation: 2388 ft.

Depth (ft.)

0-4	Fill
4-14	Sand, glacial, buff, silty, "dirty"
14-50	Till, dark grey, very few pebbles
50-65	Bedrock, mainly shale with few sandstone beds

Hole No. 55

Location: U.T.M. - 461000 East, 267000 North
SW corner Lsd. 4-10-52-23 W. 4th Mer.

Elevation: 2367 ft.

Depth (ft.)

0-4	Fill
4-13	Silt and organic material (Recent origin)
13-18	Till, soft, buff
18-25	Till, soft, grey, very few pebbles
25-35	Till, hard, grey, sandy and stony
35-75	Till, soft, grey, sandy, very few pebbles

Hole No. 56

Location: U.T.M. - 445000 East, 268000 North
SW corner Lsd. 4-9-52-23 W. 4th Mer.

Elevation: 2377 ft.

Depth (ft.)

0-10	Lacustro-till
10-18	Till, buff
18-32	Till, dark grey, very few pebbles
32-38	Sand, glacial, wet
38-65	Till, dark grey, few pebbles
65-115	Till, dark grey, sandy with numerous pebbles

Hole No. 57

Location: U.T.M. - 428000 East, 267000 North
NW corner Lsd. 13-5-52-23 W. 4th Mer.

Elevation: 2351 ft.

Depth (ft.)

0-10	Lacustro-till
10-16	Till, buff
16-21	Sand, glacial, brownish-grey, silty
21-82	Till, dark grey, scattered pebbles
82-105	Till, dark grey, silty
105-115	Bedrock, dark grey shale

Hole No. 58

Location: U.T.M. - 412000 East, 268000 North
NW corner Lsd. 13-6-52-23 W. 4th Mer.

Elevation: 2330 ft.

Depth (ft.)

0-4	Fill
4-6	Sand, glacial, brownish-grey
6-8	Lacustro-till
8-27	Sand, glacial, brownish-grey, slightly silty
27-60	Till, soft, grey, silty, few pebbles
60-70	Till-bedrock mixture, hard, some pebbles
70-80	Bedrock, bluish-grey bentonitic sandstone at 70-75 ft., bluish-grey shale below 75 ft.

Hole No. 59

Location: U.T.M. - 396000 East, 269000 North
SW corner Lsd. 4-12-52-24 W. 4th Mer.

Elevation: 2299 ft.

Depth (ft.)

0-12 Lacustro-till

12-30 Bedrock, bluish-grey shale, coal at
29-30 ft. (may be a bedrock push block
overlying till at depth)

Hole No. 60

Location: U.T.M. - 379000 East, 269000 North
NE corner Lsd. 16-3-52-24 W. 4th Mer.

Elevation: 2281 ft.

Depth (ft.)

0-6 Till, buff

6-10 Till-bedrock mixture

10-30 Bedrock, shale at 10-22 ft., bluish-
grey sandstone below 22 ft. (may be
a bedrock push block overlying till
at depth)

Hole No. 61

Location: U.T.M. - 281000 East, 271000 North
NE corner Lsd. 16-3-52-25 W. 4th Mer.

Elevation: 2225 ft.

Depth (ft.)

0-35 Lacustrine clay, pale brown with
scattered sand beds

35-60 Lacustrine clay, dark grey

60-73 Lacustrine silt, hard, sandy

73-78 Sand and gravel, Saskatchewan,
large pebbles

Hole No. 62

Location: U.T.M. - 248000 East, 275000 North
NW corner Lsd. 13-4-52-25 W. 4th Mer.
Elevation: 2234 ft.

Depth (ft.)

0-12	Lacustrine clay, buff
12-25	Lacustrine silt, brownish-grey, clayey
25-76	Lacustrine silt, sandy
76-85	Till, sandy silt grading to stony grey clay

Hole No. 63

Location: U.T.M. - 232000 East, 275000 North
NE corner Lsd. 16-6-52-25 W. 4th Mer.
Elevation: 2252 ft.

Depth (ft.)

0-30	Lacustrine clay, buff, grading to grey sandy silt at 30 ft.
30-48	Sand, glacial, grey, silty
48-66	Till, sandy
66-80	Sand, glacial
80-95	Till, some coal fragments
95-110	Sand, Saskatchewan, grey, fine- to coarse-grained

Hole No. 64

Location: U.T.M. - 215000 East, 276000 North
NW corner Lsd. 13-6-52-25 W. 4th Mer.
Elevation: 2285 ft.

Depth (ft.)

0-1	Lacustrine silt and organic material
1-6	Sand, glacial, silty
6-15	Lacustrine clay grading to silt below 10 ft.
15-71	Sand, glacial, very silty with scattered clay beds
71-90	Till, grey, sandy
90-95	Sand and gravel, glacial
95-108	Till, stony

Hole No. 65

Location: U.T.M. - 512000 East, 281000 North
SE corner Lsd. 1-13-52-23 W. 4th Mer.

Elevation: 2434 ft.

Depth (ft.)

0-18 Till, buff
18-53 Till, dark grey with scattered pebbles
53-60 Bedrock, dark grey shale

Hole No. 66

Location: U.T.M. - 495000 East, 281000 North
NW corner Lsd. 13-12-52-23 W. 4th Mer.

Elevation: 2413 ft.

Depth (ft.)

0-6 Lacustro-till
6-16 Till, hard, buff
16-25 Till, hard, dark grey, few pebbles
25-32 Bedrock, reworked (?) shale at 25-32
ft., bluish-grey shale below 32 ft.

Hole No. 67

Location: U.T.M. - 479000 East, 282000 North
NW corner Lsd. 13-11-52-23 W. 4th Mer.

Elevation: 2418 ft.

Depth (ft.)

0-12 Till, hard, buff
12-41 Till, hard, grey
41-55 Bedrock, dark brownish-grey shale at
41-53 ft., bluish-grey sandstone below
53 ft.

Hole No. 68

Location: U.T.M. - 462000 East, 282000 North
NW corner Lsd. 13-10-52-23 W. 4th Mer.

Elevation: 2427 ft.

Depth (ft.)

0-7	Lacustro-till
7-13	Till, buff
13-43	Till, fairly hard, grey, numerous pebbles
43-60	Bedrock, bluish-grey sandstone

Hole No. 69

Location: U.T.M. - 446000 East, 284000 North
SW corner Lsd. 4-16-52-23 W. 4th Mer.

Elevation: 2365 ft.

Depth (ft.)

0-12	Lacustro-till, soft, silty
12-18	Till, buff
18-40	Till, soft, dark grey, scattered pebbles
40-62	Till, hard, brownish-grey, coal fragments
62-70	Bedrock, dark grey shale

Hole No. 70

Location: U.T.M. - 429000 East, 283000 North
NW corner Lsd. 13-8-52-23 W. 4th Mer.

Elevation: 2328 ft.

Depth (ft.)

0-7	Fill (?), silty clay with abundant organic material
7-12	Lacustro-till
12-18	Till, buff
18-38	Till, dark grey with scattered pebbles
38-47	Sand, glacial, silty, wet
47-78	Till-bedrock mixture, scattered pebbles
78-115	Bedrock, dark grey shale

Hole No. 71

Location: U.T.M. - 412000 East, 285000 North
SW corner Lsd. 4-18-52-23 W. 4th Mer.

Elevation: 2300 ft.

Depth (ft.)

0-8	Lacustrine clay, silty
8-18	Till, hard, buff
18-94	Sand, glacial, silty, brownish-grey and wet at 18-25 ft., dry and grey below 25 ft.
94-97	Till, dark grey
97-99	Bedrock, dark grey

Hole No. 72

Location: U.T.M. - 397000 East, 290000 North
NW corner Lsd. 4-13-52-24 W. 4th Mer.

Elevation: 2241 ft.

Depth (ft.)

0-12	Lacustrine clay, brownish-grey
12-27	Till, hard, buff, few pebbles
27-51	Till, hard, grey
51-60	Bedrock, dark grey shale

Hole No. 73

Location: U.T.M. - 379000 East, 286000 North
NE corner Lsd. 16-10-52-24 W. 4th Mer.

Elevation: 2267 ft.

Depth (ft.)

0-10	Lacustro-till
10-16	Till, buff
16-30	Bedrock, bluish-grey shale

Hole No. 74

Location: U.T.M. - 282000 East, 286000 North
NW corner Lsd. 12-11-52-25 W. 4th Mer.

Elevation: 2227 ft.

Depth (ft.)

0-15	Lacustro-till, pale brown, few pebbles
15-74	Sand, glacial, generally silty with scattered beds of silt (or "turbidite") and clean sand
74-105	Till-bedrock mixture with few pebbles
105-115	Bedrock

Hole No. 75

Location: U.T.M. - 249000 East, 291000 North
SW corner Lsd. 4-16-52-25 W. 4th Mer.

Elevation: 2242 ft.

Depth (ft.)

0-8	Lacustrine clay, buff
8-18	Lacustrine silt, soft, sandy
18-57	Sand, glacial, soft, grey, very silty
57-110	Till, dark grey with shale and coal fragments

Hole No. 76

Location: U.T.M. - 233000 East, 291000 North
NW corner Lsd. 13-8-52-25 W. 4th Mer.

Elevation: 2272 ft.

Depth (ft.)

0-11	Lacustrine clay, buff
11-30	Lacustrine silt, grey, sandy
30-63	Sand, glacial, very soft, silty
63-100	Till, soft, grey grading to hard, grey, dry till

Hole No. 77

Location: U.T.M. - 217000 East, 291000 North
SW corner Lsd. 4-18-52-25 W. 4th Mer.

Elevation: 2335 ft.

Depth (ft.)

0-90 Sand, glacial, brown, silty, fine- and even-grained
90-110 Lacustrine silt, dark grey, very hard at 97-110 ft.

Hole No. 78

Location: U.T.M. - 511000 East, 297000 North
NE corner Lsd. 16-13-52-23 W. 4th Mer.

Elevation: 2435 ft.

Depth (ft.)

0-54 Till, buff at 0-21 ft., dark grey at 21-41 ft., brown below 41 ft.
54-56 Bedrock (erratic ?), black carbonaceous shale
56-61 Till-bedrock mixture
61-65 Bedrock, brownish-grey shale

Hole No. 79

Location: U.T.M. - 493000 East, 298000 North
NE corner Lsd. 16-14-52-23 W. 4th Mer.

Elevation: 2453 ft.

Depth (ft.)

0-16 Till, buff
16-18 Bedrock (erratic ?), carbonaceous clayey shale
18-21 Till-bedrock mixture
21-30 Bedrock, grey shaly sandstone

Hole No. 80

Location: U.T.M. - 478000 East, 299000 North
SE corner Lsd. 1-22-52-23 W. 4th Mer.

Elevation: 2448 ft.

Depth (ft.)

0-74 Till, buff at 0-14 ft., hard and dark
grey at 14-43 ft., hard and brown below
43 ft.

74-80 Bedrock, grey shale

Hole No. 81

Location: U.T.M. - 462000 East, 299000 North
SW corner Lsd. 4-22-52-23 W. 4th Mer.

Elevation: 2423 ft.

Depth (ft.)

0-16 Till, buff

16-66 Till, hard, dark grey

66-75 Bedrock, bluish-grey sandstone at 66-74
ft., brown shale below 74 ft.

Hole No. 82

Location: U.T.M. - 445000 East, 300000 North
SE corner Lsd. 1-20-52-23 W. 4th Mer.

Elevation: 2350 ft.

Depth (ft.)

0-9 Lacustro-till

9-24 Till, dark grey

24-35 Bedrock, bluish-grey shaly sandstone

Hole No. 83

Location: U.T.M. - 429000 East, 301000 North
SW corner Lsd. 4-20-52-23 W. 4th Mer.

Elevation: 2296 ft.

Depth (ft.)

0-7	Lacustro-till
7-17	Till, buff
17-31	Till, dark grey
31-40	Bedrock, bluish-grey bentonitic sandstone

Hole No. 84

Location: U.T.M. - 412000 East, 300000 North
NE corner Lsd. 16-13-52-24 W. 4th Mer.

Elevation: 2262 ft.

Depth (ft.)

0-8	Lacustro-till
8-20	Till, buff
20-77	Till, bluish-grey
77-85	Bedrock, green to yellowish shale

Hole No. 85

Location: U.T.M. - 396000 East, 301000 North
NE corner Lsd. 16-14-52-24 W. 4th Mer.

Elevation: 2255 ft.

Depth (ft.)

0-7	Lacustrine clay, brownish-grey
7-17	Till, buff
17-33	Sand, glacial, brownish-grey
33-50	Till, hard, dark grey
50-85	Bedrock, bluish-grey sandstone, rather soft

Hole No. 86

Location: U.T.M. - 380000 East, 301000 North
NE corner Lsd. 16-15-52-24 W. 4th Mer.

Elevation: 2216 ft.

Depth (ft.)

0-12	Lacustro-till
12-21	Sand, glacial, brownish-grey
21-83	Till, hard
83-115	Bedrock, pale grey shale

Hole No. 87

Location: U.T.M. - 249000 East, 307000 North
SW corner Lsd. 4-21-52-24 W. 4th Mer.

Elevation: 2242 ft.

Depth (ft.)

0-11	Lacustrine clay, buff, some sandy lenses
11-47	Lacustrine silt, grey, sandy
47-64	Till, grey, silty
64-75	Bedrock, grey shale

Hole No. 88

Location: U.T.M. - 233000 East, 307000 North
NE corner Lsd. 16-18-52-25 W. 4th Mer.

Elevation: 2269 ft.

Depth (ft.)

0-14	Lacustrine clay, buff
14-54	Sand, glacial, grey, silty
54-80	Till, grey, sandy, scattered pebbles
80-100	Till, grey, hard, some bedrock fragments
100-110	Sand, glacial, grey

Hole No. 89

Location: U.T.M. - 217000 East, 307000 North
NW corner Lsd. 13-18-52-25 W. 4th Mer.

Elevation: 2301 ft.

Depth (ft.)

0-93 Lacustrine silt and sandy silt, brown, quite
hard at 51-80 ft.
93-95 Till-bedrock mixture
95-105 Bedrock, hard bentonitic sandstone

Hole No. 90

Location: U.T.M. - 512000 East, 313000 North
NE corner Lsd. 16-24-52-23 W. 4th Mer.

Elevation: 2440 ft.

Depth (ft.)

0-18 Till, buff
18-23 Sand, glacial, silty, brownish-grey
23-52 Till, dark grey
52-65 Bedrock, shale

Hole No. 91

Location: U.T.M. - 495000 East, 313000 North
NW corner Lsd. 13-24-52-23 W. 4th Mer.

Elevation: 2426 ft.

Depth (ft.)

0-16 Till, buff
16-47 Till, grey
47-57 Till-bedrock mixture
57-74 Bedrock, grey shale at 57-71 ft.,
bluish-grey sandstone below 71 ft.

Hole No. 92

Location: U.T.M. - 478000 East, 314000 North
NE corner Lsd. 16-22-52-23 W. 4th Mer.

Elevation: 2417 ft.

Depth (ft.)

0-12	Till, buff
12-45	Till, grey
45-57	Till, brown
57-70	Bedrock, sandstone at 57-60 ft., shale at 60-68 ft., sandstone below 68 ft.

Hole No. 93

Location: U.T.M. - 462000 East, 314000 North
NW corner Lsd. 13-22-52-23 W. 4th Mer.

Elevation: 2382 ft.

Depth (ft.)

0-11	Till, buff
11-15	Lacustrine clay, dark grey
15-25	Till, grey
25-87	Till, brown
87-105	Bedrock, sandstone at 87-92 ft., shale below 92 ft.

Hole No. 94

Location: U.T.M. - 447000 East, 315000 North
NW corner Lsd. 13-21-52-23 W. 4th Mer.

Elevation: 2335 ft.

Depth (ft.)

0-4	Sand, glacial
4-7	Lacustrine clay, silty to sandy
7-15	Sand, glacial, silty, brownish-grey
15-34	Till, grey
34-74	Sand, glacial, brownish-grey
74-115	Bedrock, soft bluish-grey sandstone

Hole No. 95

Location: U.T.M. - 430000 East, 316000 North
NW corner Lsd. 13-20-52-23 W. 4th Mer.

Elevation: 2275 ft.

Depth (ft.)

0-20 Till, buff
20-50 Till, grey
50-60 Bedrock, grey shale at 50-53 ft.,
sandstone below 53 ft.

Hole No. 96

Location: U.T.M. - 414000 East, 317000 North
NW corner Lsd. 13-19-52-23 W. 4th Mer.

Elevation: 2224 ft.

Depth (ft.)

0-12 Lacustrine clay, sandy below 7 ft.
12-16 Till, buff
16-87 Till, grey, sand and gravel at 53-56 ft.
87-100 Bedrock, greenish-grey shale

Hole No. 97

Location: U.T.M. - 398000 East, 318000 North
NW corner Lsd. 13-24-52-24 W. 4th Mer.

Elevation: 2209 ft.

Depth (ft.)

0-17 Lacustrine silty clay
17-21 Sand, glacial, brownish-grey
21-64 Till, grey
64-84 Bedrock, grey shale at 64-83 ft.,
coal at 83-84 ft.

Hole No. 98

Location: U.T.M. - 234000 East, 323000 North
SW corner Lsd. 4-29-52-25 W. 4th Mer.

Elevation: 2268 ft.

Depth (ft.)

0-16 Lacustrine clay, buff, sandy silt below
14 ft.

16-76 Sand, glacial, silty, grey, gravel at
55-57 ft.

76-88 Bedrock, grey shale

Hole No. 99

Location: U.T.M. - 217000 East, 324000 North
NW corner Lsd. 13-19-52-25 W. 4th Mer.

Elevation: 2299 ft.

Depth (ft.)

0-2 Gravel, glacial, poorly sorted

2-10 Lacustrine clay, buff

10-94 Sand, glacial, silty with scattered clay beds

94-98 Till

98-110 Bedrock

Hole No. 100

Location: U.T.M. - 512000 East, 329000 North
NE corner Lsd. 16-25-52-23 W. 4th Mer.

Elevation: 2350 ft.

Depth (ft.)

0-12 Lacustro-till, brown, sandy

12-39 Till, dark grey, sandy

39-47 Sand and gravel, glacial, mainly sand with
a few gravel beds

47-70 Bedrock, bentonitic

Hole No. 101

Location: U.T.M. - 497000 East, 331000 North
SE corner Lsd. 1-35-52-23 W. 4th Mer.

Elevation: 2386 ft.

Depth (ft.)

0-15	Till, buff
15-30	Till, grey
30-33	Sand and gravel, glacial, brownish-grey, dry
33-40	Sand, glacial, silty, wet
40-69	Gravel, glacial, fine, very "dirty"
69-85	Till, grey

Hole No. 102

Location: U.T.M. - 478000 East, 330000 North
NE corner Lsd. 16-27-52-23 W. 4th Mer.

Elevation: 2360 ft.

Depth (ft.)

0-4	Lacustro-till, clayey
4-17	Till, buff
17-40	Till, hard, grey
40-70	Till, soft, grey
70-75	Sand and gravel, glacial
75-81	Silt, glacial, with sand and gravel lenses, brownish-grey
81-100	Bedrock, bluish-grey sandstone

Hole No. 103

Location: U.T.M. - 463000 East, 332000 North
SW corner Lsd. 4-34-52-23 W. 4th Mer.

Elevation: 2346 ft.

Depth (ft.)

0-5	Lacustrine clay, black, organic
5-15	Till, buff
15-48	Till, grey
48-60	Silt, glacial, brownish-grey
60-84	Till, hard, grey, stony
84-115	Bedrock, interbedded sandstone and shale

Hole No. 104

Location: U.T.M. - 430000 East, 333000 North
SW corner Lsd. 4-32-52-23 W. 4th Mer.

Elevation: 2283 ft.

Depth (ft.)

0-12	Till, buff
12-20	Bedrock, shale (may be a bedrock push block overlying till at depth)

Hole No. 105

Location: U.T.M. - 409000 East, 333000 North
SE corner Lsd. 1-36-52-24 W. 4th Mer.

Elevation: 2185 ft.

Depth (ft.)

0-16	Lacustrine clay
16-75	Till, grey
75-80	Silt, glacial, sandy
80-105	Till, grey

Hole No. 106

Location: U.T.M. - 398000 East, 334000 North
SW corner Lsd. 4-36-52-24 W. 4th Mer.

Elevation: 2180 ft.

Depth (ft.)

0-15	Lacustrine clay
15-27	Till, buff grading to grey
27-69	Sand, glacial, brownish-grey at 27-40 ft., grey below 40 ft with some gravel at 50 ft.
69-85	Bedrock, coal at 69-72 ft., greenish-grey shale below 72 ft.

Hole No. 107

Location: U.T.M. - 251000 East, 339000 North
SE corner Lsd. 1-32-52-25 W. 4th Mer.

Elevation: 2231 ft.

Depth (ft.)

0-15	Lacustrine clay, brownish-grey
15-23	Lacustrine silt, sandy, soft, brownish-grey
23-49	Till, dark grey
49-70	Bedrock, grey sandy shale

Hole No. 108

Location: U.T.M. - 235000 East, 339000 North
NW corner Lsd. 13-29-52-25 W. 4th Mer.

Elevation: 2255 ft.

Depth (ft.)

0-20	Lacustrine clay, buff
20-46	Lacustrine silt, sandy, wet
46-61	Till, soft, numerous pebbles, becoming quite stony below 51 ft.
61-85	Bedrock, greyish-brown shale with scattered concretions

Hole No. 109

Location: U.T.M. - 218000 East, 340000 North
NW corner Lsd. 13-30-52-25 W. 4th Mer.

Elevation: 2302 ft.

Depth (ft.)

0-13	Sand, glacial, silty
13-75	Lacustrine sand and silt, some clay beds
75-100	Sand, glacial, medium- to coarse-grained

Hole No. 110

Location: U.T.M. - 511000 East, 347000 North
SE corner Lsd. 1-1-53-23 W. 4th Mer.

Elevation: 2406 ft.

Depth (ft.)

0-12	Till, brown
12-31	Till-bedrock mixture at 12-16 ft., till with bedrock fragments below 16 ft.
31-86	Sand, Saskatchewan, grey and wet at 31-60 ft., silty below 60 ft.
86-90	Bedrock, sandstone, hard bed at base

Hole No. 111

Location: U.T.M. - 497000 East, 347000 North
SW corner Lsd. 4-1-53-23 W. 4th Mer.

Elevation: 2373 ft.

Depth (ft.)

0-18	Till, buff
18-115	Till, grey

Hole No. 112

Location: U.T.M. - 479000 East, 348000 North
SE corner Lsd. 1-3-53-23 W. 4th Mer.

Elevation: 2348 ft.

Depth (ft.)

0-16	Till, brown
16-55	Till, grey
55-80	Sand, glacial, grey, wet
80-105	Bedrock, bentonitic at 80-95 ft.

Hole No. 113

Location: U.T.M. - 463000 East, 348000 North
SE corner Lsd. 1-4-53-23 W. 4th Mer.

Elevation: 2302 ft.

Depth (ft.)

0-7	Lacustro-till
7-14	Till, brown
14-31	Till, grey
31-32	Sand, glacial, grey, wet
32-	Bedrock, grey sandstone

Hole No. 114

Location: U.T.M. - 447000 East, 349000 North
NE corner Lsd. 16-32-52-23 W. 4th Mer.

Elevation: 2255 ft.

Depth (ft.)

0-8	Lacustro-till, dry silty clay
8-16	Till, brown
16-21	Till, grey, scattered pebbles
21-42	Sand, Saskatchewan, grey, wet
42-50	Bedrock, grey shale

Hole No. 115

Location: U.T.M. - 431000 East, 348000 North
NW corner Lsd. 13-32-52-23 W. 4th Mer.

Elevation: 2223 ft.

Depth (ft.)

0-6	Lacustro-till, buff
6-12	Lacustrine clay, dark grey
12-28	Sand, Saskatchewan, brownish grey at 12-14 ft., orange-colored at 14-28 ft., silty below 18 ft.
28-40	Bedrock, grey shale

Hole No. 116

Location: U.T.M. - 252000 East, 355000 North
NW corner Lsd. 13-33-52-25 W. 4th Mer.

Elevation: 2236 ft.

Depth (ft.)

0-37 Lacustrine clay, dark grey, soft and silty
with fine sand interbeds below 21 ft.

37-56 Till, soft, grey, silty

56-75 Bedrock, greenish-grey sandy shale

Hole No. 117

Location: U.T.M. - 236000 East, 355000 North
NW corner Lsd. 13-32-52-25 W. 4th Mer.

Elevation: 2255 ft.

Depth (ft.)

0-23 Lacustrine clay

23-48 Lacustrine silt, few pebbles at 46-48 ft.

48-57 Sand and gravel, glacial

57-62 Gravel, glacial

62-70 Bedrock, hard siltstone

Hole No. 118

Location: U.T.M. - 512000 East, 363000 North
SE corner Lsd. 1-12-53-23 W. 4th Mer.

Elevation: 2290 ft.

Depth (ft.)

0-18 Till, buff

18-95 Till, brown

Hole No. 119

Location: U.T.M. - 496000 East, 363000 North
SE corner Lsd. 1-11-53-23 W. 4th Mer.

Elevation: 2284 ft.

Depth (ft.)

0-60	Till, buff, grey at 17-60 ft.
60-75	Till, soft, brown, with few pebbles
75-115	Till, brown

Hole No. 120

Location: U.T.M. - 480000 East, 363000 North
NE corner Lsd. 16-3-53-23 W. 4th Mer.

Elevation: 2280 ft.

Depth (ft.)

0-14	Lacustrine clay
14-21	Till, buff
21-30	Till, grey
30-40	Bedrock, grey shale

Hole No. 121

Location: U.T.M. - 463000 East, 365000 North
SE corner Lsd. 1-9-53-23 W. 4th Mer.

Elevation: 2243 ft.

Depth (ft.)

0-11	Till, buff
11-14	Sand, glacial, brownish-grey wet
14-18	Till
18-65	Sand, Saskatchewan, bluish-grey

Hole No. 122

Location: U.T.M. - 447000 East, 365000 North
NE corner Lsd. 16-5-53-23 W. 4th Mer.

Elevation: 2220 ft.

Depth (ft.)

0-7	Lacustro-till, clayey
7-21	Till, buff
21-75	Till, grey
75-98	Sand and gravel, Saskatchewan, brownish-grey
98-102	Bedrock, grey shale

Hole No. 123

Location: U.T.M. - 431000 East, 365000 North
NW corner Lsd. 13-5-53-23 W. 4th Mer.

Elevation: 2192 ft.

Depth (ft.)

0-10	Till, buff
10-20	Bedrock, reworked
20-30	Bedrock, grey shale

Hole No. 124

Location: U.T.M. - 252000 East, 371000 North
NE corner Lsd. 16-5-53-25 W. 4th Mer.

Elevation: 2235 ft.

Depth (ft.)

0-23	Lacustrine clay
23-36	Lacustrine clay, silty
36-58	Till, hard, stony
58-68	Bedrock (ice-shoved ?)
68-89	Sand and gravel, glacial, largely sand at 68-72 ft., gravel at 72-89 ft.
89-103	Bedrock, hard shale

Hole No. 125

Location: U.T.M. - 235000 East, 372000 North
SE corner Lsd. 1-7-53-25 W. 4th Mer.

Elevation: 2252 ft.

Depth (ft.)

0-16	Lacustrine clay, silty, with pebbles at 8-16 ft.
16-65	Lacustrine silt to silty clay, soft below 28 ft.
65-71	Till
71-80	Bedrock, hard

Hole No. 126

Location: U.T.M. - 514000 East, 377000 North
NE corner Lsd. 16-12-53-23 W. 4th Mer.

Elevation: 2225 ft.

Depth (ft.)

0-11	Lacustrine clay
11-20	Till, buff
20-45	Till, brown, soft to mushy below 30 ft.
45-75	Bedrock, coal at 45-60 ft., grey shale below 60 ft.

Hole No. 127

Location: U.T.M. - 496000 East, 380000 North
SE corner Lsd. 1-14-53-23 W. 4th Mer.

Elevation: 2222 ft.

Depth (ft.)

0-16	Till, buff
16-26	Till, brown
26-35	Lacustrine clay, sandy interbeds
35-40	Lacustrine sand, brown, clayey
40-45	Lacustrine clay
45-85	Till, brown, silty
85-100	Sand and gravel, glacial
100-109	Gravel, glacial
109-115	Silty clay, glacial

Hole No. 128

Location: U.T.M. - 481000 East, 380000 North
SW corner Lsd. 4-14-53-23 W. 4th Mer.

Elevation: 2217 ft.

Depth (ft.)

0-20	Till, buff
20-35	Till, brown
35-40	Silty clay, glacial, some organic material
40-46	Till, grey
46-63	Sand, glacial, clayey at 46-55 ft., rust-colored sand below 55 ft.
63-75	Bedrock, greenish-grey shale

Hole No. 129

Location: U.T.M. - 465000 East, 380000 North
SW corner Lsd. 4-15-53-23 W. 4th Mer.

Elevation: 2201 ft.

Depth (ft.)

0-12	Lacustrine clay, scattered pebbles
12-18	Till, buff
18-30	Bedrock, brown shale, possibly a push block

Hole No. 130

Location: U.T.M. - 449000 East, 381000 North
SW corner Lsd. 4-16-53-23 W. 4th Mer.

Elevation: 2173 ft.

Depth (ft.)

0-1	Lacustrine clay
1-27	Till, buff, brownish with few pebbles at 17-27 ft.
27-50	Till, greyish-brown
50-63	Sand and gravel, glacial, brownish-grey, largely gravel at 60-63 ft.
63-65	Bedrock, hard grey shale

Hole No. 131

Location: U.T.M. - 253000 East, 288000 North
SW corner Lsd. 4-16-53-25 W. 4th Mer.

Elevation: 2230 ft.

Depth (ft.)

0-13	Lacustrine clay
13-33	Lacustrine sandy silt, grey
33-38	Sand, glacial
38-75	Till, soft at 50-75 ft.
75-85	Sand and gravel, glacial

Hole No. 132

Location: U.T.M. - 237000 East, 388000 North
SE corner Lsd. 1-18-53-25 W. 4th Mer.

Elevation: 2243 ft.

Depth (ft.)

0-44	Lacustrine clay, silty
44-66	Sand, glacial, hard and clean at 55-66 ft.
66-75	Bedrock, concretionary at 66-68 ft.

Hole No. 133

Location: U.T.M. - 514000 East, 395000 North
SE corner Lsd. 1-24-53-23 W. 4th Mer.

Elevation: 2178 ft.

Depth (ft.)

0-17	Till, buff
17-21	Bedrock, shale, possibly a push block

Hole No. 134

Location: U.T.M. - 498000 East, 395000 North
NW corner Lsd. 13-13-53-23 W. 4th Mer.

Elevation: 2219 ft.

Depth (ft.)

0-6	Till, buff
6-20	Bedrock, sandy shale, possibly a push block

Hole No. 135

Location: U.T.M. - 481000 East, 396000 North
SW corner Lsd. 4-23-53-23 W. 4th Mer.

Elevation: 2172 ft.

Depth (ft.)

0-1	Lacustrine clay
1-20	Till, buff
20-25	Lacustrine clay, brownish-grey
25-40	Till, brownish-grey
40-44	Lacustrine clay, dark grey
44-50	Bedrock, dark grey shale (ice-shoved ?)
50-55	Till, silty
55-95	Sand and gravel, glacial, brownish-grey
95-103	Bedrock, sandstone

Hole No. 136

Location: U.T.M. - 464000 East, 396000 North
NE corner Lsd. 16-16-53-23 W. 4th Mer.

Elevation: 2136 ft.

Depth (ft.)

0-20	Till, buff
20-25	Lacustro-till, clayey, brownish-grey
25-32	Silt, glacial, grey, sandy to clayey
32-38	Till, dark grey
38-50	Bedrock, shaly sandstone

Hole No. 137

Location: U.T.M. - 448000 East, 398000 North
SE corner Lsd. 1-20-53-23 W. 4th Mer.

Elevation: 2116 ft.

Depth (ft.)

0-8	Sand and gravel, Recent, river terrace deposit
8-17	Lacustrine clay
17-22	Till, buff
22-32	Sand, glacial, brownish-grey, some gravel at 22-32 ft.
32-44	Silt, glacial, sandy
44-47	Lacustrine clay
47-115	Sand and gravel, Saskatchewan, "dirty" sand and gravel at 47-60 ft., fine grey sand at 60-97 ft., silty sand and gravel at 97-115 ft.

Hole No. 138

Location: U.T.M. - 253000 East, 403000 North
NW corner Lsd. 13-16-53-25 W. 4th Mer.

Elevation: 2236 ft.

Depth (ft.)

0-10	Lacustrine clay, silty, buff
10-16	Lacustrine silt, sandy, grey
16-58	Sand, glacial, silty, brownish-grey, wet below 40 ft.
58-75	Till
75-80	Sand, glacial
80-90	Till, grey, sandy
90-100	Sand and gravel, glacial

Hole No. 139

Location: U.T.M. - 237000 East, 404000 North
NW corner Lsd. 13-17-53-25 W. 4th Mer.

Elevation: 2214 ft.

Depth (ft.)

0-75 Lacustrine clay, silty with few sand
interbeds

75-110 Sand, glacial, medium to coarse grained,
large coal fragments

Hole No. 140

Location: U.T.M. - 514000 East, 410000 North
NE corner Lsd. 16-24-53-23 W. 4th Mer.

Elevation: 2143 ft.

Depth (ft.)

0-1 Lacustrine clay

1-20 Till, buff

20-32 Till, grey

32-42 Bedrock, soft sandstone (ice-shoved?)

42-50 Till, grey

50-55 Bedrock, sandstone at 50-51 ft.,
shale below 51 ft.

Hole No. 141

Location: U.T.M. - 498000 East, 412000 North
SW corner Lsd. 4-25-53-23 W. 4th Mer.

Elevation: 2105 ft.

Depth (ft.)

0-15 Till, buff

15-50 Till, grey

50-75 Bedrock, grey shale

Hole No. 142

Location: U.T.M. - 482000 East, 411000 North
NW corner Lsd. 13-23-53-23 W. 4th Mer.

Elevation: 2119 ft.

Depth (ft.)

0-6	Till, buff
6-11	Lacustrine clay
11-20	Sand and gravel, glacial, orange-colored, sand at 11-15 ft., sand and gravel at 15-20 ft.
20-32	Sand and gravel, glacial, grey, sand at 20-25 ft., sand and gravel at 25-32 ft.
32-40	Bedrock, grey sandy shale

Hole No. 143

Location: U.T.M. - 465000 East, 413000 North
SW corner Lsd. 4-27-53-23 W. 4th Mer.

Elevation: 2020 ft.

Depth (ft.)

0-8	Silt, Recent river deposit
8-28	Sand and gravel, Recent, river terrace deposits, sand at 8-20 ft., sand and gravel at 20-28 ft.
28-40	Bedrock, highly bentonitic shale at 28-35 ft., carbonaceous shale below 35 ft.

Hole No. 144

Location: U.T.M. - 449000 East, 413000 North
SW corner Lsd. 4-28-53-23 W. 4th Mer.

Elevation: 2032 ft.

Depth (ft.)

0-5	Silt, Recent river deposit
5-37	Sand and gravel, Recent, river terrace deposits, sand from 5-25 ft., sand and gravel from 25-37 ft.
37-45	Bedrock, bentonitic shale, scattered sandstone beds

Hole No. 145

Location: U.T.M. - 253000 East, 420000 North
SE corner Lsd. 1-29-53-25 W. 4th Mer.

Elevation: 2219 ft.

Depth (ft.)

0-14	Lacustrine clay, grey, silty at 6-14 ft.
14-38	Lacustrine silt, sandy
38-69	Sand, glacial, silty
69-120	Till, grey

Hole No. 146

Location: U.T.M. - 516000 East, 472000 North
NE corner Lsd. 16-25-53-23 W. 4th Mer.

Elevation: 2143 ft.

Depth (ft.)

0-6	Sand, glacial, brownish-grey
6-12	Lacustrine clay, sandy
12-21	Sand, glacial, brownish-grey, with gravel at 17-21 ft.
21-30	Till, sandy, many pebbles
30-40	Sand and gravel, Saskatchewan
40-55	Bedrock, grey shale

Hole No. 147

Location: U.T.M. - 498000 East, 428000 North
SE corner Lsd. 1-35-53-23 W. 4th Mer.

Elevation: 2102 ft.

Depth (ft.)

0-8	Lacustrine clay
8-35	Till, buff
35-64	Till, grey
64-67	Till-bedrock mixture
67-72	Bedrock, grey shale

Hole No. 148

Location: U.T.M. - 485000 East, 428000 North
SE corner Lsd. 4-35-53-23 W. 4th Mer.

Elevation: 2093 ft.

Depth (ft.)

0-4	Lacustrine clay, silty
4-28	Sand, glacial, brownish-grey
28-35	Till, grey
35-48	Sand, glacial, silty
48-53	Till
53-65	Bedrock, brownish-grey shale grading to bluish-grey bentonitic shale

Hole No. 149

Location: U.T.M. - 449000 East, 428000 North
NE corner Lsd. 16-29-53-23 W. 4th Mer.

Elevation: 2109 ft.

Depth (ft.)

0-13	Lacustrine clay, sandy
13-30	Till, buff, silty
30-72	Till, grey
72-110	Sand, Saskatchewan, grey

Hole No. 150

Location: U.T.M. - 433000 East, 429000 North
NE corner Lsd. 16-30-53-23 W. 4th Mer.

Elevation: 2126 ft.

Depth (ft.)

0-3	Soil, black, organic
3-14	Lacustrine clay
14-78	Till, grey, pebbles increase in number and size with depth
78-110	Sand, Saskatchewan, grey dry

Hole No. 151

Location: U.T.M. - 417000 East, 429000 North
NE corner Lsd. 16-25-53-24 W. 4th Mer.

Elevation: 2139 ft.

Depth (ft.)

0-20	Lacustrine clay, grey, grading to silty brown clay towards base
20-25	Till, brown, sandy and silty
25-35	Till, grey, stony
35-60	Till, grey
60-110	Sand, Saskatchewan, grey at 60-70 ft., brownish-grey below 70 ft.

Hole No. 152

Location: U.T.M. - 401000 East, 431000 North
SE corner Lsd. 1-35-53-24 W. 4th Mer.

Elevation: 2231 ft.

Depth (ft.)

0-14	Till, brown, fine sand lenses
14-30	Bedrock, coal at 14-22 ft., grey shale below 22 ft., possibly a push block

Hole No. 153

Location: U.T.M. - 384000 East, 431000 North
NE corner Lsd. 16-27-53-24 W. 4th Mer.

Elevation: 2256 ft.

Depth (ft.)

0-11	Lacustrine clay, brown
11-13	Sand, glacial, brown
13-30	Till, dark brown to black
30-35	Till, brownish-grey, silty clay
35-46	Till-bedrock mixture, sand lenses at 35-46 ft.
46-53	Bedrock, hard and dry

Hole No. 154

Location: U.T.M. - 368000 East, 431000 North
NE corner Lsd. 16-28-53-24 W. 4th Mer.

Elevation: 2240 ft.

Depth (ft.)

0-11	Lacustrine clay, brown
11-28	Till, hard, brown, grading to hard, dark grey till at 26 ft.
28-48	Till-bedrock mixture
48-60	Bedrock, hard

Hole No. 155

Location: U.T.M. - 352000 East, 433000 North
SE corner Lsd. 1-32-53-24 W. 4th Mer.

Elevation: 2219 ft.

Depth (ft.)

0-12	Lacustrine clay
12-15	Till, buff
15-25	Sand and gravel, glacial, grading to gravel below 22 ft.
25-42	Till, grey, coal and shale fragments
42-84	Bedrock, coal-shale mixture at 42-50 ft., shale at 50-60 ft., bentonitic sandstone at 60-70 ft., grey shale below 70 ft. (ice-shoved?)
84-100	Till, sandy below 90 ft.
100-105	Bedrock, bentonitic sandstone

Hole No. 156

Location: U.T.M. - 336000 East, 433000 North
SE corner Lsd. 1-31-53-24 W. 4th Mer.

Elevation: 2199 ft.

Depth (ft.)

0-13	Lacustrine clay
13-20	Till, buff
20-110	Till, soft, grey, sandy at 62-68 ft., very clayey at 68-80 ft.

Hole No. 157

Location: U.T.M. - 320000 East, 433000 North
SW corner Lsd. 4-31-53-24 W. 4th Mer.

Elevation: 2235 ft.

Depth (ft.)

0-16	Lacustrine clay, soft, becoming sandy towards base
16-41	Till, grey
41-48	Bedrock, sandstone (ice-shoved ?)
48-64	Till, dark grey
64-75	Bedrock, dark grey shale

Hole No. 158

Location: U.T.M. - 303000 East, 434000 North
SW corner Lsd. 4-36-53-25 W. 4th Mer.

Elevation: 2227 ft.

Depth (ft.)

0-3	Fill
3-35	Lacustrine clay, soft, silty at 20-35 ft.
35-50	Till, clay-bedrock mixture
50-55	Bedrock, dry brownish-grey shale

Hole No. 159

Location: U.T.M. - 287000 East, 435000 North
NE corner Lsd. 16-27-53-25 W. 4th Mer.

Elevation: 2251 ft.

Depth (ft.)

0-15	Lacustrine clay, silty with some sand
15-32	Sand, glacial, uniformly silty and fine-grained
32-50	Sand, glacial, very soft and dirty, minor gravel
50-60	Bedrock, grey shaly sandstone at 50-55 ft., greenish-grey shale below 55 ft.

Hole No. 160

Location: U.T.M. - 516000 East, 443000 North
NE corner Lsd. 16-36-53-23 W. 4th Mer.

Elevation: 2093 ft.

Depth (ft.)

0-10	Lacustrine clay
10-15	Till, buff
15-55	Till, grey, fewer pebbles towards base
55-85	Sand, glacial, brownish-grey, wet, "dirty" some gravel
85-93	Bedrock, grey shale

Hole No. 161

Location: U.T.M. - 499000 East, 444000 North
SW corner Lsd. 4-1-54-23 W. 4th Mer.

Elevation: 2082 ft.

Depth (ft.)

0-1	Sand
1-10	Lacustro-till, buff
10-23	Till, buff
23-25	Sand, glacial, "dirty"
25-32	Till, grey
32-35	Lacustrine clay
35-65	Till, very sandy
65-107	Sand and gravel, Saskatchewan, mainly dirty sand at 65-100 ft., sand and gravel below 100 ft.

Hole No. 162

Location: U.T.M. - 483000 East, 445000 North
SW corner Lsd. 4-2-54-23 W. 4th Mer.

Elevation: 2020 ft.

Depth (ft.)

0-6	Silt, Recent, river terrace deposit
6-38	Sand and gravel, Recent, bedded terrace deposit
38-45	Bedrock, grey shale

Hole No. 163

Location: U.T.M. - 451000 East, 446000 North
SE corner Lsd. 1-5-54-23 W. 4th Mer.

Elevation: 2120 ft.

Depth (ft.)

0-10	Lacustrine clay
10-17	Till, buff
17-85	Till, grey
85-115	Sand, Saskatchewan, uniformly fine-grained

Hole No. 164

Location: U.T.M. - 435000 East, 446000 North
SW corner Lsd. 4-5-54-23 W. 4th Mer.

Elevation: 2137 ft.

Depth (ft.)

0-12	Lacustrine clay
12-15	Till, buff
15-20	Silt, sandy
20-30	Till, brownish-grey
30-70	Till, grey, sand at 40-41 ft.
70-110	Sand, Saskatchewan, grey, fine-grained

Hole No. 165

Location: U.T.M. - 417000 East, 447000 North
SE corner Lsd. 1-1-54-24 W. 4th Mer.

Elevation: 2161 ft.

Depth (ft.)

0-12	Lacustrine clay
12-17	Till, buff
17-23	Sand, glacial, grey and silty
23-40	Bedrock, grey sandstone at 23-34 ft., shale at 34-36 ft., sandstone below 36 ft.

Hole No. 166

Location: U.T.M. - 402000 East, 446000 North
NW corner Lsd. 13-36-53-24 W. 4th Mer.

Elevation: 2226 ft.

Depth (ft.)

0-6 Lacustrine clay
6-12 Till, sandy clay with coal fragments
12-25 Bedrock, brown shale

Hole No. 167

Location: U.T.M. - 386000 East, 447000 North
NW corner Lsd. 13-35-53-24 W. 4th Mer.

Elevation: 2254 ft.

Depth (ft.)

0-10 Sand, glacial, silty, dry
10-16 Lacustrine clay
16-30 Bedrock, bentonitic clay at 16-23 ft.,
grey sandstone below 23 ft.

Hole No. 168

Location: U.T.M. - 369000 East, 449000 North
SW corner Lsd. 4-3-54-24 W. 4th Mer.

Elevation: 2236 ft.

Depth (ft.)

0-11 Lacustrine clay
11-13 Till, sandy clay
13-25 Bedrock, grey shale at 13-23 ft.,
grey sandstone below 23 ft.

Hole No. 169

Location: U.T.M. - 353000 East, 448000 North
NE corner Lsd. 16-32-53-24 W. 4th Mer.

Elevation: 2225 ft.

Depth (ft.)

0-7	Lacustrine clay
7-14	Till, buff
14-24	Till, dark grey
24-50	Till-bedrock mixture, scattered coal fragments
50-60	Sand, glacial, "dirty"
60-87	Till, dark grey, very sandy below 80 ft.
87-90	Bedrock, shale

Hole No. 170

Location: U.T.M. - 338000 East, 449000 North
SW corner Lsd. 4-5-54-24 W. 4th Mer.

Elevation: 2235 ft.

Depth (ft.)

0-13	Lacustrine clay
13-32	Till, very soft, buff
32-50	Till, grey, with coal fragments
50-80	Sand, glacial, "dirty"
80-90	Bedrock, grey shale

Hole No. 171

Location: U.T.M. - 321000 East, 450000 North
SW corner Lsd. 4-6-54-24 W. 4th Mer.

Elevation: 2235 ft.

Depth (ft.)

0-20	Lacustrine clay, silty and soft at 0-13 ft., grey sandy clay at 13-20 ft.
20-70	Till, grey, scattered coal and bedrock fragments
70-80	Sand, glacial, "dirty"
80-100	Till, dark grey
100-110	Sand, Saskatchewan, grey

Hole No. 172

Location: U.T.M. - 303000 East, 451000 North
SE corner Lsd. 1-2-54-25 W. 4th Mer.

Elevation: 2236 ft.

Depth (ft.)

0-21	Lacustrine clay, silty, soft
21-30	Sand, glacial, "dirty", scattered gravel lenses
30-34	Till, grey
34-65	Bedrock, soft sandstone

Hole No. 173

Location: U.T.M. - 288000 East, 453000 North
SW corner Lsd. 4-2-54-25 W. 4th Mer.

Elevation: 2254 ft.

Depth (ft.)

0-20	Lacustrine clay, dark grey at 0-6 ft., pale brownish-grey at 6-20 ft.
20-36	Lacustrine silt, clayey
36-73	Till, hard, grey, mixed with bedrock at 40-55 ft.
73-80	Bedrock, dry greenish-grey shale

Hole No. 174

Location: U.T.M. - 418000 East, 464000 North
SE corner Lsd. 1-12-54-24 W. 4th Mer.

Elevation: 2170 ft.

Depth (ft.)

0-3	Lacustrine clay
3-10	Lacustro-till, buff silty clay
10-17	Sand, glacial, "dirty", bedrock fragments
17-25	Till, hard, grey
25-35	Bedrock, sandstone (ice-shoved?)
35-55	Till, dark grey
55-65	Bedrock, sandy grey shale

Hole No. 175

Location: U.T.M. - 404000 East, 466000 North
SW corner Lsd. 4-12-54-24 W. 4th Mer.

Elevation: 2215 ft.

Depth (ft.)

0-10 Lacustro-till, buff, silty
10-25 Bedrock, grey shale

Hole No. 176

Location: U.T.M. - 386000 East, 463000 North
NW corner Lsd. 13-2-54-24 W. 4th Mer.

Elevation: 2241 ft.

Depth (ft.)

0-1 Fill
1-6 Lacustrine clay
6-17 Till, buff
17-23 Till-bedrock mixture
23-30 Bedrock, greenish-grey bentonitic shale

Hole No. 177

Location: U.T.M. - 369000 East, 464000 North
NE corner Lsd. 16-4-54-24 W. 4th Mer.

Elevation: 2249 ft.

Depth (ft.)

0-3 Fill
3-6 Lacustrine clay, sandy
6-15 Till, buff, scattered coal fragments
15-25 Bedrock, grey shale

Hole No. 178

Location: U.T.M. - 353000 East, 465000 North
NE corner Lsd. 16-5-54-24 W. 4th Mer.

Elevation: 2240 ft.

Depth (ft.)

0-3	Lacustrine clay
3-17	Till, buff
17-21	Till, grey
21-35	Till-bedrock mixture
35-45	Sand, glacial, "dirty"
45-55	Bedrock, bluish-grey sandstone

Hole No. 179

Location: U.T.M. - 337000 East, 466000 North
NW corner Lsd. 13-5-54-24 W. 4th Mer.

Elevation: 2235 ft.

Depth (ft.)

0-17	Lacustrine clay, grading below to silty clay
17-75	Till, grey, pebbly bed at 51-53 ft.
75-95	Bedrock, coal at 75-83 ft., bentonitic sandstone below 83 ft.

Hole No. 180

Location: U.T.M. - 321000 East, 466000 North
NE corner Lsd. 16-1-54-24 W. 4th Mer.

Elevation: 2245 ft.

Depth (ft.)

0-10	Lacustrine clay and silty clay
10-28	Lacustrine silt and sandy silt
28-45	Till
45-55	Bedrock, shale (ice-shoved?)
55-70	Till, dark brownish-grey
70-80	Bedrock, grey sandstone and minor shale

Hole No. 181

Location: U.T.M. - 304000 East, 467000 North
NE corner Lsd. 16-2-54-25 W. 4th Mer.

Elevation: 2260 ft.

Depth (ft.)

0-5	Lacustrine clay, silty, grey
5-32	Lacustrine silt, grey, very soft at 20-32 ft.
32-35	Till
35-40	Sand, glacial, grey, silty
40-50	Till, sandy, coal fragments
50-70	Bedrock, sandstone with scattered shale, coal, and bentonite interbeds

Hole No. 182

Location: U.T.M. - 403000 East, 478000 North
NW corner Lsd. 13-12-54-24 W. 4th Mer.

Elevation: 2200 ft.

Depth (ft.)

0-7	Lacustrine clay, silty
7-25	Till, buff, sandy
25-34	Till, grey, sandy
34-45	Bedrock, shaly sandstone and shale

Hole No. 183

Location: U.T.M. - 387000 East, 480000 North
NW corner Lsd. 13-11-54-24 W. 4th Mer.

Elevation: 2225 ft.

Depth (ft.)

0-9	Lacustrine clay
9-13	Lacustro-till, buff clay and silty clay
13-20	Sand, glacial, silty with scattered clay beds
20-32	Till, dark grey, sandy
32-45	Bedrock, shale at 32-43 ft., sandstone below 43 ft.

Hole No. 184

Location: U.T.M. - 370000 East, 480000 North
NE corner Lsd. 16-9-54-24 W. 4th Mer.

Elevation: 2245 ft.

Depth (ft.)

0-20 Lacustro-till, buff, clay and silt interbeds,
scattered pebbles and coal fragments

20-32 Bedrock, dark grey shale

Hole No. 185

Location: U.T.M. - 353000 East, 480000 North
NE corner Lsd. 16-8-54-24 W. 4th Mer.

Elevation: 2255 ft.

Depth (ft.)

0-8 Lacustrine clay, pale brown

8-27 Till, brown, bedrock fragments

27-38 Till, grey

38-60 Bedrock, grey sandstone with coaly beds

Hole No. 186

Location: U.T.M. - 338000 East, 481000 North
NW corner Lsd. 13-8-54-24 W. 4th Mer.

Elevation: 2240 ft.

Depth (ft.)

0-22 Lacustrine clay, silty and wet at 7-22 ft.

22-68 Till

68-83 Bedrock (ice-shoved ?)

83-95 Till, very hard, stony

Hole No. 187

Location: U.T.M. - 322000 East, 483000 North
SW corner Lsd. 4-18-54-24 W. 4th Mer.

Elevation: 2260 ft.

Depth (ft.)

0-27	Lacustrine clay and silt, buff
27-41	Till
41-43	Sand, glacial
43-51	Bedrock (ice-shoved ?)
51-53	Till, stony
53-73	Bedrock, hard shale and siltstone (ice-shoved ?)
73-74	Till, very stony

Hole No. 188

Location: U.T.M. - 306000 East, 483000 North
NW corner Lsd. 13-12-54-25 W. 4th Mer.

Elevation: 2260 ft.

Depth (ft.)

0-28	Lacustrine clay, brown, scattered thin sand beds
28-38	Till-bedrock mixture, very hard and stony
38-59	Bedrock (ice-shoved ?)
59-80	Till-bedrock mixture, many pebbles at 59-67 ft., mainly bedrock with scattered pebbles below 67 ft.

Hole No. 189

Location: U.T.M. - 293200 East, 426100 North
N side Lsd. 6-26-53-25 W. 4th Mer.

Elevation: 2240 ft.

Depth (ft.)

0-4	Fill, black organic clay
4-19	Lacustrine clay, silty
19-30	Till, soft, grey, sandy
30-41	Till, hard, brownish-grey
41-68	Bedrock, soft grey sandstone at 41-50 ft., grey shale below 50 ft.

Hole No. 190

Location: U.T.M. - 261400 East, 435600 North
NE corner Lsd. 14-28-53-25 W. 4th Mer.

Elevation: 2250 ft.

Depth (ft.)

0-25	Lacustrine silt, dry
25-35	Sand, glacial, silty, grey
35-115	Sand, glacial, grey, wet
115-119	Till, dark grey
119-132	Sand, Saskatchewan (?)
132-153	Bedrock, shale and bentonitic sandstone (ice-shoved ?)

Hole No. 191

Location: U.T.M. - 222500 East, 465400 North
SE corner Lsd. 16-1-54-26 W. 4th Mer.

Elevation: 2195 ft.

Depth (ft.)

0-19	Lacustrine clay, silty, soft
19-71	Till, soft, grey, sandy
71-73	Sand and gravel, Saskatchewan (?), wet
73-83	Bedrock, grey shale and bentonitic sandstone

Hole No. 192

Location: U.T.M. - 240000 East, 485200 North
NE corner Lsd. 16-7-54-26 W. 4th Mer.

Elevation: 2250 ft.

Depth (ft.)

0-8	Lacustrine clay, silty
8-26	Till, soft, buff, sandy
26-48	Bedrock, grey shale with minor sandstone interbeds

Hole No. 193

Location: U.T.M. - 343100 East, 432900 North
SE corner Lsd. 3-32-53-24 W. 4th Mer.

Elevation: 2215 ft.

Depth (ft.)

0-8	Lacustrine clay, silty, soft
8-20	Till, soft, buff, clayey
20-101	Till, grey
101-116	Till, very sandy, no pebbles
116-158	Sand, Saskatchewan (?), abundant clay, silt, and organic material

Hole No. 194

Location: U.T.M. - 264200 East, 231800 North
SW corner Lsd. 5-5-52-25 W. 4th Mer.

Elevation: 2265 ft.

Depth (ft.)

0-15	Lacustrine clay, silty, buff
15-41	Lacustrine silt, sandy, grey
41-91	Till, soft, sandy
91-158	Sand, Saskatchewan, grey, variable texture

Hole No. 195

Location: U.T.M. - 402800 East, 312400 North
NW corner Lsd. 11-24-52-24 W. 4th Mer.

Elevation: 2230 ft.

Depth (ft.)

0-12	Lacustrine clay
12-28	Till, soft, buff, sandy
28-70	Till, hard, grey, clayey
70-103	Bedrock, bentonitic sandstone at 70-75 ft., shale at 75-95 ft., coal below 95 ft.

Hole No. 196

Location: U.T.M. - 412200 East, 290600 North
NE corner Lsd. 8-13-52-24 W. 4th Mer.

Elevation: 2290 ft.

Depth (ft.)

0-12	Lacustro-till, silty clay with sand and pebbles, buff
12-22	Till, buff, sandy
22-41	Till, grey, sandy
41-46	Sand, glacial, silty, variable texture, wet
46-75	Till, grey, sandy
75-108	Bedrock, shale

Hole No. 197

Location: U.T.M. - 429800 East, 320900 North
SE corner Lsd. 8-30-52-23 W. 4th Mer.

Elevation: 2260 ft.

Depth (ft.)

0-7	Lacustro-till, soft, clayey, buff
7-18	Till, soft, buff, sandy
18-84	Till, grey, sandy with large pebbles
84-87	Sand and gravel, Saskatchewan (?)
87-103	Bedrock, shale and bentonitic shale

Hole No. 198

Location: U.T.M. - 512600 East, 366400 North
NE corner Lsd. 1-12-53-23 W. 4th Mer.

Elevation: 2265 ft.

Depth (ft.)

0-18	Till, buff, sandy
18-34	Till, dark grey
34-88	Bedrock, shale at 34-37 ft., soft grey sandstone below 37 ft. (originally interpreted as "sand")

STRATIGRAPHIC SECTIONS

Section R1 - outcrop

Location: U.T.M. - 260900 East, 297000 North
Lsd. 7-16-52-25 W. 4th Mer.
Elevation: 2208 ft.

Depth (ft.)

0-32	Lacustrine clay, brown, silty
32-50	Till, brown, stony, scattered sand lenses
50-76	Till, grey, sand lenses and coal fragments common
76-171	Sand, Saskatchewan, clean, minor gravel

Section R2 - outcrop

Location: U.T.M. - 256500 East, 292800 North
NE corner Lsd. 3-16-52-25 W. 4th Mer.
Elevation: 2209 ft.

Depth (ft.)

0-13	Lacustrine clay, silty - lower boundary uncertain
13-43	<u>Covered interval</u>
43-61	Till, grey, grading below into brown till interbedded with numerous sand and silt lenses
61-141	Sand, Saskatchewan, thin gravel at base, springs at bedrock contact
141-171	Bedrock

Section R3 - outcrop

Location: U.T.M. - 268100 East, 296000 North
Lsd. 5-15-52-25 W. 4th Mer.
Elevation: 2196 ft.

Depth (ft.)

0-26	Lacustrine silt, sandy, scattered lacustro-till beds
26-80	Till, brown to grey
80-135	Sand, Saskatchewan, thin gravel at base, springs at bedrock contact

Section R4 - outcrop

Location: U.T.M. - 271400 East, 293200 North
SE corner Lsd. 6-15-52-25 W. 4th Mer.

Elevation: 2206 ft.

Depth (ft.)

0-33	Lacustrine clay, silty, scattered lacustro-till beds at 25-33 ft.
33-50	Till, brownish-grey, sand lenses
50-58	Lacustro-till, grey bedded till with numerous sand beds
58-100	<u>Covered interval</u>
100-157	Sand, Saskatchewan
157-171	Bedrock, grey bentonitic (?) shale

Section R5 - outcrop

Location: U.T.M. - 274200 East, 290000 North
E side Lsd. 3-15-52-25 W. 4th Mer.

Elevation: 2177 ft.

Depth (ft.)

0-10	Lacustrine clay, silty
10-25	<u>Covered interval</u>
25-33	Till
33-50	<u>Covered interval</u>
50-58	Sand, Saskatchewan
58-143	Bedrock

Section R6 - outcrop

Location: U.T.M. - 286500 East, 312200 North
Lsd. 5-23-52-25 W. 4th Mer.

Elevation: 2183 ft.

Depth (ft.)

0-13	Lacustrine clay, silty
13-26	Till, brown, very few sand lenses
26-36	Lacustro-till, dark grey, numerous sand lenses
36-129	<u>Covered interval</u>
129-149	Bedrock

Section R7 - outcrop

Location: U.T.M. - 285100 East, 296900 North
NE corner Lsd. 5-14-52-25 W. 4th Mer.

Elevation: 2200 ft.

Depth (ft.)

0-27	Lacustrine clay and silty clay
27-52	Till, brown, sand, scattered sand and gravel beds
52-64	Till, grey, scattered sand lenses
64-129	Sand, Saskatchewan, springs at bedrock contact
129-168	Bedrock

Section R8 - outcrop

Location: U.T.M. - 283800 East, 289000 North
N side Lsd. 13-11-52-25 W. 4th Mer.

Elevation: 2198 ft.

Depth (ft.)

0-35	Lacustrine clay, sandy to silty
35-80	Sand, Saskatchewan, thin gravel at base, springs at bedrock contact
80-164	Bedrock

Section R11 - outcrop

Location: U.T.M. - 291500 East, 314600 North
NE corner Lsd. 6-23-52-24 W. 4th Mer.

Elevation: 2185 ft.

Depth (ft.)

0-17	Lacustrine clay, silty with thin clay interbeds
17-36	Till, brown
36-37	Sand, glacial
37-60	Till, grey, silty and stony, scattered sand lenses
60-81	Sand, Saskatchewan, thin gravel at top and base
81-157	Bedrock

Section R12 - outcrop

Location: U.T.M. - 296100 East, 315400 North
SW corner Lsd. 9-23-52-25 W. 4th Mer.

Elevation: 2173 ft.

Depth (ft.)

0-4	Lacustrine clay, silty
4-10	Lacustro-till, numerous sand lenses
10-37	<u>Covered interval</u>
37-46	Till
46-47	Sand, Saskatchewan, rust-stained
47-146	Bedrock, grey shale

Section R15 - outcrop

Location: U.T.M. - 305800 East, 347100 North
SE of intersection of Summit Drive and
Riverside Drive

Elevation: 2185 ft.

Depth (ft.)

0-5	Lacustrine clay
5-81	Till
81-165	Sand, Saskatchewan

Section R16 - outcrop

Location: U.T.M. - 310600 East, 350600 North
SE of St. Georges Crescent

Elevation: 2166 ft.

Depth (ft.)

0-5	Lacustrine clay, grading below into silty clay and silt
5-17	<u>Covered interval</u>
17-20	Lacustro-till, till, silt and clay beds - mixed
20-51	Till
51-147	Sand, Saskatchewan, fine-grained

Section R20 - outcrop

Location: U.T.M. - 352000 East, 342200 North
 Corner of 99B Street and 95 Avenue
 Elevation: 2116 ft.

Depth (ft.)

0-32 Alluvium, poorly sorted sand and gravel,
 Recent river terrace deposit
 32-102 Bedrock, shale and siltstone with scattered
 coal interbeds

Section R23 - outcrop

Location: U.T.M. - 363700 East, 350500 North
 SW of intersection of Cameron Avenue and
 92 Street
 Elevation: 2053 ft.

Depth (ft.)

0-41 Sand, Saskatchewan, scattered gravel and
 silt beds
 41-42 Bedrock

Section R33 - outcrop

Location: U.T.M. - 403400 East, 374600 North
 S of Ada Boulevard on projection of
 46 Street
 Elevation: 2079 ft.

Depth (ft.)

0-24 Lacustrine clay, silty, grey clay interbeds
 24-31 Till, brown
 31-75 Bedrock, shale with bentonite at 31-40 ft.,
 sandstone below 40 ft.

Section R34 - outcrop

Location: U.T.M. - 407700 East, 322200 North
S of Ada Boulevard on projection of
42 Street

Elevation: 2138 ft.

Depth (ft.)

0-23	Lacustrine clay, silty, grading below into grey clay
23-43	Till, grey, sand lenses
43-53	Sand and gravel, Saskatchewan, rust-stained pebbles averaging 1 to 2 inches in size
53-134	Bedrock

Section R35 - outcrop

Location: U.T.M. - 410300 East, 369100 North
S side of Ada Boulevard on projection of
38 Street

Elevation: 2152 ft.

Depth (ft.)

0-13	Lacustrine clay, silty to sandy
13-19	Till, brown
19-25	Lacustro-till, many clay and sand lenses
25-106	Sand, Saskatchewan, fine- to medium-grained
106-148	Bedrock, mainly shale (may extend higher in section)

Section R42 - outcrop

Location: U.T.M. - 452500 East, 422000 North
Lsd. 12-28-53-23 W. 4th Mer.

Elevation: 2097 ft.

Depth (ft.)

0-25	Lacustrine clay, silty, scattered sand beds
25-30	Sand, glacial, well sorted
30-35	Lacustro-till, sandy clay with till beds and scattered pebbles
35-65	<u>Covered interval</u>
65-75	Sand, Saskatchewan (?)

Section R43 - outcrop

Location: U.T.M. - 450600 East, 422600 North
Lsd. 12-28-53-23 W. 4th Mer.

Elevation: 2091 ft.

Depth (ft.)

0-16	Sand, glacial
16-23	Lacustrine clay and silty clay
23-46	<u>Covered interval</u>
46-94	Sand, Saskatchewan

Section R45 - outcrop

Location: U.T.M. - 444900 East, 424000 North
E side Lsd. 10-29-53-23 W. 4th Mer.

Elevation: 2098 ft.

Depth (ft.)

0-9	Lacustrine clay, silty and sandy
9-56	Till, brown, thin grey till bed near base
56-101	Sand, Saskatchewan (may not extend as low in section as indicated)

Section R46 - outcrop

Location: U.T.M. - 441700 East, 423900 North
W side Lsd. 10-29-53-23 W. 4th Mer.

Elevation: 2093 ft.

Depth (ft.)

0-31	Lacustrine clay, sandy and silty
31-64	Till, brown
64-95	Sand, Saskatchewan

Section R47 - outcrop

Location: U.T.M. - 468100 East, 414600 North
NE portion Lsd. 4-27-53-23 W. 4th Mer.

Elevation: 2107 ft.

Depth (ft.)

0-26	Lacustrine clay, silty with sand beds
26-28	Lacustro-till, silty clay and clay with numerous sand lenses
28-38	Till, grey
38-47	Sand and gravel, Saskatchewan
47-112	Bedrock, grey shale

Section R52 - outcrop

Location: U.T.M. - 462600 East, 448800 North
NW corner Lsd. 1-4-54-23 W. 4th Mer.

Elevation: 2095 ft.

Depth (ft.)

0-16	Lacustrine clay, silty, more clayey at depth
16-29	Till, brown, sand lenses common
29-31	Sand, glacial, "dirty", coal fragments
31-41	Till, grey

Section R53 - outcrop

Location: U.T.M. - 465400 East, 454600 North
SE portion Lsd. 9-4-54-23 W. 4th Mer.

Elevation: 2088 ft.

Depth (ft.)

0-14	Lacustrine clay, silty
14-18	Till, brown
18-50	Till, grey
50-100	Sand, Saskatchewan (may not extend as low in section as indicated)

Section R54 - outcrop

Location: U.T.M. - 471600 East, 457900 North
SW corner Lsd. 14-3-54-23 W. 4th Mer.

Elevation: 2074 ft.

Depth (ft.)

0-20 Lacustrine clay, silty, sand lenses towards
base

20-39 Till, grey, few sand lenses

39-87 Sand, Saskatchewan

Section R55 - outcrop

Location: U.T.M. - 474600 East, 458200 North
SE corner Lsd. 14-3-54-23 W. 4th Mer.

Elevation: 2076 ft.

Depth (ft.)

0-23 Lacustrine clay, silty with clayey beds

23-33 Till, grey, lenses of brown till

33-90 Sand, Saskatchewan, few gravel beds
(may not extend as deep as indicated)

Section R60 - outcrop

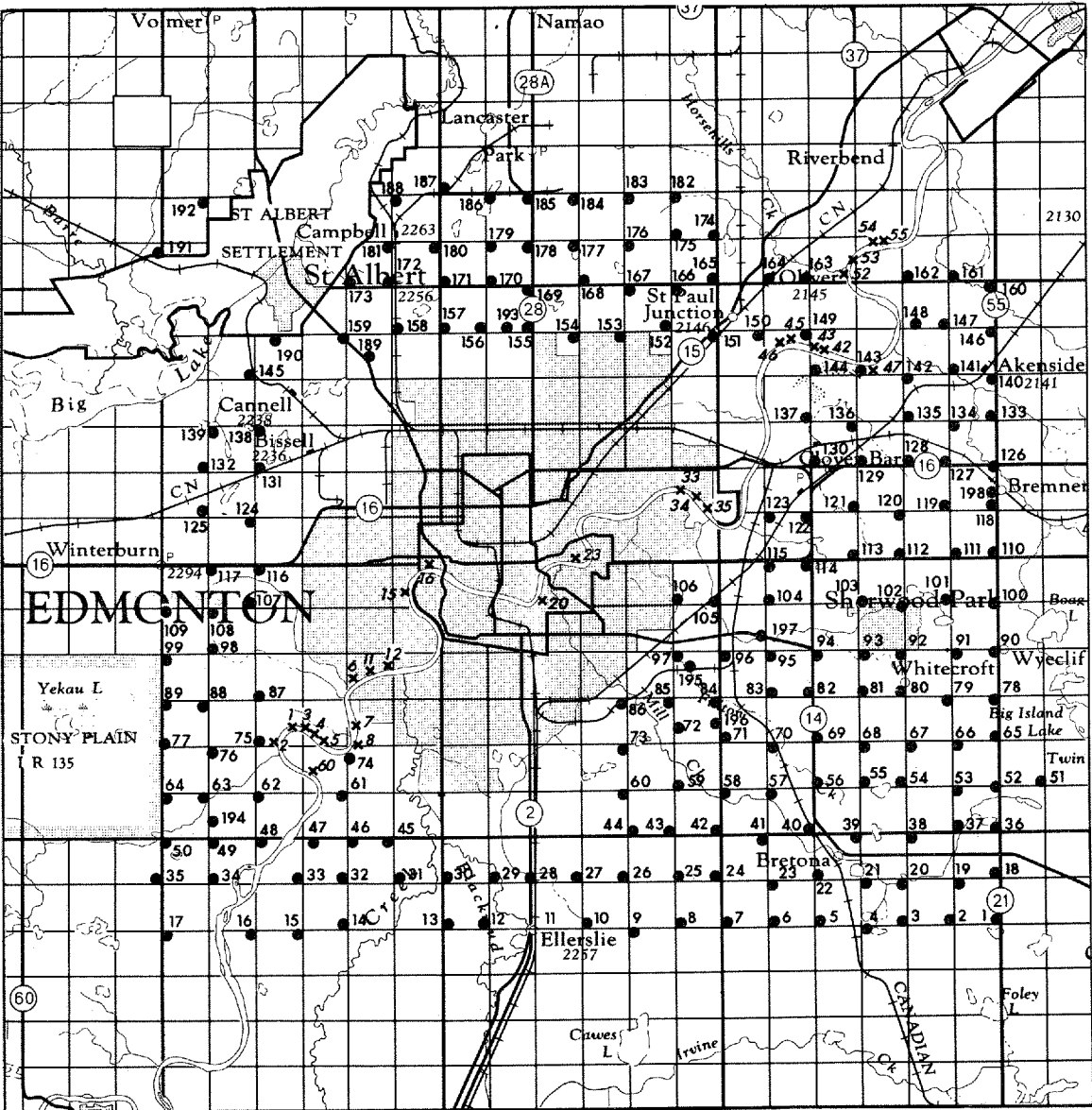
Location: U.T.M. - 266500 East, 281500 North
S side Lsd. 12-10-52-25 W. 4th Mer.

Elevation: 2121 ft.

Depth (ft.)

0-2 Fill-mixed sand, silt, and clay

2-84 Bedrock, mainly sandstone and siltstone,
minor shale and bentonite



● Drill hole

× Stratigraphic section

Figure 1. Location of drill holes and stratigraphic sections.