by R.K. Bezys

Bezys, R.K. 2000: Stratigraphic investigations and corehole drilling program, 2000; *in* Report of Activities 2000, Manitoba Industry, Trade and Mines, Manitoba Geological Survey, p. 196-201.

SUMMARY

Stratigraphic investigations and drilling programs were carried out for various projects. The Capital Region Study has been completed and the report is in the editing stage. H.R. McCabe's historical corehole data have been added to the Manitoba Stratigraphic Database. All brine springs are being tabulated for the Prairie-Type Project. Two coreholes were drilled in the Dancing Point (Lake Winnipeg) area for stratigraphic purposes; one corehole was drilled proximal to the High Rock Lake structure; one corehole was drilled in the Wekusko area to test metallic veining in the Red River Formation; and one corehole was drilled in the Winnipegosis area for regional stratigraphy. A total of 457.8 m of drilling was conducted this year.

STRATIGRAPHIC INVESTIGATIONS

Capital Region Project

A mineral-resource and land-use assessment of Manitoba's Capital Region (Winnipeg and portions of the surrounding municipalities) was undertaken by the Manitoba Mines Branch and the Manitoba Geological Survey. The study is being conducted in response to the Capital Region Strategy, under development by the Manitoba Round Table. The purpose of this assessment is to provide mineral-resource data for use in municipal development plans for the Capital Region that will legally protect high-quality quarry minerals, such as crushed stone (Bamburak and Bezys, 1995, 1996).

In 1999, eight preliminary maps were released that depict overburden thickness, bedrock topography and mineral resource potential in NTS map sheets 621/2, /3, /6 and /7 (Bezys, Bamburak and Conley, 1999a–h). Final versions of these maps, as well as eight maps covering NTS map sheets 62H/10, /11, /14 and /15, are in the final stages of preparation; the accompanying economic report will be released for March 2001 (*see* Conley, GS-30, this report).

Manitoba Stratigraphic Database

The Manitoba Stratigraphic Database continues to be updated. At this time, 437 stratigraphic and/or oil and gas wells have been updated with historical tops picked by H.R. McCabe (*see* Conley (GS-30, this volume) and Bezys and Conley (1999) for further information).

Prairie-Type Microdisseminated Mineralization

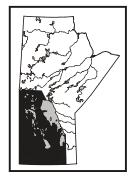
This project is the investigation of Prairie-type microdisseminated mineralization in Devonian-age carbonate rocks in the Mafeking quarries (west-central Manitoba; Fedikow et al., 1996). Surface mapping is augmented by geochemical and geophysical surveys: brine spring, b-horizon soil and stream sampling. Rock outcrops in the Mafeking quarries display unusual 'chimney' features that appear to represent hydrothermal vents. Palynological (conodont) analyses of sand and clay infill from the centre of these chimneys indicate a Devonian Souris River Formation age, the same as that of the carbonate host rock of the chimneys. There is no evidence of Cretaceous-age infill to suggest a karst origin. Sideritic rinds adjacent to the chimneys are slightly enriched in some elements, such as Co, Ni, Zn and Fe, when compared with surrounding host rock strata (Table GS-31-1). This enrichment suggests that mineralizing fluids were coming from underlying strata as brines or formation waters.

An open file report is in preparation and is expected to be released in March 2001. A B.Sc. thesis on the Mafeking quarry has been 196 completed in conjunction with the University of Manitoba (Ramnath, 1999). Nuno Machado (University of Montreal) is carrying out age-dating work on the zircon and monazite. Steve Grasby (Geological

Survey of Canada (GSC-Calgary) continues to conduct sample analyses

Table GS-31-1: Select INAA geochemistry of solution chimneys from the North Mafeking quarry, west-central Manitoba.

Element	Со	Fe	Ni	Zn
Units	ppm	%	ppm	ppm
Detection Limit	1	0.01	20	50
SC1:				
Sinter	-1	0.19	-20	-50
Rind	140	36.8	88	577
Wall rock	2	0.48	-20	-50
SC2:				
Sinter	1	0.37	-20	-50
Rind	17	32.2	-20	186
Wall rock	2	1.31	-20	-50
SC3:				
Sinter	1	0.28	-20	-50
Rind	19	32.9	-20	174
Wall rock	2	0.85	-20	-50
SC4:				
Sinter	1	0.21	-20	65
Rind	270	38.4	-20	296
SC7A:				
Sinter	2	0.26	-20	-50
Rind	43	27.2	-20	480
SC7B:				
Sinter	1	0.19	-20	-50
Rind	49	26.5	-20	588
Wall rock	2	0.61	-20	-50
SC8:				
Sinter	2	0.18	-20	-50
Rind	10	27.7	-20	67
Wall rock	2	1.14	-20	-50
SC9:				
Sinter	1	0.19	-20	-50
Rind	110	28.1	71	640
SC10:				
Sinter	2	0.26	-20	-50
Rind	87	25.5	60	472
SC11:				
Sinter	12	0.68	-20	-50
Sinter	7	0.57	-20	-50
Rind	190	31.1	89	193
Wall rock	4	1.41	-20	-50
SC12:				
Sinter	1	0.18	-20	-50
Rind	72	40.7	-21	158
SC13:				
Sinter	2	0.13	-20	-50
Rind	8	28.6	-20	99
SC14:				
Sinter	1	0.14	-20	-50
Wall rock	3	2.71	-20	-50
SC15:				
Sinter	2	0.2	-20	-50
Rind	33	29.6	75	184
SC17:				
Sinter	2	0.3	-20	-50
Rind	37	34.5	-20	80
Wall rock	1	0.71	-20	-50



of brine springs for stable-isotope geochemistry (*see* Grasby, GS-34, this volume). All brine springs in west-central Manitoba are being inventoried and will be presented as a GSC bulletin.

STRATIGRAPHIC AND INDUSTRIAL MINERALS CORE-HOLE DRILLING

Dancing Point

Two coreholes were drilled in the Dancing Point area, east of Highway 6 and west of the Lake Winnipeg shoreline (Fig. GS-31-1; Table GS-31-2). Corehole M-1-00 went to 170.5 m and intersected the Precambrian; corehole M-2-00 went to a depth of 151.8 m and intersected the Winnipeg Formation sandstone. These coreholes were drilled

in an area where silicified coral heads (5–10 cm in diameter) were found along the Silurian escarpment (W.D. McRitchie, pers. comm., 2000). Corehole M-1-00 confirmed the stratigraphic location of these coral heads, from within the middle of the Stonewall Formation. Corehole M-2-00 did not encounter any evidence of the silicified coral heads. These two coreholes will be valuable reference holes for NTS map sheet 63B, where very few coreholes have been drilled.

High Rock Lake

One corehole, M-3-00, was drilled east of the High Rock Lake structure (Fig. GS-31-2, -3; Table GS-31-2). A study conducted by H.R. McCabe indicated the presence of a highly disturbed area, possibly

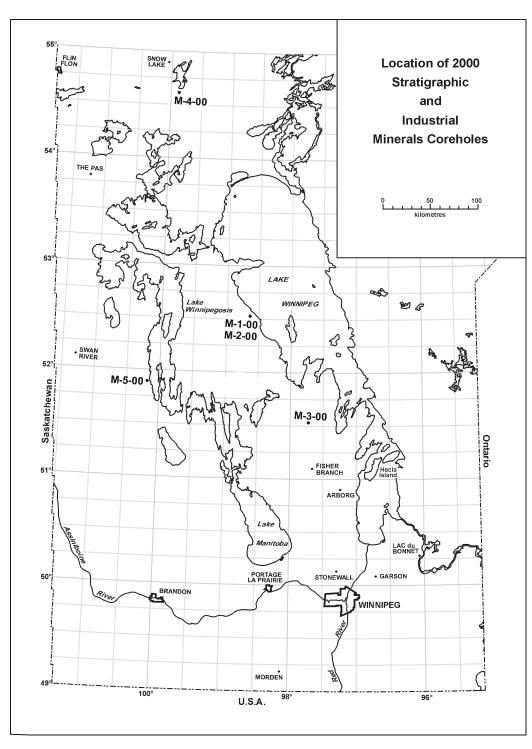


Figure GS-31-1: Location of stratigraphic and industrial-mineral coreholes, 2000.

Heak no. Location and With Member 2000 Montal 2000 Likbology summary M01-00 42.03 41-03W VERBURDEN 30-3-0 Bindlinii Dancing P. SS1550N SULURIAN Interface Group / 2000 30-3-0 Bindlini and interface for auckestone; no Vegen and interface for auckestone; no Vegen and interface for auckestone; approximate fight action mutatal. Interface Stateward 7-8-6-12. Stateward 7-8-6-12. Stateward Interface ORDOVICIANStonevail 13-3-72.01 (aph torus mutatal. 10-31.01-72.000 (ath grty to some yellow, gainatione to mutatal. Interface ORDOVICIANStonevail 313-675.10 (ath grty mutatone, laminated cands 130-275.10 (ath free) mutatal. Interface Interface 130-275.10 (ath free) mutatal. 130-275.10 (ath free) mutatal. Interface Interface 130-275.10 (ath free) mutatal. 130-275.10 (ath free) mutatal. Interface Interface Interface Interface Interface Interface Interface </th <th colspan="7">Table GS-31-2: Summary of stratigraphic corehole data, 2000.</th>	Table GS-31-2: Summary of stratigraphic corehole data, 2000.						
N-0-10 Dancing Pt 62:03-41:03W 518/00X OVERBURDEN SILURIANUTATIALIS (Server) 0.0-3:0 3.0-7.8 Gladial till Dancing Pt 58:16900X SILURIANUTATIALIS (Server) Brown mudstome to warkestome, some chent 7.8-30.5 Tomes nu statume to warkestome, some chent 7.8-30.5 Tomes nu statume to warkestome, some chent 7.8-30.5 VI A ORDOVICIAN SILURIAN 7.8-33.5 Brown mudstome to warkestome, some chent 7.8-30.5 Tomes nu statume 7.8-30.5 VI IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Hole no.	Location and	SYSTEM/Formation/	Interval	Lithology summary		
Dancing PL S221285 S1LURIAWIntenties Group S221285 SULURIAWINTENDES Fisher Branch Bolf wackestone, very broken core, no Virgiana 243.8 ORDOVICIAN SILURIAW Stonewall 7.8-33.5 Brown mudstane to wackestone, some chert T.8-3.0: Stonewall Marier; light brown mudst. 10.9-13.0: T.2one; data gray to same yellow, grainatone to mudstane 0.RDOVICIAN SILURIAW Williams) 27.6-33.5 data gray to same yellow, grainatone to mudstane 0.RDOVICIAN SILURIAW Williams) 37.5-67.5 Light brown wackestone, mottled (lower Red River) 109.2-108.4 0.RDOVICIAN SILURIAW Winnipog 150.2-108.4 Brown wackestone, mottled (lower Red River) 86.0-150.2 0.RDOVICIAN SILURIAWINA 160.2-108.4 Light brown vackestone, mottled (lower Red River) 100.2-168.4 0.RDOVICIAN SILURIAWINA 160.2-108.4 Integrained brown stantotene (?hirli) 162.2-23.10 cm of form Gray integrained stantotone (lower Red River) 106.2-108.4 Integrained brown stantotene (?hirli) 162.2-105.5 Bight gray, fine-grained stantotone (low or core) (lower Red River) 108.4-170.5 Integrained provided to massive (rower composition form in asz), rower compositin form in asz), rower composition formute bid.		elevation (m)	(Member)	(m)			
521 23E Fisher Franch 243.8 ORDOVICIAN-SILURIAN 7.8–33.5 Brown mutatome to wackestone, some check 7.8–70.5 Stonewall 10.9–13.0.7-Zone; dok gray to some yellow, galiatome to mutatome 13.9–27.6: light brown, motified, fractured with allicited contain 27.6–33.5: datk gray mutatome 13.9–27.6: light brown, motified, fractured with allicited contain 27.6–33.5: datk gray mutatome, taminated 14.9 (Williams) 33.5–67.5 Uight brown wacketoon, motified, chenty Wornpeg 150.2–168.4 Gray and brown mudatomes, luminated anotatome (Yrinill) 156.6–159.2: Light gray, fine-grained standstone (10 on of comp) 156.2–168.2: light gray, fine-grained standstone (10 on of comp) 156.2–158.2: Light gray, fine-grained standstone (10 on of comp) 158.4–170.5: Horthead grained grained/stante, scone 156.2–157.2: Light gray, fine-grained standstone (10 on of comp) 158.4–170.5: Horthead grained grained, brown mutatone 157.252 ORDOVICIAN-SILURIAN 168.4–170.5: Horthead grained grained/stante, brown mutatone 157.252 ORDOVICIAN-SILURIAN 4.2–30.2 4.2–30.5 157.252 ORDOVICIAN-SILURIAN 4.2–30.2 4.2–30.2 157.252 ORDOVICIAN-SILURIAN 4.2–30.2<	M-01-00	02-03-41-09W	OVERBURDEN	0.0-3.0	Glacial till		
N-2-00 Shonwall Shonwall 10-3-30.7.7-20nc; dxi; gro; 10 some yellow; 10-31.0.7.7-20nc; dxi; gro; 10 some yellow; 10-31.0.7.7-20nc; dxi; gro; 10 some yellow; 10-31.0.7.7-20nc; dxi; gro; 10-30.0.7.2-20nc; dxi; gro; 10-30.0.7.2-2-20nc; dxi; gro; 10-30.0.7.2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	Dancing Pt.			3.0–7.8	Buff wackestone; very broken core; no Virgiana		
 M-22-00 M-22-00 MODVICIAN/Stonewall CRDOVICIAN/Stonewall CRECAMBRIAN FIGHA/STON CRECAMBRIAN FIGHA/STON CRECAMBRIAN FIGHA/STON CRECAMBRIAN CRECAMBRIAN<		243.8	ORDOVICIAN-SILURIAN/	7.8–33.5	Brown mudstone to wackestone, some chert		
M-02-00 15-06-11-09W SILURIAN/Interlake Group/ Virinipeg 100-27.2 Stonewall Siluriation M-02-00 15-06-11-09W SILURIAN/Interlake Group/ Virinipeg 100-27.2 Stonewall Siluriation M-02-00 15-06-11-09W SILURIAN/Interlake Group/ Virinipeg 100-2-102 Stonewall Siluriation M-02-00 15-06-11-09W Siluriation 100-2-108.4 100-2-108.4 Siluriation M-02-00 15-06-11-09W Wirnipeg 100-2-108.4 100-2-108.4 Siluriation M-02-00 15-06-11-09W Siluriation 108.4-170.5 Siluriation Siluriation M-02-00 15-06-11-09W Siluriation 100-4-2 Biluriation Siluriation M-02-00 15-06-11-09W Siluriation 0.0-4-2 Biluriation Siluriation M-02-00 15-06-11-09W Siluriation 0.0-4-2 Biluriation Siluriation Siluriation 0.0-200 15-06-11-09W Siluriation 0.0-21.2 Biluriation Siluriation Siluriation 0.0-21.2 <td< td=""><td></td><td></td><td>Stonewall</td><td></td><td>7.8–8.0: Stonewall Marker; light brown mudst.</td></td<>			Stonewall		7.8–8.0: Stonewall Marker; light brown mudst.		
M-02-00 15-06-41-09V SUDVICIAN/Stonewail 13.5-67.5 Light brown, motiled, fractured with sillicitied corals Winniped 33.5-67.5 Light brown wackestone, motiled Nove Rol River (FOI Cars) 67.8-83.0 Girey and Johnn wuckestone, motiled, cherty Winniped 150.2-168.4 Brown wackestone, motiled, cherty Winniped 150.2-168.4 Brown wackestone, motiled, cherty Winniped 150.2-168.4 Brown wackestone, motiled, therty Brown and the grant of the grant, fractured with					10.9–13.0: T-Zone; dark grey to some yellow,		
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M-02-00 15-06-41-09W SILURIAN/Interlake Group/ 0.0-4.2 Birk Mountain 30.2-63.3 M-02-00 15-06-41-09W SILURIAN/Interlake Group/ 0.0-4.2 Birk Mountain 0.0-4.2 M-02-00 15-06-41-09W SILURIAN/Interlake Group/ 0.0-4.2 Birk Mountain 0.0-4.2 M-02-00 15-06-2-168.1 bull matchesite Siluri Mountain 0.0-4.2 Birk Mountain 0.0-4.2 M-02-00 15-06-41-09W SILURIAN/Interlake Group/ 0.0-4.2 Birk Mountain 0.			ORDOVICIAN/Stonewall		13.0–27.6: light brown, mottled, fractured with		
M-02-00 15-06-41-00V Slup Mountain 33.5-87.5 Lipt Horow wackestone, Hottled, Chery Winnipeg 150.2-168.4 Brow wackestone, mottled, chery Winnipeg 150.2-168.4 150.2-168.6 Cask grey to grey sandstone, Base Horow 150.2-168.4 150.2-168.6 Cask grey to grey sandstone, Base Horow 150.2-168.6 Cask grey to grey sandstone, 150.2-168.6 Cask grey to grey sandstone, fortilled, there Base Horow 150.2-168.4 150.2-168.6 Cask grey to grey sandstone, fortilled, there 150.2-168.5 Cask grey to grey sandstone, fortilled, there Base Horow FRECAMBRIAN 168.4-170.5 I68.4-160.4 FRECAMBRIAN 168.4-170.5 Iftee Grey, fine- to coarse-grey regreen, coarse- to very coarse grained, poorly foliated to massive rock; composition: horbiende granodiorite: lipt grey, fine- to coarse- to very coarse grained, poorly foliated to massive rock; composition: horbiende flow foliated to flow foliated to flow foliated to flow foliated to flow foliated					silicified corals		
Red River (Fort Garry) 675-880 Grey and brown mudstones, laminated, some ohent (lower Red River) 880-0150.2 Bite State			(Williams)		27.6-33.5: dark grey mudstone, laminated		
M-02-00 15-06-41-09W SILURIAN/Interfake Group/ 5511728 Brown wackestone, motiled, cherty 150.2-168.4 150.2-168.4 Iso.2-166.6 dark group (ine-grained sandstone) 150.2-163.2: light group, fine-grained sandstone 150.2-163.2: light group, fine-grained sandstone (initii)) 152.3: 160.2: light group, fine-grained sandstone (initii)) 152.3: light group, fine-grained sandstone (initii)) 152.4: fine-bianed graind distributing			Stony Mountain	33.5-67.5	Light brown wackestone, mottled		
Minnipeg 150.2–168.4 150.2–168.4 some shale, burrowed 156.6–1592. Light rey, fine-grained sandstone (158.2–162.3: 100 nr of line-grained sandstone (158.2–162.3: 100 nr of line-grained sandstone (152.2–162.3: 100 nr of line-grained sandstone (152.2–162.3: 100 nr of line-grained sandstone (152.2–162.3: 100 nr of line-grained sandstone (10 nr of core) 164.4–168.4: no core M-02-00 15-06-41-09W SUURIANIInterlake Group/ S16112 168.4–170.5 168.4–169.4: Regoith: White to grav, fine- to coarse-grained, seareery kunder of on-30% (1–10 mm in size), quart and feldspar M-02-00 15-06-41-09W SUURIANIInterlake Group/ S16712SE 0.0–4.2 Buff wackestone and packstone, abundant Virgiana S1712SE ORDOVICIAN-SILURIANI 4.2–30.2 4.2–5.4: Stonewall Market Sch mudstone, 21.5–24.5: bidf mudstone S1712SE ORDOVICIAN-SILURIANI 4.2–30.2 4.2–5.0: bidf-gray mudstone, burrowed 10.4–2:10: bidf-gray shale with some sillstone, burrowed 11.4–2: Toxin to gray. Jaminated mudstone M-03-00 16-20-28-01W CRODVICIANI 0.0–11.9 Bidf motifed wackestone (Tryndall Stone), chery, vi			Red River (Fort Garry)	67.5-88.0	Grey and brown mudstones, laminated, some chert		
M-02-00 15-06-11-03/ 15-07-03/ 15-06-11-03/ 15-07-03/ 15-06-11-03/ 15-07-03/			(lower Red River)	88.0-150.2	Brown wackestone, mottled, cherty		
M-02-00 15-06-11-03/ 15-07-03/ 15-06-11-03/ 15-07-03/ 15-06-11-03/ 15-07-03/			Winnipeg	150.2–168.4	150.2–156.6: dark grey to grey sandstone,		
M-02-00 15-06-41-09W SILURIAN/Interlake Group/ 168.4-170.5 168.4-169.4: regorithmed analotized (10 cm of ocrea) M-02-00 15-06-41-09W SILURIAN/Interlake Group/ 0.0-4.2 168.4-169.4: regorithmed analotized, unconsolidated rock M-02-00 15-06-41-09W SILURIAN/Interlake Group/ 0.0-4.2 Buff wackestone and packstone, abundant M-02-00 15-06-41-09W SILURIAN/Interlake Group/ 0.0-4.2 Buff wackestone and packstone, abundant Dancing PL 5816175N Fisher Branch Virgian 237.7 m Stonewall 4.2-5.4: Stonewall Marker: brown mudstone, burrowed 10.4-2.10.2: biff wackestone and packstone, abundant 10.4-2: Situe-grey marker bed, mudstone 237.7 m Stonewall 3.02-63.9 Buff wackestone and packstone, burrowed 10.4-2.10: biff wackestone and mudstone 21.0-21.5: biff wackestone, burrowed 21.0-24.5: biff wackestone, burrowed 10.4-2.10: biff wackestone and mudstone, finable at base, burrowed 3.02-63.9 Buff motifd wackestone, burrowed 10.4-2.10: biff wackestone, burrowed 10.4-2.5: biff wackestone, burrowed 10.4-2.5: biff wackestone, burrowed 11.6-2-028-01W ORDOVICIAN 3.02-63.9							
M-02-00 15:-06-41.03W SILURIAN/Interfake Group/ 0.0-4.2 166.4-170.5 166.4-169.4: Regolitit, white to grey, fine- to coarse-grained, severely kaolinized, unconsolidated rock 169.4-170.5: homblende granodiomie: light grey to green, coarse- to very coarse grained, poorly folidated to massive rock: composition: homblende 10-30% (1-10 mm in size). uquart and feldspar M-02-00 15:-06-41-09W SILURIAN/Interfake Group/ 5816175N 0.0-4.2 Buff wackestone and packstone, abundant Dancing Pt. 15:-06-41-09W SILURIAN/Interfake Group/ 5816175N 0.0-4.2 Buff wackestone and packstone, abundant 237.7 m Storewall 4.2-30.2 4.2-5.4: Storewall Marker: brown mudstone, 54-6.8: bulf mudstone 6.8-10.4: T-20:-bule-grey marker bed, mudstone 10.2-24: 5: bulf wackestone, and usotine, 21.5-24: 5: bulf wackestone, porous 21.0-21: 5: bule-grey marker bed, mudstone (Williams) 30.2-63:9 Buff motted wackestone (lower Red River) 63.9-82.5 Interbedded laminated mudstone, brown to grey 21.5-24:5: bulf wackestone, porous 21.5-24:5: bulf wackestone, finable at base, becoming consolidated at top M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-1.3 Buff motted wackestone (Tyndall Stone), cherty, very porous <t< td=""><td></td><td></td><td></td><td></td><td>156.6–159.2: Light grey, fine-grained sandstone</td></t<>					156.6–159.2: Light grey, fine-grained sandstone		
M-02-00 15-06-41-09W SILURIAN/Interfake Group/ Fisher Branch 168.4–170.5 168.4–170.5 168.4–170.5 Severey kaolinized, uncossidiated nock togst-170.5: Homblende granodiorite: light grey to green, coarse to very coarse grained, poorty foliated to massive rock: composition: homblende 10–30% (1–10 mm insize), quartz and feldspar M-02-00 15-06-41-09W SILURIAN/Interfake Group/ Fisher Branch 0.0–4.2 Buff wackestone and packstone, abundant Virgiane S117125E ORDOVICIAN-SILURIAN/ 4.2–30.2 Buff wackestone and packstone, abundant 237.7 m Stonewall 4.2–5.4: Storewall Si-4–68: buff wackestone, provus 237.7 m Stonewall 4.2–5.4: Storewall Storewall Virgiane (Williams) 24.5–30.2: brown to grey, laminated mudstone, 21.0–21.5: blue-grey mudstone, burrowed 10.4–21.0: buff wackestone, provus (lower Red River) 82.5–146.5 Mottled wackestone, burrowed (lower Red River) 82.5–146.5 Mottled wackestone, burrowed 145.5–148.5: Green-grey to black-grey shale with some siltione, burrowed Lake 6052500 (Fort Garry) 11.9–87.7 Buff mottled wackestone (Tyndall Stone), chery, very porous M-03-00 16-20-28-01W					159.2–162.3: 10 cm of fine-grained brown sandstone (?infill)		
M-02-00 15-06-41-09W SILURIAN/Interlake Group/ 0.0-4.2 Bids.4-170.5 H forbidined granoitoritie: light grey to green, coarse- to very coarse grained, poorly foliated to massive rock; composition: homblende 10-30%, (1-10 mm in size), quartz and feldspar M-02-00 15-06-41-09W SILURIAN/Interlake Group/ 0.0-4.2 Buff wackestone and packstone, abundant Dancing Pi 5516175N Fisher Branch Virgiana 237.7 m Stonewall 4.2-30.2 4.2-5.4: Stonewall Marker: brown mudstone, 10.4-21.0: buff wackestone, abundant 237.7 m Stonewall 4.2-30.2 4.2-5.4: Stonewall Marker: brown mudstone, 10.4-21.0: buff wackestone, porous 237.7 m Stonewall 4.2-30.2 4.2-5.4: Stonewall Marker: brown mudstone, 10.4-21.0: buff wackestone, porous 21.0-2.15: bluegrey marker bed, mudstone 6.8-10.4: T-Zone; bluegrey marker bed, mudstone 10.4-21.0: buff wackestone, porous (Williams) 30.2-63.9 Buff mottled wackestone, burrowed 10.4-21.0: buff wackestone, burrowed (lower Red River (Ford Garry) 63.9-25.5 Mottled wackestone, burrowed 14.5-151.8: White quartzoe sandstone, friable at base, becoming consolidated mudstone Lake 66.9-20-501W ORDOVICIAN 0.0-11.9 Buff mottled wackestone (Tyndall Stone)					162.3–165.3: light grey, fine-grained sandstone (10 cm of core)		
M-02-00 15-06-41-09W SiLURIAN/Interlake Group/ 0.0-4.2 Buff wackestone and packstone, abundant Dancing Pt. 5516175N Fisher Branch Virgiana 517125E ORDOVICIAN-SILURIAN/Interlake Group/ 0.0-4.2 Buff wackestone and packstone, abundant 237.7 m Stonewall 4.2-30.2 4.2-5.4: Stonewall Marker: brown mudstone, 5.4-6.8: buff mudstone 6.8-10.4: T-Zone: blue-grey mudstone, burrowed 10.4-21.0: buff wackestone, porous 21.5-24.5: buff mudstone 6.8-10.4: T-Zone: blue-grey mudstone, burrowed 10.4-21.0: buff wackestone, porous 21.5-24.5: buff mudstone (Williams) 30.2-63.9 Buff mottled wackestone Red River(Fort Garry) 63.9-82.5 Interbedded laminated mudstone (lower Red River) 82.5-146.5 Mottled wackestone, burrowed High Rock 5697600N Red River (lower) 24.5-30.2: burre grey to black-grey shale with some silitone, burrowed High Rock 5697600N Red River (lower) Buff mottled wackestone [Tyndall Stone], cherty, very porous Lake 606250E (Fort Garry) 11.9-98.7 Buff mottled wackestone [Tyndall Stone], cherty, very porous Burorous 11.9-98.7 Bul					165.4–168.4: no core		
M-02-00 15-06-41-09W SILURIAN/Interlake Group/ 0.0-4.2 Buff wackestone and packstone, abundant Dancing Pr. 5816175N Fisher Branch Virgiana 571725C ORDOVICIAN-SILURIAN/ 4.2-30.2 Buff wackestone and packstone, abundant 237.7 m Stonewall 4.2-30.2 Buff wackestone, abundant 237.7 m Stonewall 4.2-30.2 5.4-6.8: buff wackestone, prous 21.0-21.5: buff wackestone, porous 21.0-21.5: buff wackestone, porous 21.0-21.5: buff wackestone, porous 21.0-21.5: buff wackestone, porous 21.0-21.5: buff wackestone, porous 21.0-21.5: buff wackestone, porous 21.0-21.5: buff wackestone, porous 21.0-21.5: buff wackestone, porous 21.0-21.5: buff wackestone, porous 21.0-21.5: buff wackestone, porous 21.0-21.5: buff wackestone, porous 21.0-21.5: buff wackestone, porous 21.0-21.5: buff wackestone, porous 21.0-21.5: buff wackestone, porous 21.0-21.5: buff wackestone, porous 8.00 (Williams) 30.2-63.9 Buff motiled wackestone, porous 21.0-21.5: buff wackestone, porrous 9.01 (Williams) 82.5-14.63: Wiff water wackestone, burrowed 14.95-151.8 146.5-149.5: Green-grey to black-grey shale with some sittstone			PRECAMBRIAN	168.4–170.5	168.4–169.4: Regolith: white to grey, fine- to coarse-grained,		
M-02-00 15-06-41-09W SILURIAN/Interlake Group/ Fisher Branch 0.0-4.2 Buff wackestone and packstone, abundant Dancing Pt. 5516175N Fisher Branch Virgiana 517125E ORDOVICIAN-SILURIAN/ 4.2-30.2 4.2-54.5tonewall Marker: brown mudstone, broken core 237.7 m Stonewall 4.2-30.2 4.2-54.5tonewall Marker: brown mudstone, broken core 6.8-10.4.1-720ne: blue-grey mudstone, burrowed 10.4-21.0: buff wackestone, porous 21.0-21.5: blue-grey mudstone, burrowed 10.4-2.10: buff wackestone, porous 21.0-21.5: blue-grey mudstone, burrowed 10.4-2.5: buff wackestone, porous 21.0-21.5: blue-grey mudstone, burrowed 10.4-2.5: buff wackestone, porous 21.0-21.5: blue-grey mudstone, burrowed 10.4-2.6: buff wackestone and mudstone 21.5-30.2: brown to grey, laminated mudstone (Williams) 30.2-63.9 Buff muttled wackestone 11.9 Ked River/(Fort Garry) 82.5-146.5 Mottled wackestone, burrowed 1149-615.8: White quartzose sandstone, friable at base, becoming consolidated at top M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-11.9 Blue-grey mudstone, some sand, sharp contact 149.5-113: White quartzose sandstone, friable at base, becoming consolidated at top M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-11.9 Blue-grey mudstone (shale) and siltstone, burrowed					severely kaolinized, unconsolidated rock		
M-02-00 15-06-41-09W SILURIANVInterlake Group/ 0.0-4.2 Buff wackestone and packstone, abundant Dancing PL 5816175N Fisher Branch Virgiana 237.7 m Stonewall 4.2-5.4: Stonewall Marker: brown mudstone, 237.7 m Stonewall 4.2-5.4: Stonewall Marker: brown mudstone, 237.7 m Stonewall 4.2-5.4: Stonewall Marker: brown mudstone, 6.8-10.4: T-Zone: blue-grey mudstone, burrowed 10.4-21.0: buff wackestone, porous 21.5-24.5: blue-grey mudstone, burrowed 10.4-21.5: blue-grey mudstone, burrowed 10.4-21.5: blue-grey mudstone, burrowed 10.4-21.5: blue-grey mudstone, burrowed 10.4-21.5: blue-grey mudstone, burrowed 10.4-21.5: blue-grey mudstone, burrowed 10.4-21.5: blue-grey mudstone, burrowed 10.4-21.5: blue-grey mudstone, burrowed (Williams) 30.2-63.9 Buff motted wackestone 10.4: T-Zone: blue-grey mudstone, burrowed 10.4-51.5: Winte quartzos sandstone, friable at base, burrowed (Wore Red River) 82.5-146.5 Mottled wackestone, burrowed High Rock StopStonov Red River (lower) 144.5-151.8 Lake 144.5-5149.5: Green-grey to black-grey shale with some siltstone, burrowed Lake Winnipeg 98.7-127.2 Buff mottled wackestone (Tyndall Stone), cherty, very porous Lake Winnipeg					169.4–170.5: Hornblende granodiorite: light grey to green,		
M-02-00 Dancing Pi15-06-41-09W S161075NSILURIAN/Interlake Group/ Fisher Branch0.0-4.2Buff wackestone and packstone, abundant VirgianaDancing Pi5811075N S17125EORDOVICIAN-SILURIAN/ Stonewall4.2-30.24.2-5.4.2Stonewall Marker: brown mudstone, broken core 5.4-6.8: buff mudstone 6.8-10.4: T-Zone: blue-grey mudstone, burrowed 10.4-21.0: buff wackestone, porous 21.0-21.5: blue-grey marker bed, mudstone 21.5-24.5: buff wackestone, porous 21.0-21.5: blue-grey marker bed, mudstone 21.5-24.5: buff wackestone, porous 21.0-21.5: blue-grey marker bed, mudstone 21.5-24.5: buff wackestone, burrowedM-04-00KWilliams)30.2-63.9Buff mottled wackestone and mudstone 21.5-24.5: buff wackestone, burrowedKWilliams)63.9-82.5Interbeddel laminated mudstone, brown to grey (lower Red River)63.9-82.5Interbeddel laminated mudstone, brown to grey 146.5-151.8: White quartzose sandstone, friable at base, becoming consolidated at topM-03-0016.20-28-01WORDOVICIAN/ Red River (lower)0.0-11.9Buff mottled wackestone (Tyndall Stone), cherty, very prorousLake606250E(Fort Garry)11.9-98.7Buff mottled wackestone (Tyndall Stone), cherty, very prorousLake606250E(Fort Garry)11.9-98.7Buff mottled wackestone (Tyndall Stone), cherty, very prorousVery prorous98.7-103.8: green mudstone, some sand, sharp contact 10.3-21.14.0: brown to grey mudstone (shale) and siltstone, burrowedM-03-00652-0-65.16WORDOVICIAN/ Vinnipeg0-0-0.85Beje muted dolomiteM-04-00652-0-55.16WORDOVICIAN					coarse- to very coarse grained, poorly foliated to massive		
M-02-00 Dancing Pi15-06-41-09W S161075NSILURIAN/Interlake Group/ Fisher Branch0.0-4.2Buff wackestone and packstone, abundant VirgianaDancing Pi5811075N S17125EORDOVICIAN-SILURIAN/ Stonewall4.2-30.24.2-5.4.2Stonewall Marker: brown mudstone, broken core 5.4-6.8: buff mudstone 6.8-10.4: T-Zone: blue-grey mudstone, burrowed 10.4-21.0: buff wackestone, porous 21.0-21.5: blue-grey marker bed, mudstone 21.5-24.5: buff wackestone, porous 21.0-21.5: blue-grey marker bed, mudstone 21.5-24.5: buff wackestone, porous 21.0-21.5: blue-grey marker bed, mudstone 21.5-24.5: buff wackestone, burrowedM-04-00KWilliams)30.2-63.9Buff mottled wackestone and mudstone 21.5-24.5: buff wackestone, burrowedKWilliams)63.9-82.5Interbeddel laminated mudstone, brown to grey (lower Red River)63.9-82.5Interbeddel laminated mudstone, brown to grey 146.5-151.8: White quartzose sandstone, friable at base, becoming consolidated at topM-03-0016.20-28-01WORDOVICIAN/ Red River (lower)0.0-11.9Buff mottled wackestone (Tyndall Stone), cherty, very prorousLake606250E(Fort Garry)11.9-98.7Buff mottled wackestone (Tyndall Stone), cherty, very prorousLake606250E(Fort Garry)11.9-98.7Buff mottled wackestone (Tyndall Stone), cherty, very prorousVery prorous98.7-103.8: green mudstone, some sand, sharp contact 10.3-21.14.0: brown to grey mudstone (shale) and siltstone, burrowedM-03-00652-0-65.16WORDOVICIAN/ Vinnipeg0-0-0.85Beje muted dolomiteM-04-00652-0-55.16WORDOVICIAN					rock; composition: hornblende 10–30% (1–10 mm in size),		
M-02-00 15-06-41-09W SLURIAN/Interlake Group/ Stift7SN 0.0-4.2 Buff wackestone and packstone, abundant Dancing Pt 581617SN Fisher Branch Virgiana S1712SE ORDOVICIAN-SILURIAN/ 4.2-30.2 4.2-36.3 Stonewall 237.7 m Stonewall 54-6.8: buff mudstone 6.8-10.4: T-Zone: blue-grey mudstone, burrowed 10.4-21.0: buff wackestone, porous 6.8-10.4: T-Zone: blue-grey mudstone, burrowed 10.4-21.0: buff wackestone, porous 21.5-21.5: blue-grey marker bed, mudstone 21.5-21.5: blue-grey marker bed, mudstone 21.5-21.5: blue-grey marker bed, mudstone 21.5-21.5: buff wackestone and mudstone 21.5-21.5: buff wackestone and mudstone 21.5-21.5: buff wackestone KWilliams) 30.2-63.9 Buff mottled wackestone 21.5-21.5: buff wackestone KWilliams) 63.9-82.5 Interbedded laminated mudstone, brown to grey (lower Red River) 82.5-146.5 Mottled wackestone, burrowed Winnipeg 146.5-151.8 Bifstore.161.8: White quartzose sandstone, friable at base, becoming consolidated at top M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-11.9 Blue-grey laminated mudstone Lake 5697600N (Fort Garry) 11.9-98.7 Buff mottled wackestone (Tyndall Stone), cherty, very prorus 225 m Winnipeg 98.7-127.2 98.7-103.8: green mudstone, some sand, sharp contact 103.							
Dancing Pt. \$816175N Fisher Branch Virgiana S17125E ORDOVICIAN-SILURIAN/ 237.7 m 4.2-3.0.2 4.2-5.4: Stonewall Marker: brown mudstone, broken core 237.7 m Stonewall 4.2-30.2 4.2-5.4: Stonewall Marker: brown mudstone, broken core 237.7 m Stonewall 4.2-30.2 4.2-5.4: Stonewall Marker: brown mudstone, brown core 24.6-32: brown bug rey mudstone, burrowed 10.4-21.0: buff wackestone, porous 21.0-21.5: blue-grey mudstone, burrowed 10.4-23.0: brown to grey, laminated mudstone Williams) 30.2-63.9 Buff mottled wackestone Ked River/(Fort Garry) 63.9-82.5 Interbedded laminated mudstone, brown to grey (lower Red River) Winnipeg 146.5-151.8 146.5-149.5: Green-grey to black-grey shale with some siltstone, burrowed M-03-00 16-20-28-01W ORDOVICIAN 0.0-11.9 High Rock 5697600N Red River (lower) 24.5-32.2 Lake Very porous Very porous Very porous Winnipeg 98.7-127.2 98.7-103.8: green mudstone, some sand, sharp contact (103.8-114.0: brown to grey mudstone, some sand, sharp co	M-02-00	15-06-41-09W	SILURIAN/Interlake Group/	0.0-4.2			
517125E ORDOVICIAN-SILURIAN/ 4.2-30.2 4.2-5.4: Stonewall Marker: brown mudstone, 237.7 m Stonewall broken core 237.7 m Stonewall 6.4-6.8: buff mudstone 6.4-0.4: T-Zone: blue-grey marker bed, mudstone 0.4-21.0: buff wackestone, porous 21.0-21.5: blue-grey marker bed, mudstone 21.5-24.5: buff wackestone and mudstone 21.5-24.5: buff wackestone and mudstone 21.5-24.5: buff wackestone, porous 21.0-21.5: blue-grey marker bed, mudstone 21.5-24.5: buff wackestone Kony Mountain 30.2-63.9 Buff mottled wackestone Williams) Stony Mountain 30.2-63.9 Red River/(Fort Gary) 63.9-82.5 Interbedded laminated mudstone, brown to grey (lower Red River) 82.5-146.5 Mottled wackestone, burrowed 149.5-151.8: White quartzose sandstone, friable at base, becoming consolidated at top becoming consolidated at top M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-11.9 Buff mottled wackestone (Tyndall Stone), cherty, very porous 225 m Winnipeg	Dancing Pt.	5816175N			•		
M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-11.9 Bule model modelsone (Transmitter for the second point) M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-11.9 Bule modelsone (Transmitter for the second point) M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-01.9 Bule modelsone (Transmitter for the second point) M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-01.9 Bule modelsone (Transmitter for the second point) M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-01.9 Bule modelsone (Transmitter for the second point) M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-01.9 Bule grey laminated mudstone, burrowed High Rock 56057600 Red River (Iower) 1.19-98.7 Bulf mottled wackestone (Transmitter for the second point) Lake Winnipeg 98.7-127.2 98.7-103.8: green mudstone, some sand, sharp contact 10.3-6114.0: brown to grey mudstone (shale) and siltstone, burrowed 10.0-127.2: white quartzose sandstone 10.0-11.9 M-04-00 05-20-55-16W ORDOVICIAN/ 0.0-0.85 Beige motted dolomite Wekusko 6054470N Red River (Hecla Beds) 10.0-21.7.2	J		ORDOVICIAN-SILURIAN/	4.2-30.2	-		
M-03-00 16-20-28-01W ORDOVICIANV 0.0-11.9 Blue-grey laminated mudstone, burrowed High Rock 5697600N Red River (fort Garry) 11.9-98.7 Buff mottled wackestone (Tyndall Stone), cherty, very porous High Rock 5697600N Red River (fort Garry) 0.0-11.9 Buff mottled wackestone (Tyndall Stone), cherty, very porous M-03-00 16-20-28-01W ORDOVICIANV 0.0-11.9 Blue-grey laminated mudstone, brown to grey shale with some siltstone, burrowed High Rock 5697600N Red River (lower) 2.5-146.5 Muttled wackestone M-03-00 16-20-28-01W ORDOVICIANV 0.0-11.9 Blue-grey laminated mudstone High Rock 5697600N Red River (lower) 21.5-22.5 Story porous Winnipeg 98.7-127.2 98.7-103.8: green mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone (shale) and siltstone, burrowed Hugh Rock 05-20-65-16W ORDOVICIANV 0.0-0.85 Beige mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone (shale) and siltstone, burrowed M-04-00 05-20-65-16W ORDOVICIANV 0.0-0.85 Beige mudstone dolomite		237.7 m	Stonewall		broken core		
M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-11.9 Buef mottled wackestone, porous High Rock 5607600N Red River (lower) 82.7-127.2 82.7-103.8: green mudstone, brown to grey Lake 16-20-26-516W ORDOVICIAN/ 0.0-11.9 Buef mottled wackestone (Tyndall Stone), cherty, very porous M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-11.9 Buef mottled wackestone (Tyndall Stone), cherty, very porous Lake 5607600N Red River (lower) 11.9-98.7 Buff mottled wackestone, formadstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone, shale and siltstone, burrowed M-04-00 05-20-65-16W ORDOVICIAN/ 0.0-0.85 Beige mottled dolomite					5.4–6.8: buff mudstone		
M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-11.9 Bulf mottled wackestone (Tyndall Stone), cherty, erey porous High Rock 5607600N Red River (lower) 0.0-0.85 Bulf mottled wackestone M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-11.9 Blue-grey laminated mudstone, cherty, irey porous High Rock 5607600N Red River (lower) 0.0-11.9 Bulf mottled wackestone (Tyndall Stone), cherty, irey porous Lake Winnipeg 11.9-98.7 Bulf mottled wackestone (Tyndall Stone), cherty, irey porous Winnipeg 98.7-127.2 98.7-127.2 98.7-114.0: brown to grey mudstone (shale) and siltstone, burrowed M-04-00 05-20-65-16W ORDOVICIAN/ 0.0-0.85 Beige mottled dolomite M-04-00 05-20-65-16W ORDOVICIAN/ 0.0-0.85 Beige mottled dolomite					6.8–10.4: T-Zone: blue-grey mudstone, burrowed		
M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-11.9 Buff mottled wackestone (Tyndall Stone), cherty, very porous High Rock 5097600N Red River (lower) 11.9-98.7 Buff mottled wackestone (Tyndall Stone), cherty, very porous M-04-00 05-20-65-16W ORDOVICIAN/ 0.0-0.85 Buff mottled wackestone (Tyndall Stone), cherty, very porous M-04-00 05-20-65-16W ORDOVICIAN/ 0.0-0.85 Buff mottled wackestone (Tyndall Stone), cherty, very porous M-04-00 05-20-65-16W ORDOVICIAN/ 0.0-0.85 Buff mottled wackestone (Tyndall Stone), cherty, very porous							
(Williams) 24.5-30.2: brown to grey, laminated mudstone Stony Mountain 30.2-63.9 Buff mottled wackestone Red River/(Fort Garry) 63.9-82.5 Interbedded laminated mudstone, brown to grey (lower Red River) 82.5-146.5 Mottled wackestone, burrowed Winnipeg 146.5-151.8 146.5-149.5: Green-grey to black-grey shale with some siltstone, burrowed M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-11.9 High Rock 5697600N Red River (lower) Blue-grey laminated mudstone, cherty, very porous Lake 606250E (Fort Garry) 11.9-98.7 Buff mottled wackestone (Tyndall Stone), cherty, very porous Winnipeg 98.7-127.2 98.7-103.8: green mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone (shale) and siltstone, burrowed 114.0-127.2: white quartzose sandstone M-04-00 05-20-65-16W ORDOVICIAN/ 0.0-0.85 Beige mottled dolomite Wekusko 6054470N Red River (Hecla Beds) Beige mottled dolomite					21.0–21.5: blue-grey marker bed, mudstone		
N-03-0016-20-28-01WCRDOVICIAN/0.0–11.9Buff mottled wackestone (Tyndall Stone), cherty, very porousHigh Rock Lake606250E(Fort Garry)11.9–98.7Buff mottled wackestone (Tyndall Stone), cherty, very porousWinnipeg11.9–98.7Buff mottled wackestone (Tyndall Stone), cherty, very porousWinnipeg0.0–11.9Bile-mudistone, some sand, sharp contact 103.8–114.0: brown to grey mudstone (shale) and siltstone, burrowedM-03-0016-20-28-01W(Fort Garry)11.9–98.7Buff mottled wackestone (Tyndall Stone), cherty, very porousWinnipeg98.7–127.298.7–103.8: green mudstone, some sand, sharp contact 103.8–114.0: brown to grey mudstone (shale) and siltstone, burrowedM-04-0005-20-65-16WORDOVICIAN/0.0–0.85Beige mottled dolomite					21.5–24.5: buff wackestone and mudstone		
Red River/(Fort Garry) (lower Red River)63.9-82.5 82.5-146.5Interbedded laminated mudstone, brown to grey Mottled wackestone, burrowedWinnipeg146.5-151.8146.5-149.5: Green-grey to black-grey shale with some siltstone, burrowedM-03-0016-20-28-01W 5697600NORDOVICIAN/ Red River (lower)0.0-11.9High Rock Lake5697600N 225 m(Fort Garry)11.9-98.7Winnipeg98.7-127.298.7-103.8: green mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone (shale) and siltstone, burrowedM-04-0005-20-65-16WORDOVICIAN/ ORDOVICIAN/0.0-0.85M-04-0005-20-65-16WORDOVICIAN/ Red River (Hecla Beds)0.0-0.85			(Williams)		24.5-30.2: brown to grey, laminated mudstone		
M-03-00 16-20-28-01W ORDOVICIAN/ 0.0-11.9 Blue-grey laminated mudstone High Rock 5697600N Red River (lower) 11.9-98.7 Buff mottled wackestone, friable at base, becoming consolidated at top Lake 606250E (Fort Garry) 11.9-98.7 Buff mottled wackestone (Tyndall Stone), cherty, very porous Winnipeg 98.7-127.2 98.7-103.8: green mudstone, some sand, sharp contact 103.8-114.0: brown to grey mudstone (shale) and siltstone, burrowed M-04-00 05-20-65-16W ORDOVICIAN/ 0.0-0.85 M-04-00 05-20-65-16W ORDOVICIAN/ 0.0-0.85			Stony Mountain	30.2-63.9	Buff mottled wackestone		
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606250E (Fort Garry) 11.9–98.7 Buff mottled wackestone (Tyndall Stone), cherty, very porous 225 m winnipeg 98.7–127.2 98.7–103.8: green mudstone, some sand, sharp contact Minnipeg 98.7–127.2 98.7–103.8: green mudstone, some sand, sharp contact 103.8–114.0: brown to grey mudstone (shale) and siltstone, burrowed 114.0–127.2: white quartzose sandstone M-04-00 05-20-65-16W ORDOVICIAN/ 0.0–0.85 Beige mottled dolomite Wekusko 6054470N Red River (Hecla Beds) Toto – 0.85 Beige mottled dolomite	High Rock	5697600N	Red River (lower)				
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M-04-00 05-20-65-16W ORDOVICIAN/ 0.0–0.85 Beige mottled dolomite Wekusko 6054470N Red River (Hecla Beds)		225 m			very porous		
M-04-00 05-20-65-16W ORDOVICIAN/ 0.0–0.85 Beige mottled dolomite Wekusko 6054470N Red River (Hecla Beds)			Winnipeg	98.7-127.2	98.7-103.8: green mudstone, some sand, sharp contact		
M-04-00 05-20-65-16W ORDOVICIAN/ 0.0-0.85 Beige mottled dolomite Wekusko 6054470N Red River (Hecla Beds) Ender State					103.8–114.0: brown to grey mudstone (shale) and siltstone,		
M-04-0005-20-65-16WORDOVICIAN/0.0-0.85Beige mottled dolomiteWekusko6054470NRed River (Hecla Beds)					burrowed		
Wekusko 6054470N Red River (Hecla Beds)					114.0-127.2: white quartzose sandstone		
	M-04-00	05-20-65-16W	ORDOVICIAN/	0.0-0.85	Beige mottled dolomite		
Lake S	Wekusko	6054470N	Red River (Hecla Beds)				
400							

Table GS-31-2: Summary of stratigraphic corehole data, 2000. (continued)						
Hole no.	Location and	SYSTEM/Formation/	Interval	Lithology summary		
	elevation (m)	(Member)	(m)			
	445016E	Winnipeg	0.85–0.92	Sandstone, pyritic with dolomite clasts		
	266.7 m	PRECAMBRIAN	0.92–14.35	0.92–5.25: light green-grey sericite schist, vertically sheared		
				(missing 2 m of core)		
				5.25–7.35: Granite schist, steeply dipping		
				7.35-8.45: Soft sericite schist (only 0.27 m of core)		
				8.45–14.35: Steeply dipping granite schist		
M-05-00	01-05-33-19W	DEVONIAN/Souris River	0.0-20.2	Fine-grained dolomite		
Pine River	5739324N	(Sagamace)	20.2-27.1	Dolomitic shale, limestone and breccia		
	423445E	(Point Wilkins)	27.1–45.9	Dolomite, brecciated		
	262 m	(First Red Beds)	45.9-56.6	Shale breccia with disturbed bedding		
		Dawson Bay				
			56.6–69.8	Limestone, some dolomite		
			69.8–82.8	Calcareous shale, green-grey to purple		
			82.8–94.8	Limestone, brachiopod rich		
		(Second Red Beds)	94.8-106.7	Polymict collapse breccia		
		Winnipegosis	106.7-112.7	Dolomite breccia, fossiliferous		
		(Transition Beds)				
		(Upper)	112.7-117.1	Dolomite, bituminous, black mineralization (sphalerite)		
		(Lower)	117.1–121.1	Platform Facies, dolomite, vuggy and nodular		

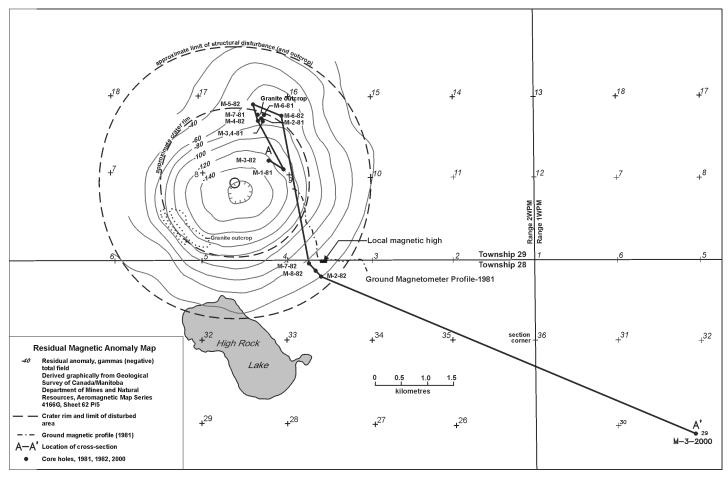


Figure GS-31-2: Location of coreholes in the High Rock Lake structure magnetic map and of cross-section A-A' (after McCabe, 1982).

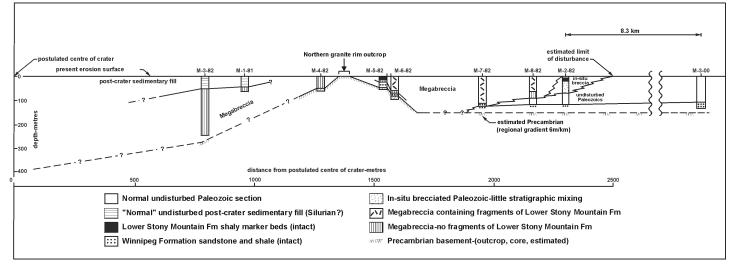


Figure GS-31-3: Cross-section A-A' (after McCabe, 1982).

representing a crypto-explosion meteorite-impact structure (McCabe, 1981). Two Precambrian granite inliers are approximately 180 m above their expected position in the regional structure. As well, disturbed Paleozoic outcrops exist north and west of the granite outcrops. The structurally disturbed area is shown to be coincident with a well defined aeromagnetic low (McCabe, 1981).

Corehole M-3-00 was drilled to provide an undisturbed reference hole in the High Rock Lake area. It was hoped that the hole would reach the Precambrian, but it encountered unconsolidated sand in the Winnipeg Formation and drilling had to be terminated prematurely. The hole is undisturbed and does not appear to be affected by the High Rock Lake structure (Fig. GS-31-3).

Wekusko Lake South

In July 1999, mineralized fractures were noted within Ordovician Red River Formation dolomite in a Manitoba Highways quarry (UTM 14, E445016, N6054470), located south of Wekusko Lake and Provincial Trunk Highway 39. Located near the east wall of the quarry, two parallel fractures, trending 085°, are spaced 3 m apart and are intersected by another fracture trending 170°. Mineralization occurs in the dolomite along the trend of the fractures over a width of 10 cm on either side of the fractures. The mineralization appears as vuggy, mauve to reddish brown or dark grey clots and sinuous stringers, with minor bright blue-green– (bornite and azurite) and brass-coloured (pyrite) crystals that appear along subfractures and within healed dendritic tendrils. A sample was sent to Activation Laboratories Ltd. for analysis by neutron activation and ICP in 1999. The values indicate a relative enrichment in Pb, Hg, Cu, Sr, As and Co. An additional sample was sent to the same laboratory early in 2000, and the results confirmed the enrichment.

Corehole M-4-00 was drilled to a depth of 14.4 m to intersect the mineralization, but only thin clots and veinlets were found near the top of the hole. A total of 13.4 m of Precambrian was intersected, a highly foliated sericite schist.

Camperville Gravity Low

The Pine River Junction corehole M-5-00 was drilled through 121.0 m of Devonian stratigraphy to verify the presence of sphalerite originally encountered in corehole M-6-80. The honey-coloured sphalerite was found in the Upper Member of the Winnipegosis Formation (McCabe, 1980; Gale and Conley, 2000). In hole M-5-00, black mineralization was encountered at the same stratigraphic level as in hole M-6-80, and appears to be the 'blackjack' form of sphalerite. No honey-coloured sphalerite was found in hole M-5-00. For further information, see Bamburak et al. (GS-32, this volume).

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