BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

Appendix C

CKD Stockpile Report

Golder Associates Ltd.

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March 3, 2005 04-1112-047

St. Marys Cement Company
410 Waverley Road, R.R. #2
Bowmanville, Ontario
L1C 3K3

Attention: Austin MacMurdo, Lands Manager

RE: CKD STOCKPILE, ST MARYS PLANTSITE

Dear Sir,

Further to your request, Golder Associates Ltd. (Golder) has prepared the following summary of the results of the investigation of the Cement Kiln Dust (CKD) stockpile located within the potential landfill donation area at the St.Marys plant site. The area is located immediately adjacent to (east of) the existing Town of St Marys municipal landfill as shown on Figure 1.

The purpose of the investigation was to established the stratigraphy and environmental quality of the material comprising the CKS stockpile and the physical nature of the native soil and bedrock that underlies the area.

▪ BOREHOLE DRILLING

The investigation included drilling five boreholes (MW04-01 through MW04-05) between July 30 and August 12, 2004 at the locations shown on Figure 2. Detailed Records of Boreholes are provided in Appendix A. Borehole MW04-01 to MW04-03 were drilled through the CDK stockpile terminating approximately 1.5 m within the underlying native soil. Monitoring wells were installed in each of these boreholes.

Boreholes MW04-04 and MW04-05 were drilled through the base of the former clay pit area directly south of the CKD stockpile and completed 12 to 13 m into the underlying bedrock. A bottom monitoring well was installed in MW04-04 at the existing landfill boundary while MW04-05 was cement grouted from the bottom of the hole to ground surface. The boreholes were surveyed in location and elevation to the geodetic datum.

▪ GEOTECHNICAL SAMPLING

The soil core samples obtained from boreholes MW04-04 and MW 04-05 were analyzed by seive-hydrometer methods to determine the soil granularity (see Figure A-1 through A-7 in Appendix A). Selected samples of the Upper and Lower Glacial Till horizons were also tested for Attenburg limits and the results are presented on plasticity charts on Figures A-8 and A-9 respectively.

▪ ENVIRONMENTAL SAMPLING

The samples from the three boreholes drilled through the CKD stockpile (MW04-01 to MW04-03) were split into upper and lower halves forming six composite samples for chemical analysis. This included total metals by aquarega digestion (Table 1A), total petroleum hydrocarbons by solvent organic extraction (Table 1B), polychlorinated biphenyls (Table 1C) and polyaromatic hydrocarbons (Table 1D).

Groundwater samples were obtained from monitoring wells MW04-01 and MW04-03 in the CKD stockpile and the bedrock monitoring well MW04-04. The samples were analysed for a suite of chemical parameters including major ions and heavy metals as summarized on Table 2A. The water samples were also analyzed for polychlorinated biphenyls (Table 2B) and polyaromatic hydrocarbons (Table 2C).

One soil sample of CKD (MW04-01 Upper) was collected for TCLP leach analyses (Table 3) considering that the sample was the only sample with aquarega leach Table B exeedences for metals.

All soil and water samples were compared to Ministry of Environment Table B guidelines as indicated on the various tables noted.

▪ SUMMARY OF CKD STOCKPILE RESULTS

The CKD material was found to be in the range of 10 to 16 m thick at the location drilled. The material encountered included CKD and some native fill soil. The only refuse material noted was a few paper cement bags. The base of the CKD was encountered between elevations of 313 and 319 m while the crest of the pile is approximately 332 m. The surface of the stockpile has been contoured and a thin 0.2 to 0.3 m layer of topsoil has been placed and vegetated.

The total volume of CKD estimated from the surface continuous and the base was approximately 350,000 to 400,000 m^3.

Saturated conditions were encountered in the CKD stockpile at various depths associated with perched conditions where CDK overlay silt till material. The monitoring walls indicated watertable conditions below depths of 10 to 12 m corresponding to elevations of approximately 317 to 322 m, being at or up to 4 m above the base of the pile.

From an environmental quality perspective, one composite sample of CKD (MW04-01 Upper) encountered minor metal exceedences for cadmium (13.2 and 14.1 µg/g compared to a Table B guidelines of 12 µg/g) and lead (1160 and 1210 µg/g compared to a Table B guideline of 1000 µg/g) as outlined on Table 1A. There were no Table B exceedences for total petroleum hydrocarbons (Table 1B) and no detections (less than 0.05 µg/g) for polychlorinated biphenyls. The test results for polyaromatic hydrocarbons did not encounter any Table B criteria exceedences (Table 1D). There were no TCLP leach test exceedences (Table 3).

The chemistry obtained from the CDK groundwater samples is summarized on Table 2A. The groundwater was characterized by an alkaline pH of 10, high TDS (29,000 to 42,000 µg/L), high sulphate (13,000 to 19,000 µg/L), elevated chloride (2,000 µg/L to 4,000 µg/L) and the primary cations being potassium (12,000 to 19,000 µg/L) and sodium (1,000 to 2,000 µg/L). There were no Table B criteria exceedences except for two apparent exceedences related to detection limits for selenium (<0.2 µg/L compared to 0.05 µg/L criteria) and silver (<0.01 µg/L compared to 0.0012 µg/L criteria) as indicated on Table 2A. It is extremely unlikely that silver is present given the presence of elevated chloride. No polychlorinated biphenyls were detected in the CKD groundwater samples (Table 2B) while only trace levels of the PAH's 2-methylnapthalene and phenanthrene were detected but well below Table B guideline criteria (Table 2C).

▪ SOIL AND BEDROCK CONDITIONS

The general soil and bedrock conditions beneath the potential donation area are shown on Section A-A[1] on Figure 4. The soils consist of an Upper and Lower Glacial Till horizons that may correspond to the St Mary's Till and the Catfish Creek Till respectively. As indicated by the grain size distribution curves on Figure A-1 to A-7 in Appendix A, the tills are well graded and clayey. The clay size formation of the Upper Till is in the range of 15 to 40 percent while in the Lower Till it varies between approximately 8 to 15 percent. The tills are both massive textured and given the granularity, they are also considered to be of quite low permeability.

The inferred overburden thickness within the potential donation area is shown on Figure 5. As indicated, the CKD stockpile sits on approximately 14 to 20 m of overburden comprised of the glacial tills. The donation area to the south of the stockpile is underlain by approximately 14 to 18 m of glacial till with some areas of thin surficial granular fill material.

The underlying bedrock is comprised by fractured dolomitic limestone and dolostone of the Lucas Formation Detailed descriptions are provided on the Record of Borehole sheets in Appendix A.

Both the glacial till and the bedrock have been truncated by the quarry excavation directly north of the site as shown on Figure 4. The groundwater level in the bedrock approximately coincides with the pond level maintained in the quarry. The direction of bedrock groundwater flow northward is toward the quarry pond or northeastward toward the quarry industrial well No. 5 (Figure 2). Groundwater flow in the overlying till is vertically downward in response to the one to one vertical hydraulic gradient.

The groundwater quality in the bedrock, were sampled from MW04-04, is typical of fresh but hard mineralized water from dolostones formations (Table 2A). There is no apparent groundwater quality impact from the existing landfill.

We trust this summary of investigation results meets your requirements and if there are any questions, please contact us.

Yours very truly,

GOLDER ASSOCIATES LTD.

Original signed by:

Robert D. Blair, P.Geo,. P.Eng.
Senior Hydrogeologist, Principal

Attachments: Tables 1A -3
Figures 1-5
Appendix A – Borehole Records and Grainsize Testing

RDB/lh

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TABLE 1A
SOIL ANALYTICAL RESULTS - INORGANICS

Parameter	Units	Table 3 Criteria	Sample						
			MW04-01 UPPER	MW04-01 UPPER DUP.	MW04-01 LOWER	MW04-02 UPPER	MW04-02 LOWER	MW04-03 UPPER	MW04-03 LOWER
Aluminum	ug/g	***NV***	8,080	8,370	5,450	5,700	2,220	8,450	4,330
Barium	ug/g	***2,000***	64	66	33	44	13	60	26
Beryllium	ug/g	***1.2***	0.4	0.4	0.2	0.2	<0.2	0.4	<0.2
Cadmium	ug/g	***12***	**13.2**	**14.1**	6.7	0.5	<0.5	2.3	<0.5
Calcium	ug/g	***NV***	220,000	227,000	155,000	141,000	130,000	137,000	116,000
Chromium	ug/g	***1,000***	19	19	113	14	6	34	8
Cobalt	ug/g	***100***	4	3	2	4	<2	5	3
Copper	ug/g	***300***	15	16	8	11	4	14	7
Iron	ug/g	***NV***	17,300	17,800	8,260	14,800	5,180	17,600	7,720
Lead	ug/g	***1,000***	**1,160**	**1,210**	627	21	<5	138	<5
Magnesium	ug/g	***NV***	20,100	20,700	30,400	33,900	32,100	21,600	28,600
Manganese	ug/g	***NV***	359	372	259	361	207	396	286
Molybdenum	ug/g	***40***	<3	<3	<3	<3	<3	<3	<3
Nickel	ug/g	***200***	13	14	7	9	4	12	6
Phosphorus	ug/g	***NV***	318	323	314	371	275	415	348
Potassium	ug/g	***NV***	3,960	4,030	9,170	1,410	786	4,840	2,090
Silver	ug/g	***50***	2	2	<1	<1	<1	<1	<1
Sodium	ug/g	***NV***	558	586	1,040	174	140	611	287
Strontium	ug/g	***NV***	135	140	99.0	125	79.4	115	79.9
Titanium	ug/g	***NV***	309	320	231.0	252.0	176	285	216
Vanadium	ug/g	***250***	18	19	14	15	9	20	12
Zinc	ug/g	***800***	371	386	168	129	10	100	18
pH	pH	***5.0 to 11.0***	10.9	10.9	10.4	7.96	8.11	8.67	7.90
		No. of Exceedances	**2**	**2**	**0**	**0**	**0**	**0**	**0**

Notes: Table 3 = Ministry of Environment (MOE) "Soil, Ground Water and Sediments Standards for Use Under Part XV.1 of the Environmental Protection Act", revised March 9, 2004, Table 3: Full Depth Site Condition Standards In a Non-Potable Ground Water Condition

< = Below the Estimated quantitation limit

13.2/14.1 = Exceedance of Table "B" Guideline

NV = No value established

prepared by: ACU

checked by: CAB

TABLE 1B
SOIL ANALYTICAL RESULTS - TOTAL PETROLEUM HYDROCARBONS

			Sample					
Parameter	**Units**	**Table B Criteria**	**MW04-01 UPPER**	**MW04-01 LOWER**	**MW04-02 UPPER**	**MW04-02 LOWER**	**MW04-03 UPPER**	**MW04-03 LOWER**
TPH-Heavy Oils	ug/g	***5,000***	470	<100	110	<100	380	<100
TPH-Gas+Diesel	ug/g	***2,000***	<10	<10	<10	<10	<10	<10
TPH-Gas	ug/g	***NV***	<10	<10	<10	<10	<10	<10
TPH-Diesel	ug/g	***NV***	<10	<10	<10	<10	<10	<10
No. of Exceedances			**0**	**0**	**0**	**0**	**0**	**0**

Notes:

Table B = Ministry of Environment (MOE) "Guideline for Use at Contaminated Sites in Ontario", revised September 1998, Table "B" industrial/commercial criteria, non-potable situation for medium/fine textured soil.
< = Below the Estimated quantitation limit
NV = No value established

prepared by: ACU
checked by: CAB

TABLE 1C

SOIL ANALYTICAL RESULTS - POLYCHLORINATED BIPHENYLS

			Sample					
Parameter	**Units**	**Table 3 Criteria**	**MW04-01 UPPER**	**MW04-01 LOWER**	**MW04-02 UPPER**	**MW04-02 LOWER**	**MW04-03 UPPER**	**MW04-03 LOWER**
PCBs	ug/g	***25***	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
No. of Exceedances			**0**	**0**	**0**	**0**	**0**	**0**

Notes:

Table 3 = Ministry of Environment (MOE) "Soil, Ground Water and Sediments Standards for Use Under Part XV.1 of the Environmental Protection Act", revised March 9, 2004, Table 3: Full Depth Site Condition Standards In a Non-Potable Ground Water Condition

PCBs = Polychlorinated Biphenyls

< = Below the Estimated quantitation limit

prepared by: ACU

checked by: CAB

TABLE 1D
SOIL ANALYTICAL RESULTS - PAHS

Parameter	Units	EQL	Table 3 Criteria	Sample						
				MW04-01 UPPER**	MW04-01 UPPER DUP.**	MW04-01 LOWER	MW04-02 UPPER	MW04-02 LOWER	MW04-03 UPPER	MW04-03 LOWER
Naphthalene	ug/g	0.05	40	ND	ND	ND	ND	ND	ND	ND
2-Methylnapthalene	ug/g	0.05	1,600	ND	ND	ND	ND	ND	ND	ND
1-Methylnapthalene	ug/g	0.05	1,600	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	ug/g	0.05	840	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	ug/g	0.05	1,300	ND	ND	ND	ND	ND	ND	ND
Fluorene	ug/g	0.05	350	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	ug/g	0.05	40	0.24*	0.21*	ND	ND	ND	ND	ND
Anthracene	ug/g	0.05	28	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	ug/g	0.05	40	0.29	0.23	ND	ND	ND	ND	ND
Pyrene	ug/g	0.05	250	0.35	0.31	ND	ND	ND	ND	ND
Benzo(a)anthracene	ug/g	0.05	40	0.22*	0.23*	ND	ND	ND	ND	ND
Chrysene	ug/g	0.05	19	0.27	0.28	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	ug/g	0.05	19	0.26	0.22*	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	ug/g	0.05	19	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	ug/g	0.05	1.9	0.23*	0.24*	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ug/g	0.05	19	0.19*	0.16*	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	ug/g	0.05	1.9	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	ug/g	0.05	40	0.24*	0.22*	ND	ND	ND	ND	ND
No. of Exceedances				**0**	**0**	**0**	**0**	**0**	**0**	**0**

Notes:

Table 3 = Ministry of Environment (MOE) "Soil, Ground Water and Sediments Standards for Use Under Part XV.1 of the Environmental Protection Act", revised March 9, 2004, Table 3: Full Depth Site Condition Standards In a Non-Potable Ground Water Condition
EQL = Estimated Quantitation Limit
ND = Not detected (below EQL)
* = Detected below EQL of 0.25 for MW04-01 AND MW04-01 DUP. but passed compound identification criteria
** = Sample diluted. Refer to Certificates of Analysis, Appendix D

prepared by: ACU
checked by: CAB

TABLE 2A
GROUNDWATER ANALYTICAL RESULTS - INORGANICS

			Sample			
Parameter	**Units**	**Table 3 Criteria**	**MW04-01**	**MW04-01 DUP**	**MW04-03**	**MW04-04**
Aluminum	mg/L	NV	<500	<0.5	0.714	0.007
Antimony	mg/L	16	<50	<0.05	<0.05	0.0007
Arsenic	mg/L	0.48	<200	<0.2	<0.2	<0.002
Barium	mg/L	23	<500	<0.5	<0.5	0.078
Beryllium	mg/L	0.053	<100	<0.1	<0.1	<0.1
Bismuth	mg/L	NV	<0.1	<0.1	<0.1	<0.1
Boron	mg/L	50	0.528	0.573	1.240	0.121
Cadmium	mg/L	0.011	<0.01	<0.01	<0.01	<0.0001
Calcium	mg/L	NV	<50	<50	425	102
Chromium	mg/L	2	<0.5	<0.5	<0.5	<0.005
Cobalt	mg/L	0.1	<0.01	<0.01	<0.01	0.0043
Copper	mg/L	0.023	<0.05	<0.05	<0.05	0.0012
Iron	mg/L	NV	<3	<3	42.5	<0.03
Lead	mg/L	0.032	<0.05	<0.05	<0.05	<0.0005
Magnesium	mg/L	NV	15.5	15.4	162	59.6
Manganese	mg/L	NV	<0.5	<0.5	3.5	0.015
Mercury	mg/L	0.00012	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	mg/L	7.3	0.553	0.541	<0.1	0.016
Nickel	mg/L	1.6	<0.1	<0.1	<0.1	0.003
Phosphorus	mg/L	NV	<5	<5	<5	<0.05
Potassium	mg/L	NV	19,200	19,200	11,700	41.9
Selenium	mg/L	0.05	**<0.2**	**<0.2**	**<0.2**	<0.002
Silicon	mg/L	NV	5.87	5.79	<5	1.27
Silver	mg/L	0.0012	**<0.01**	**<0.01**	**<0.01**	<0.0001
Sodium	mg/L	NV	1,780	1,780	978	50.8
Strontium	mg/L	NV	<0.1	<0.1	1.75	14.2
Thallium	mg/L	0.4	<0.005	<0.005	<0.005	0.00075
Tin	mg/L	NV	<0.1	<0.1	<0.1	<0.001
Titanium	mg/L	NV	<0.5	<0.5	<0.5	<0.005
Uranium	mg/L	NV	0.0285	0.0278	<0.01	0.0029
Vanadium	mg/L	0.2	0.0921	0.0957	<0.05	0.0011
Zinc	mg/L	1.1	<0.5	<0.5	<0.5	0.011
pH	pH	NV	10.1	10.1	7.18	8.10
Specific Conductivity	umhos/cm	NV	66,000	65,500	42,200	1,180
Alkalinity	mg CaCO3/L	NV	716	696	1,350	165
C-Hardness	mg CaCO3/L	NV	188,800	188,600	1,733,000	500,600
Bromide (Br-)	mg/L	NV	46	46	30	<0.5
Chloride (Cl-)	mg/L	NV	3,830	3,800	2,270	73.6
Fluoride (F-)	mg/L	NV	21.2	32.4	0.7	1.4
Nitrate (NO_3)	mg/L	NV	<2	<2	<2	<0.2
Nitrite (NO_2)	mg/L	2	<2	<2	<2	<0.2
Phosphate (PO_4^{-3})	mg/L	NV	<10	<10	<10	<1
Sulphate (SO_4^{-2})	mg/L	NV	18,700	18,600	13,300	377
Phenols	mg/L	NV	0	0.015	0.003	0.001
TDS	mg/L	NV	41960	45436	29,396	860
		No. of Exceedances	**0**	**0**	**0**	**0**

Notes:

Table 3 = Ministry of Environment (MOE) "Soil, Ground Water and Sediments Standards for Use Under Part XV.1 of the Environmental Protection Act", revised March 9, 2004, Table 3: Full Depth Site Condition Standards In a Non-Potable Ground Water Condition

< = Below the Estimated quantitation limit (EQL)

NV = No value established

<200 = EQL exceeds Table B Criteria

prepared by: ACU

checked by: CAB

TABLE 2B
GROUNDWATER ANALYTICAL RESULTS - POLYCHLORINATED BIPHENYLS

			Sample			
Parameter	**Units**	**Table 3 Criteria**	**MW04-01**	**MW04-03**	**MW04-04**	**MW04-04 DUP**
PCBs	ug/L	0.2	<0.05	<0.05	<0.05	<0.05
No. of Exceedances			**0**	**0**	**0**	**0**

Notes:

Table 3 = Ministry of Environment (MOE) "Soil, Ground Water and Sediments Standards for Use Under Part XV.1 of the Environmental Protection Act", revised March 9, 2004, Table 3: Full Depth Site Condition Standards In a Non-Potable Ground Water Condition
PCBs = Polychlorinated Biphenyls
< = Below the Estimated quantitation limit

prepared by: ACU
checked by: CAB

TABLE 2C
GROUNDWATER ANALYTICAL RESULTS - PAHs

Parameter	Units	EQL	Table 3 Criteria	Sample			
				MW04-01	MW04-01 DUP.	MW04-03	MW04-04
Naphthalene	ug/L	***0.2***	6,200	ND	ND	ND	ND
2-Methylnapthalene	ug/L	***0.2***	13,000	0.2	0.2	ND	ND
1-Methylnapthalene	ug/L	***0.2***	13,000	ND	ND	ND	ND
Acenaphthylene	ug/L	***0.2***	2,000	ND	ND	ND	ND
Acenaphthene	ug/L	***0.2***	1,700	ND	ND	ND	ND
Fluorene	ug/L	***0.2***	290	ND	ND	ND	ND
Phenanthrene	ug/L	***0.2***	63	0.8	0.8	0.3	ND
Anthracene	ug/L	***0.2***	12	ND	ND	ND	ND
Fluoranthene	ug/L	***0.2***	130	ND	ND	ND	ND
Pyrene	ug/L	***0.2***	40	ND	ND	ND	ND
Benzo(a)anthracene	ug/L	***0.2***	5	ND	ND	ND	ND
Chrysene	ug/L	***0.2***	3	ND	ND	ND	ND
Benzo(b)fluoranthene	ug/L	***0.2***	7	ND	ND	ND	ND
Benzo(k)fluoranthene	ug/L	***0.2***	0.4	ND	ND	ND	ND
Benzo(a)pyrene	ug/L	***0.2***	1.9	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ug/L	***0.2***	0.27	ND	ND	ND	ND
Dibenzo(a,h)anthracene	ug/L	***0.2***	0.25	ND	ND	ND	ND
Benzo(ghi)perylene	ug/L	***0.2***	0.2	ND	ND	ND	ND
No. of Exceedances				**0**	**0**	**0**	**0**

Notes:

Table 3 = Ministry of Environment (MOE) "Soil, Ground Water and Sediments Standards for Use Under Part XV.1 of the Environmental Protection Act", revised March 9, 2004, Table 3: Full Depth Site Condition Standards In a Non-Potable Ground Water Condition
EQL = Estimated Quantitation Limit
mbgs = Meters below ground surface
ND = Not detected (above EQL)
NV = No value established
NA = Not analyzed

prepared by: ACU
checked by: CAB

TABLE 3
TCLP LEACH ANALYTICAL RESULTS

Sample Date	Units	Schedule 4 (mg/L)	Sample	
			MW04-01-UPPER	MW04-01-UPPER REPEAT
Arsenic	mg/L	2.5	<0.2	<0.2
Barium	mg/L	100	0.6	0.6
Boron	mg/L	500	0.1	0.2
Cadmium	mg/L	0.5	0.08	0.08
Chromium	mg/L	5	<0.1	<0.1
Lead	mg/L	5	1.0	0.5
Mercury	mg/L	0.1	<0.01	<0.01
Selenium	mg/L	1.0	<0.1	<0.1
Silver	mg/L	5	<0.01	<0.01
Uranium	mg/L	10	<0.01	<0.01
Floride (F-)	mg/L	150	1.9	2.4
Nitrate & Nitrite (as Nitrogen)	mg/L	1000	<0.2	<0.2
Cyanide (Free)	mg/L	20	<0.01	<0.01
PCBs	mg/L	0.3	<0.0002	<0.0002
		No. of Exceedances	**0**	**0**

Notes:

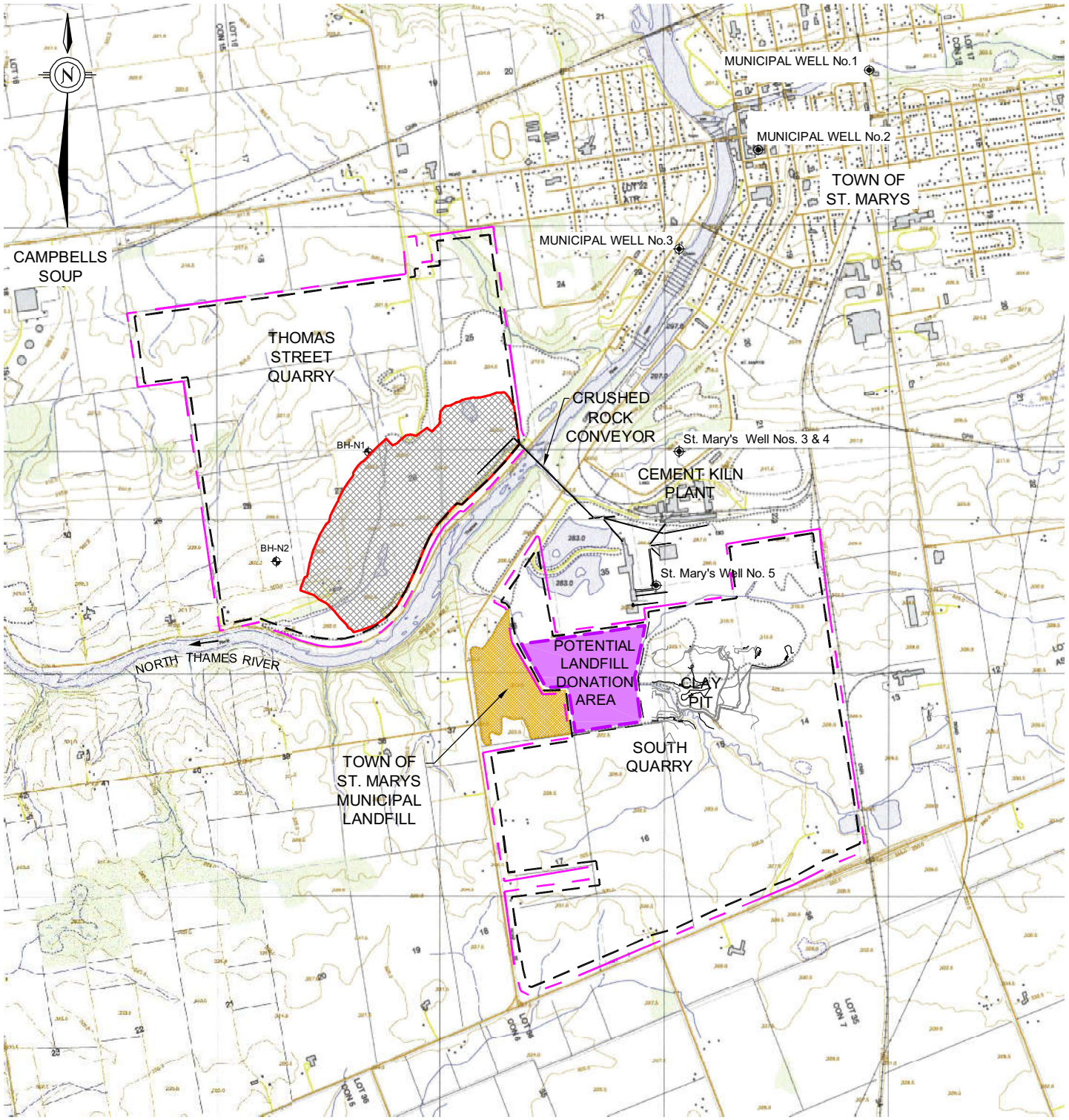
Schedule 4 = Environmental Protection Act, Revised Regulations of Ontario, Regulation 374, amended to O.Reg. 501/01 leach quality criteria in Schedule 4

75 = Exceedance of Schedule 4 Criteria

NV = No value established

prepared by: CB

checked by: EK



REFERENCES:

OBM SHEET 10 17 4850 47850,
MINISTY OF NATURAL RESOURCES, 1995

500 0 500 1000

SCALE 1:25000 METRES

LEGEND

- QUARRY LICENCE BOUNDARY
- QUARRY EXCAVATION SETBACK
- MUNICIPAL WELL No.3 — MUNICIPAL AND INDUSTRIAL WATER SUPPLY WELLS

Golder Associates
Mississauga, Ontario, Canada

SCALE	AS SHOWN
DATE	FEB. 22, 2005
DESIGN	
CAD	KD
CHECK	R.B.
REVIEW	

TITLE

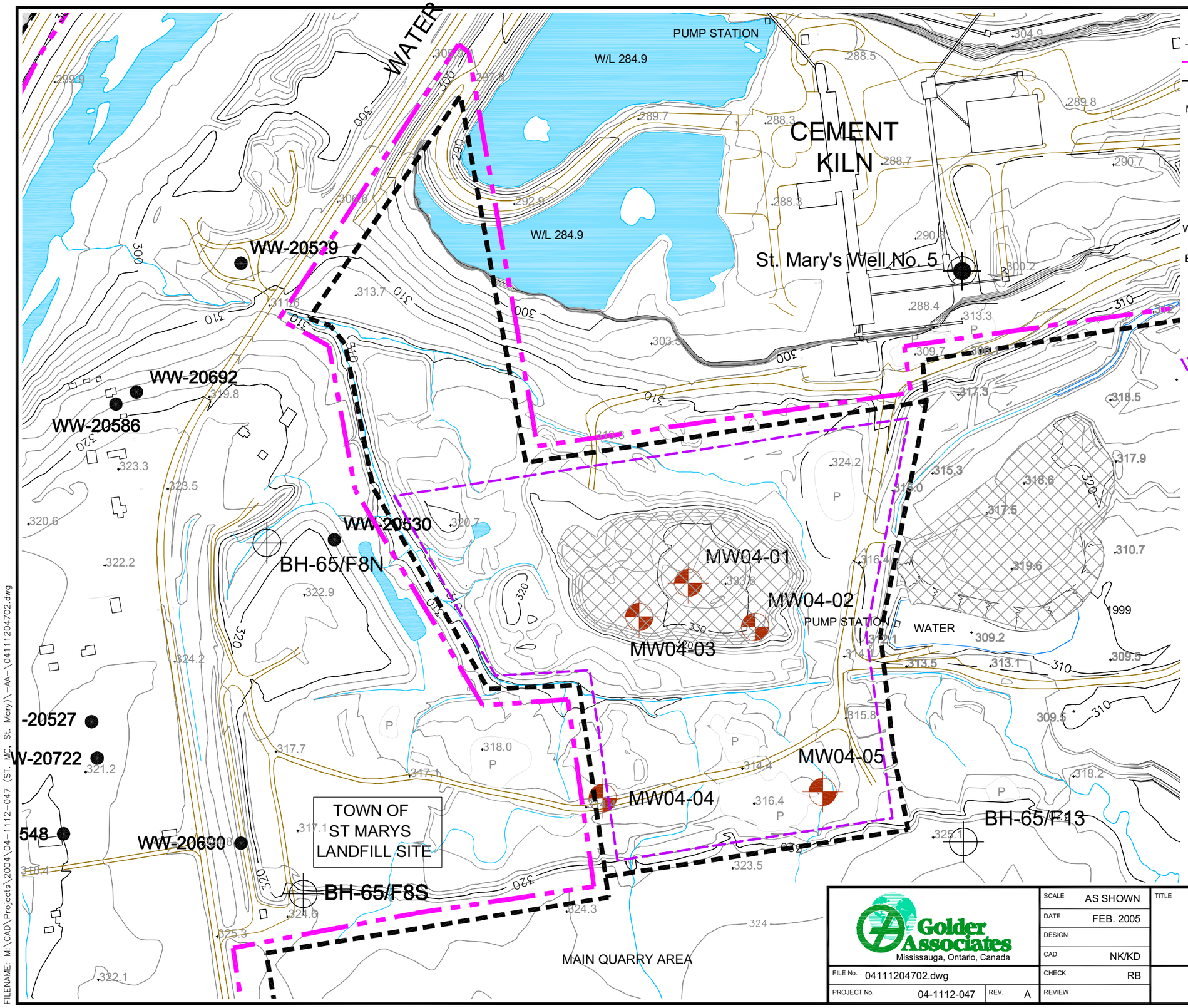
SITE LOCATION PLAN

FILE No.	04111204701.dwg		
PROJECT No.	04-1112-047	REV.	A

ST. MARYS CEMENT Co.

FIGURE 1

PLOT DATE: March 03, 2005
FILENAME: M:\CAD\Projects\2004\04-1112-047 (ST. MC, St. Mary)\-AA-\04111204701.dwg



NOTES

1. THIS FIGURE IS TO BE READ IN CONJUCTION WITH THE ATTACHED REPORT.

2. THE CURRENT EXCAVATION FACE AT THE QUARRY WAS SURVEYED BY AGM SURVEYING AND ENGINEERING, DRAWING No. SM 0412T1.dwg (OCTOBER, 2004).

3. THE TEST PITS WERE SURVEYED BY AGM SURVEYING AND ENGINEERING BY REPORT No. SM-CEM-34 (SEPTEMBER, 2004).

5. LOCATIONS OF 1958, 1965 AND 1974 BOREHOLES AND MOE WELLS ARE APPROXIMATE ONLY.

REFERENCE

BASE MAP FROM ST. MARYS CEMENT INC. TOPOGRAPHIC SURVEY UPDATED SEPTEMBER 2004, DRAWING No. MP 001 V.01 (3D CONTOURS), UTM NAD83.

OCTOBER 2004 SURVEY OF THOMAS ST. QUARRY FACE AND OVERBURDEN STRIPPING FACE AND SOUTH QUARRY CLAY PIT OBTAINED FROM AGM, FILE NAME SM0412T1.DWG, DATED OCT. 7, 2004, SCALE 1:2000.

Golder Associates
Mississauga, Ontario, Canada

SCALE	AS SHOWN
DATE	FEB. 2005
DESIGN	
CAD	NK/KD
CHECK	RB
REVIEW	
FILE No.	04111204702.dwg
PROJECT No.	04-1112-047
REV.	A

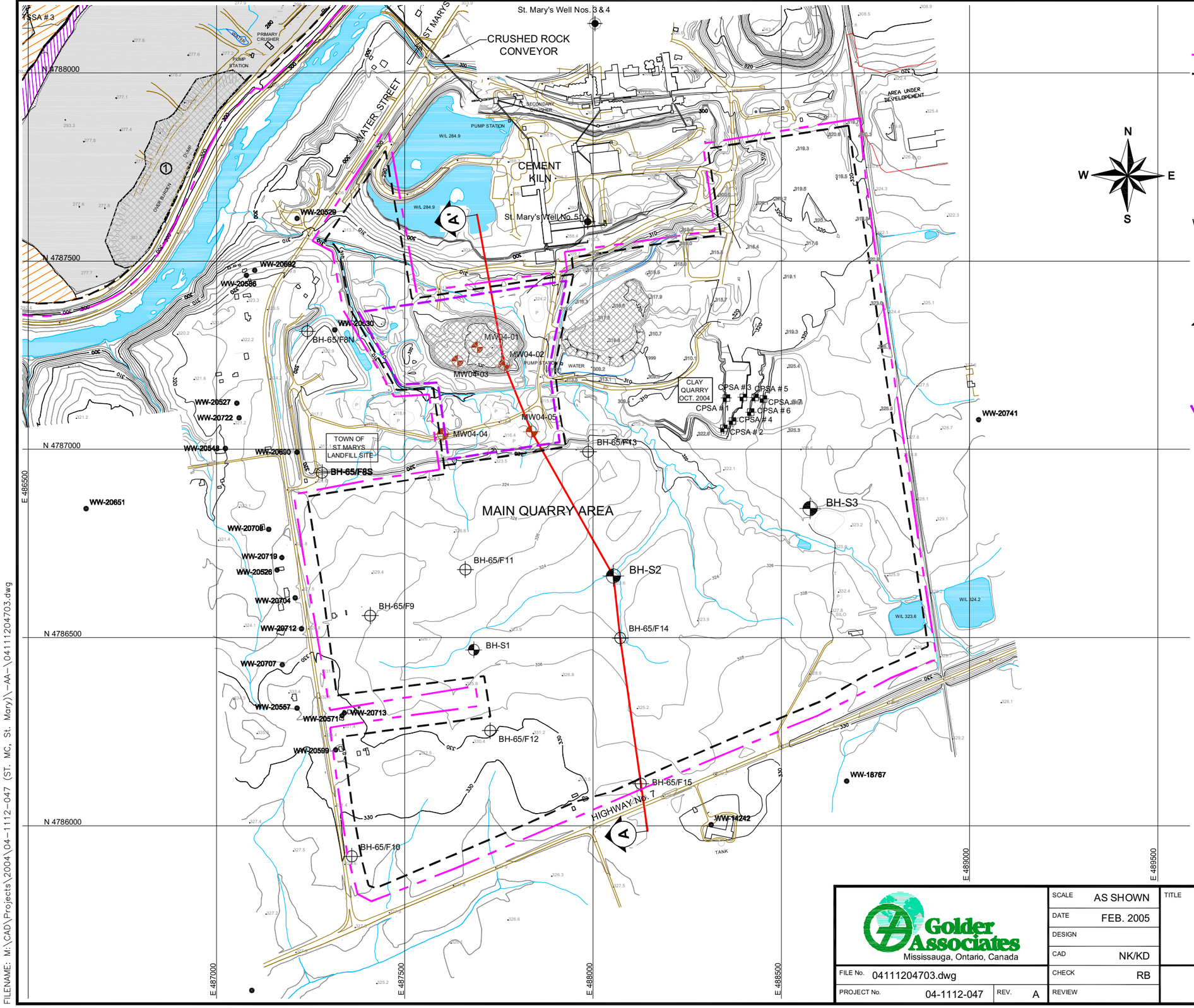
TITLE

DONATION AREA SITE PLAN

ST. MARYS CEMENT Co.

FIGURE 2

PLOT DATE: March 03, 2005
FILENAME: M:\CAD\Projects\2004\04-1112-047 (ST. MC, St. Mary)\-AA-\04111204702.dwg



LEGEND

- QUARRY LICENCE BOUNDARY
- QUARRY EXCAVATION SETBACK
- MW04-04 — BOREHOLE LOCATION FROM CURRENT INVESTIGATION FOR LANDFILL AREA, REPORT GOLDER NO. 04-1112-047
- CPSA # 3 — TEST PITS LOCATION FROM CURRENT INVESTIGATION, 2004
- BH-S1 — BOREHOLE LOCATION DRILLED BY GOLDER, 2000
- WW-20618 — WATER WELL SUPPLY LOCATION - MINISTRY OF ENVIRONMENT (MOE) WWIS DATABASE
- BH-65/F8 — BOREHOLE LOCATION - DRILLED BY ST. MARYS CEMENT, 1965
- MUNICIPAL / INDUSTRIAL WATER SUPPLY WELLS
- A — A' — LOCATION OF CROSS-SECTIONS
- CKD STOCKPILE
- POTENTIAL LANDFILL DONATION AREA

NOTES

1. THIS FIGURE IS TO BE READ IN CONJUCTION WITH THE ATTACHED REPORT.

2. THE CURRENT EXCAVATION FACE AT THE QUARRY WAS SURVEYED BY AGM SURVEYING AND ENGINEERING, DRAWING No. SM 0412T1.dwg (OCTOBER, 2004).

3. THE TEST PITS WERE SURVEYED BY AGM SURVEYING AND ENGINEERING BY REPORT No. SM-CEM-34 (SEPTEMBER, 2004).

4. FOR CROSS-SECTIONS A-A' SEE FIGURE 4.

5. LOCATIONS OF 1958, 1965 AND 1974 BOREHOLES AND MOE WELLS ARE APPROXIMATE ONLY.

REFERENCE

BASE MAP FROM ST. MARYS CEMENT INC. TOPOGRAPHIC SURVEY UPDATED SEPTEMBER 2004, DRAWING No. MP 001 V.01 (3D CONTOURS), UTM NAD83.

OCTOBER 2004 SURVEY OF THOMAS ST. QUARRY FACE AND OVERBURDEN STRIPPING FACE AND SOUTH QUARRY CLAY PIT OBTAINED FROM AGM, FILE NAME SM0412T1.DWG, DATED OCT. 7, 2004, SCALE 1:2000.

200 0 200 400

SCALE 1:10000 METRES

Golder Associates
Mississauga, Ontario, Canada

SCALE	AS SHOWN
DATE	FEB. 2005
DESIGN	
CAD	NK/KD
CHECK	RB
REVIEW	

FILE No. 04111204703.dwg
PROJECT No. 04-1112-047 REV. A

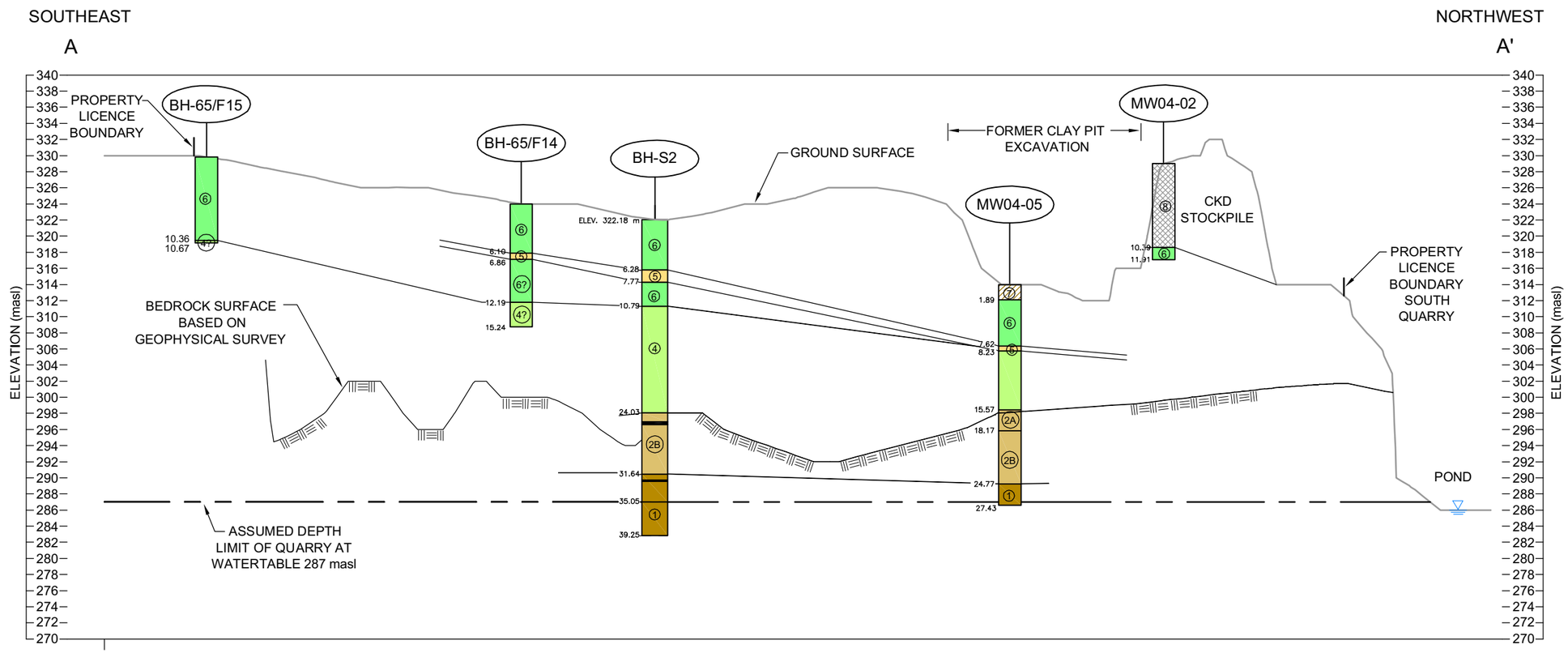
TITLE

SITE PLAN SOUTH QUARRY

ST. MARYS CEMENT Co.

FIGURE 3

PLOT DATE: March 03, 2005
FILENAME: M:\CAD\Projects\2004\04-1112-047 (ST. MC, St. Mary)\-AA-\04111204703.dwg



STRATIGRAPHY

SURFICIAL DEPOSITS

⑧ FILL, loose to compact, grey, silt to sand, cement kiln dust

⑦ FILL, loose to compact, brown, silty sand to sand and gravel

⑥ UPPER GLACIAL TILL Very stiff to hard, medium dark grey, moist, massive textured, well graded SILTY CLAY with sand and trace to some matrix support gravel and occasional cobbles of limestone, dolostone, igneous composition.

⑤ MIDDLE GLACIOLACUSTRINE SILT Firm to compact, light grey, moist to wet, dialatent, massive textured, well graded to thinly bedded SILT and CLAYEY SILT.

④ LOWER GLACIAL TILL Hard, medium brownish grey, moist to dry appearing, massive textured SILTY CLAY to CLAYEY SILT with sand and trace to some matrix supported gravel, occasional cobbles and boulders of limestone, dolostone and igneous composition. Cobbles and boulders increase to 10 to 20 percent near base of sequence.

BEDROCK DEPOSITS

③ DUNDEE FORMATION LIMESTONE Fresh, weathered on open bedding partings, light creamy grey to light tan grey, very fine to fine grained, non-porous, thin to medium bedded, partly fossiliferous (rugose corals) LIMESTONE.(3A) and Dolomitic Limestone(3B) Limestone tends to separate on open bedding partings.

② UPPER LUCAS FORMATION DOLOMITIC LIMESTONE Fresh, weathered on open bedding partings, light to medium tan to brownish grey, interbedded very fine to fine grained, non-porous to faintly porous, locally pitted to vuggy, thin to medium bedded, laminar textured (stromatolitic) in part and locally oolitic, weakly stylolitic, partly fossiliferous LIMESTONE(2A) and Dolomitic Limestone(2B) with dark tan sections of porous, faintly petroliferous limestone.

① LOWER LUCAS FORMATION DOLOSTONE Fresh, faintly weathered in some beds, moderately weathered on open bedding partings, light to medium tan to brownish grey, very fine to fine grained, faintly to moderately porous, thin to medium bedded, laminar textured DOLOMITIC LIMESTONE to DOLOSTONE with faintly petroliferous beds.

LEGEND

STATIC GROUNDWATER LEVEL
BH-S1 MEASURED AUGUST 22, 2003
BH-S3 MEASURED AUGUST 18, 2003

NOTE

FOR LOCATION OF SECTION A - A' REFER TO FIGURE 3

SCALE Horizontal 1:6000 — 120 0 120 240 METRES

SCALE Vertical 1:600 — 12 0 12 24 METRES

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SCALE	AS SHOWN
DATE	FEB. 2005
DESIGN	
CAD	KD
CHECK	RB
REVIEW	
FILE No.	04111204704.dwg
PROJECT No.	04-1112-047
REV.	A

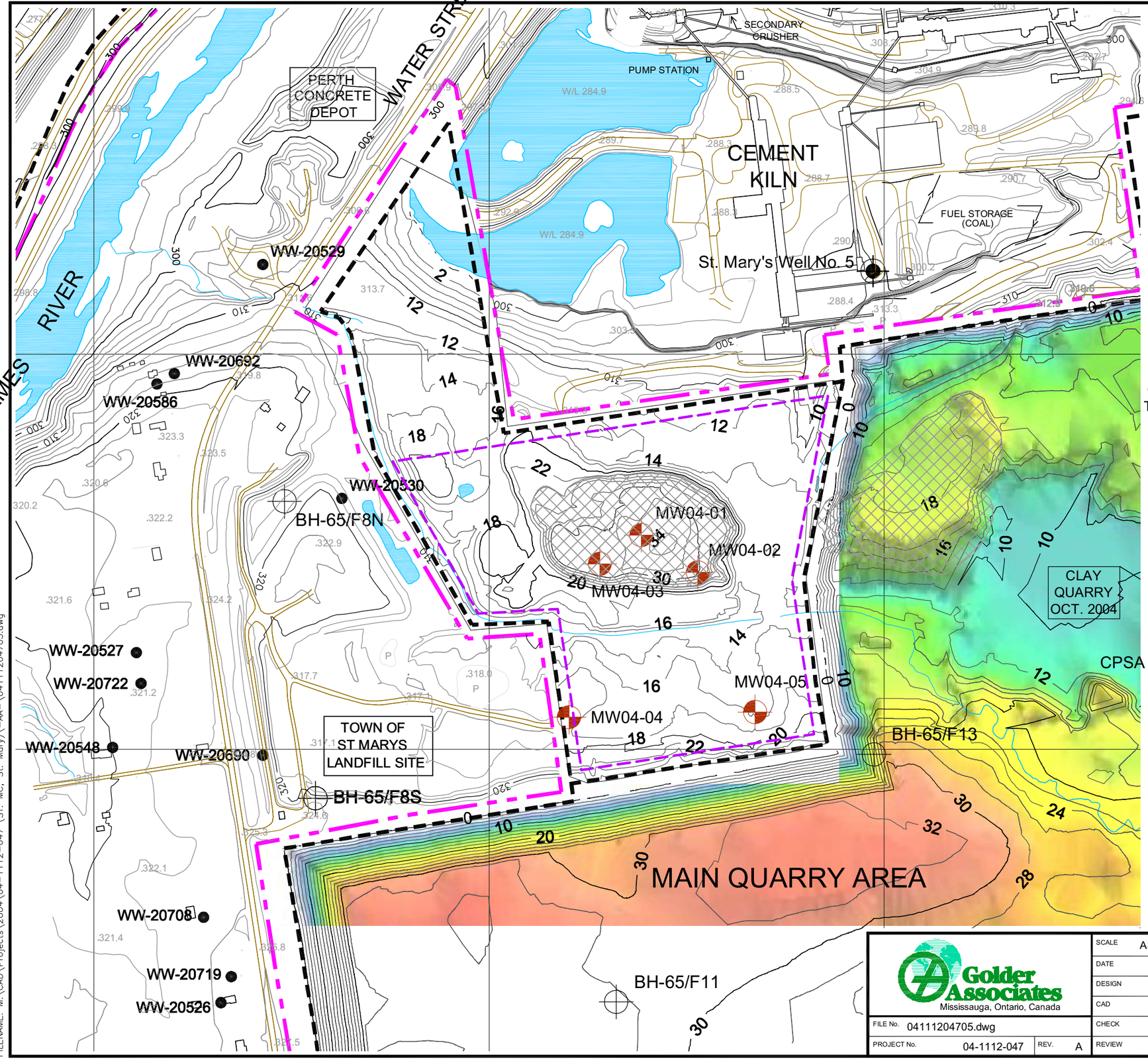
TITLE

SUB-SURFACE CONDITIONS SECTION A-A'

ST. MARYS CEMENT Co.

FIGURE 4

PLOT DATE: March 03, 2005
FILENAME: M:\CAD\Projects\2004\04-1112-047 (ST. MC, St. Mary)\-AA-\04111204704.dwg



LEGEND

- QUARRY LICENCE BOUNDARY
- QUARRY EXCAVATION SETBACK
- MW-04-04 — BOREHOLE LOCATION FROM CURRENT INVESTIGATION FOR LANDFILL AREA, REPORT GOLDER NO. 04-1112-047
- CPSA # 3 — TEST PITS LOCATION FROM CURRENT INVESTIGATION, 2004
- BH-S1 — BOREHOLE LOCATION DRILLED BY GOLDER, 2000
- WW-20618 — WATER WELL SUPPLY LOCATION - MINISTRY OF ENVIRONMENT (MOE) WWIS DATABASE
- BH-65/F8 — BOREHOLE LOCATION - DRILLED BY ST. MARYS CEMENT, 1965
- MUNICIPAL / INDUSTRIAL WATER SUPPLY WELLS
- 20 — OVERBURDEN THICKNESS CONTOUR IN METRES
- CKD STOCKPILE
- POTENTIAL LANDFILL DONATION AREA

OVERBURDEN THICKNESS (m)

35 30 25 20 15 10 5 0

NOTES

1. THIS FIGURE IS TO BE READ IN CONJUCTION WITH THE ATTACHED REPORT.
2. THE CURRENT EXCAVATION FACE AT THE QUARRY WAS SURVEYED BY AGM SURVEYING AND ENGINEERING, DRAWING No. SM 0412T1.dwg (OCTOBER, 2004).
3. THE TEST PITS WERE SURVEYED BY AGM SURVEYING AND ENGINEERING BY REPORT No. SM-CEM-34 (SEPTEMBER, 2004).
4. LOCATIONS OF 1958, 1965 AND 1974 BOREHOLES AND MOE WELLS ARE APPROXIMATE ONLY.
5. TONNAGE ESTIMATES BASED ON VOLUMES WITH BULK DENSITY OF 2.3 T/m^3 FOR SOIL.

REFERENCE

BASE MAP FROM ST. MARYS CEMENT INC. TOPOGRAPHIC SURVEY UPDATED SEPTEMBER 2004, DRAWING No. MP 001 V.01 (3D CONTOURS), UTM NAD83.

OCTOBER 2004 SURVEY OF THOMAS ST. QUARRY FACE AND OVERBURDEN STRIPPING FACE AND SOUTH QUARRY CLAY PIT OBTAINED FROM AGM, FILE NAME SM0412T1.DWG, DATED OCT. 7, 2004, SCALE 1:2000.

100 0 100 200
SCALE 1:5000 METRES

Golder Associates
Mississauga, Ontario, Canada

SCALE	AS SHOWN
DATE	FEB. 2005
DESIGN	
CAD	KD
CHECK	RB
REVIEW	
FILE No.	04111204705.dwg
PROJECT No.	04-1112-047
REV.	A

TITLE

INFERRED TOTAL OVERBURDEN THICKNESS POTENTIAL LANDFILL DONATION AREA

ST. MARYS CEMENT Co.

FIGURE 5

PLOT DATE: March 03, 2005
FILENAME: M:\CAD\Projects\2004\04-1112-047 (ST. MC, St. Mary)\-AA-\04111204705.dwg

APPENDIX A
RECORD OF BOREHOLES & GRAINSIZE TESTING

PROJECT: 04-1112-047

RECORD OF DRILLHOLE: MW 04-01

SHEET 1 OF 2

LOCATION: N 4787271.1 ;E 487692.7

DRILLING DATE: July 30, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate; BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage; PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular; PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break; BR - Broken Rock

NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH	COLOUR % RETURN	RECOVERY TOTAL CORE %	RECOVERY SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -'Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
0	12" Hollow Stem Augers with 6 1/4" CME Sampler	GROUND SURFACE		332.83															
		TOPSOIL		0.00 / 332.60															Cement Hole plug
		Loose, dry, grey SILT, trace to little gravel CKD		0.23 / 332.30															
1		Stiff to very stiff, dry, grey sandy SILT to silty SAND, trace gravel, trace cobbles (FILL)		0.53 / 331.59	1														
		Very stiff, moist, grey sandy SILT to silty SAND (FILL)		1.30															
		Very stiff to loose, moist, grey sandy SILT to silty SAND, trace gravel (FILL)		331.16															
2		Stiff, moist, white SILT CKD		1.67	2														
3				329.68															Benseal
		Loose, moist, grey SAND CKD		3.15															
		Stiff, moist, brown silty SAND CKD		3.28 / 329.12	3														
4		Stiff to compact, moist, brown silty SAND, trace gravel Moist paper cement bags, from 3.70 m to 3.75 m depth		3.71															
				328.31															
		Very stiff, moist, black SILTY CLAY CKD		4.52															
		Stiff, moist, brown CLAYEY SILT to SILTY CLAY (FILL)		4.65 / 327.78															
5		Stiff, moist,red SILT CKD		5.05	4														
				326.89															Hole plug
6		Soft, wet, red silty SAND to medium SAND with gravel and cobbles Mixed FILL and CKD		5.94	5														
7				325.39															
		Soft, moist, red SILT to CLAYEY SILT, trace cobbles Mixed FILL and CKD		7.44	6														
8																			Sand
9					7														
10																			

CONTINUED NEXT PAGE

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: RDB

CHECKED: RDB

PROJECT: 04-1112-047

RECORD OF DRILLHOLE: MW 04-01

SHEET 2 OF 2

LOCATION: N 4787271.1 ;E 487692.7

DRILLING DATE: July 30, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate; BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage; PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular; PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break; BR - Broken Rock

NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH COLOUR / % RETURN	RECOVERY TOTAL CORE %	RECOVERY SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
10		*--- CONTINUED FROM PREVIOUS PAGE ---*																
				322.57	7													
		Loose, wet, grey brown silty SAND to sandy SILT, trace gravel CKD		10.26														
11					8													Sand
12	12" Hollow Stem Augers with 6 1/4" CME Sapler																	
					9													
13				319.49														
		Loose, wet, black grey silty SAND to SAND, trace gravel, mottled CKD		13.34														
		UPPER GLACIAL TILL		319.29														Screen
		Hard, brown to grey, moist, well graded SILTY CLAY, sandy, trace to some gravel		13.54	10		<<											
14																		
15				317.77														
		End of Borehole		15.06														Note:
		Note:																Well Stickup 0.73m above ground surface
		CKD - Cement Kiln Dust																Water level at 10.69m below ground surface
16																		
17																		
18																		
19																		
20																		

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: RDB

CHECKED: RDB

MISS-ROCK-2 041112047AARCK.GPJ GAL-CANADA.GDT 3/3/05 DD

PROJECT: 04-1112-047

RECORD OF DRILLHOLE: MW 04-02

SHEET 1 OF 2

LOCATION: N 4787224.0 ;E 487764.2

DRILLING DATE: August 3, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate; BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage; PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular; PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break; BR - Broken Rock

NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	COLOUR / % RETURN / FLUSH	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
0	12" Hollow Stem Augers with 6 1/4" CME Sampler	GROUND SURFACE		329.41														
		TOPSOIL		0.00														
		Firm, dry, brown silty SAND to coarse SAND, some gravel, CKD		0.15	1		<<											
1				328.11														
		Firm, moist, grey silty SAND to sandy SILT, trace coarse sand CKD		1.30	2													Backfill
2				326.67														
		Stiff, moist, grey and brown mottled clayey SILT to sandy SILT, trace gravel, CKD		2.74	3													Hole plug
3																		
4				324.84														Benseal
		Stiff, moist, light brown SAND, trace organics, trace coarse sand and silt, CKD		4.57	4													
5																		Hole plug
6					5													
7																		Sand
8					6													
9					7													Screen
10		*CONTINUED NEXT PAGE*																

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: RDB

CHECKED: RDB

MISS-ROCK-2 041112047AARCK.GPJ GAL-CANADA.GDT 3/3/05 DD

PROJECT: 04-1112-047

RECORD OF DRILLHOLE: MW 04-02

SHEET 2 OF 2

LOCATION: N 4787224.0 ;E 487764.2

DRILLING DATE: August 3, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate; BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage; PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular; PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break; BR - Broken Rock

NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH	COLOUR % RETURN	RECOVERY TOTAL CORE %	RECOVERY SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
10		*--- CONTINUED FROM PREVIOUS PAGE ---*																	
	12" Hollow Stem Augers with 6 1/4" CME Sapler	Stiff, moist, light brown SAND, trace organics, trace coarse sand and silt, CKD		319.02	7														
		UPPER GLACIAL TILL Hard, brown to grey, moist, well graded SILTY CLAY, sandy, trace to some gravel		10.39	8														Screen
11				317.50															
12		End of Borehole Note: CKD - Cement Kiln Dust		11.91															Note: Well Stickup 0.71m above ground surface Water level at 11.73m below ground surface
13																			
14																			
15																			
16																			
17																			
18																			
19																			
20																			

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: RDB

CHECKED: RDB

MISS-ROCK-2 041112047AARCK.GPJ GAL-CANADA.GDT 3/3/05 DD

PROJECT: 04-1112-047

RECORD OF DRILLHOLE: MW 04-03

SHEET 1 OF 2

LOCATION: N 4787234.8 ;E 487640.2

DRILLING DATE: August 4, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate; BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage; PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular; PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break; BR - Broken Rock

NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH	COLOUR % RETURN	RECOVERY TOTAL CORE %	RECOVERY SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -'Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
		GROUND SURFACE		329.34															
0		TOPSOIL		0.00 / 329.09															
		Firm, dry, light brown silty fine SAND to sandy SILT, trace to some gravel (FILL)		0.25 / 328.48	1														Cement
1		Firm, moist, brown clayey silty SAND, some gravel, trace wood and debris, intermixed FILL and CKD		0.86	2														Backfill
2																			
3					3														
4	12" Hollow Stem Augers with 6 1/4" CME Sapler			324.92															
		Soft, moist, light brown silty fine to medium SAND,CKD		4.42 / 4.57															
5		Firm, moist, brown clayey silty SAND, some coarse sand, some gravel, wood, debris and cobbles, FILL and CKD		323.45	4														
6		Firm to stiff, moist, brown silty clayey medium to coarse SAND, CKD		5.89 / 322.69	5														
		Firm to stiff, moist, brown with black staining, silty clayey SAND, CKD		6.65 / 321.97															Benseal
7		Firm, moist, light brown SAND, some gravel, CKD		7.37															
8					6														
		Stiff, moist, brown CLAYEY SILT to SILTY CLAY, trace coarse sand, trace gravel, (FILL)		8.28 / 320.37															
9		Firm, moist, light brown SAND, some gravel, trace clinker balls, trace organics, CKD		8.97	7														
10																			

CONTINUED NEXT PAGE

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: RDB

CHECKED: RDB

PROJECT: 04-1112-047

RECORD OF DRILLHOLE: MW 04-03

SHEET 2 OF 2

LOCATION: N 4787234.8 ;E 487640.2

DRILLING DATE: August 4, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate
BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage
PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular
PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	COLOUR / % RETURN	FLUSH	RECOVERY TOTAL CORE %	RECOVERY SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
10		*--- CONTINUED FROM PREVIOUS PAGE ---*																	
	12" Hollow Stem Augers with 6 1/4" CME Sapler	Firm, moist, light brown SAND, some gravel, trace clinker balls, trace organics, CKD		318.85	7														
		Loose to compact, wet, light brown SAND, trace gravel, trace organics, CKD		10.49															Benseal
11					8														Grout
12					9														
13																			Sand
14					10														
15																			
				313.47	11														
16		Firm, moist, dark brown sandy SILT, trace organics, Topsoil Fill		15.87															
				312.75															Screen
		Wet, brown medium SAND, some coarse sand (FILL)		16.59 312.55															
		Moist, brown CLAYEY SILT, some organics, Topsoil Fill		16.79															
17		Wet, brown medium SAND		16.97															
		UPPER GLACIAL TILL Hard, brown to grey, moist, well graded SILTY CLAY, sandy, trace to some gravel			12														
				311.36	13			<<											
18		End of Borehole Note: CKD - Cement Kiln Dust		17.98															Note: Well Stickup 0.75m above ground surface Water level at 11.68m belowground surface
19																			
20																			

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: RDB

CHECKED: RDB

MISS-ROCK-2 041112047AARCK.GPJ GAL-CANADA.GDT 3/3/05 DD

PROJECT: 04-1112-047

RECORD OF DRILLHOLE: MW 04-04

SHEET 1 OF 4

LOCATION: N 4787040.7 ;E 487600.1

DRILLING DATE: August 7-8, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate; BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage; PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular; PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break; BR - Broken Rock

NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH	COLOUR / % RETURN	RECOVERY TOTAL CORE %	RECOVERY SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
		GROUND SURFACE		314.19															
0	PQ Soil Coring	Brown sand and gravel (FILL)		0.00															
		UPPER GLACIAL TILL		0.10															
		Very stiff to hard, medium to dark grey, moist, massive textured, well graded, SILTY CLAY TILL some sand, trace to some gravel, occasional cobbles and boulders of limestone, dolostone and igneous composition (coarse gravel, cobbles and boulders estimated to comprise 5 to 10% of sample).			1														
1					2														
2					3										Sample 1,, 2.21m-2.29m,, Sieve and Hydrometer,,				
3					4														
4															Sample 2,, 4.50m-4.57m,, Sieve and Hydrometer,,				
5					5														Bentonite grout
6																			
7					6														
8															Sample 3,, 8.46m-8.53m,, Sieve and Hydrometer,,				
				305.33	7														
9		LOWER GLACIAL TILL		8.86															
					8														
10															Sample 4,,				
		CONTINUED NEXT PAGE																	

DEPTH SCALE

1 : 50

LOGGED: RDB

CHECKED: RDB

Golder Associates

PROJECT: 04-1112-047

RECORD OF DRILLHOLE: MW 04-04

SHEET 2 OF 4

LOCATION: N 4787040.7 ;E 487600.1

DRILLING DATE: August 7-8, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate; BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage; PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular; PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break; BR - Broken Rock

NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	COLOUR % RETURN / FLUSH	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
		--- CONTINUED FROM PREVIOUS PAGE ---																
10	PQ Soil Coring	LOWER GLACIAL TILL Hard, medium brownish grey, moist to dry appearance, massive textured, well graded, CLAYEY SILT TILL with sand, some gravel, occasional cobbles and boulders of limestone, dolostone and igneous composition. Limestone cobble at upper contact. Coarse gravel, cobble and boulder content estimated to comprise 10 to 20% below 10.5 m depth. Poor sample recovery below 12 m depth due to cobbles and boulders.			8									9.91m-10.06m,, Sieve and Hydrometer,,				
11					9													
12																		
13					10													
14																		Bentonite grout
15					11													
				298.34														
16		At 15.85 m to 16.46 m depth, bedded silty sand to sandy silt.		15.85	12									Sample 6,, 15.85m-16.00m,, Sieve and Hydrometer,,				
				297.73														
		At 16.46 to 16.76 m depth, brown, moist, layered clayey silt and brownish grey silty clay.		16.46										Sample 7,, 16.61 m-16.76m,, Sieve and Hydrometer,,				
				297.43														
17		At 16.76 m to 18.75 m depth, no sample recovery, probably clayey silt till with numerous cobbles and boulders.		16.76	13													
18																		
		Bedrock Surface		295.44														
		UPPER LUCAS FORMATION LIMESTONE		18.75	14									FR,PL,Ro				
19														FR,PL,Ro				
				294.89										FR,PL,Ro				
	HQ Coring			19.30	15									FR,PL,Ro				
				294.49														
				19.70	16													
20														FR,UE,Ro				
		CONTINUED NEXT PAGE																

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: RDB

CHECKED: RDB

MISS-ROCK-2 041112047AARCK.GPJ GAL-CANADA.GDT 3/3/05 DD

PROJECT: 04-1112-047

RECORD OF DRILLHOLE: MW 04-04

SHEET 3 OF 4

LOCATION: N 4787040.7 ;E 487600.1

DRILLING DATE: August 7-8, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate; BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage; PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular; PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break; BR - Broken Rock

NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	COLOUR % RETURN / FLUSH	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
		--- CONTINUED FROM PREVIOUS PAGE ---																
20		Fresh, faintly weathered on open bedding partings, light to medium tan to brownish grey, interbedded very fine to fine grained, non-porous to faintly porous, thin to medium bedded, laminar textured with oolitic beds LIMESTONE with occasional dark tan brown beds of faintly porous petroliferous dolomitic limestone.												FR,UE,Ro; FR,UE,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,UE,Ro				
21					16													
22		At 18.75 to 19.72 m depth, prominent 30° to 40° bedding slump structures. At 19.30 to 19.72 m depth - medium dark grey, mottled textured dolostone UPPER LUCAS marker bed.			17									FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro				
23																		96 mm HQ size open borehole
24					18									FR,PL,Ro; FR,PL,Ro; FR,UE,Ro; FR,PO,Ro; FR,PO,Ro; FR,UE,Ro; FR,PL,Ro; FR,PL,Ro				
25	HQ Coring	UPPER LUCAS FORMATION DOLOMITIC LIMESTONE Fresh, faintly to moderately weathered on open bedding partings, tan to grey, fine grained, non-porous to faintly porous, thin to medium bedded DOLOMITIC LIMESTONE with thin crystalline gypsum horizons between 27.46 and 28.07 m depth.		289.62 / 24.57	19		<<							FR,IR,VR; FR,UN,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro				
26																		
27					20									FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro				
28				286.73 / 27.46														
29				286.12 / 28.07	21									FR,PL,VR; FR,PL,Ro; FR,UE,Ro; FR,UE,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,Ro; FR,PL,VR; FR,PL,VR				
30		*CONTINUED NEXT PAGE*			22									FR,PL,Ro				

MISS-ROCK-2 041112047AARCK.GPJ GAL-CANADA.GDT 3/3/05 DD

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: RDB

CHECKED: RDB

PROJECT: 04-1112-047

RECORD OF DRILLHOLE: MW 04-04

SHEET 4 OF 4

LOCATION: N 4787040.7 ;E 487600.1

DRILLING DATE: August 7-8, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate
BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage
PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular
PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	COLOUR & % RETURN	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
		--- CONTINUED FROM PREVIOUS PAGE ---																
30														FR,PL,Ro FR,PL,Ro				
				283.92	22													
		LOWER LUCAS FORMATION DOLOSTONE		30.27										FR,UE,VR FR,PL,Ro				
31	HQ Coring	Fresh, light tan to grey, fine grained, non-porous to faintly porous thin to medium bedded DOLOSTONE. Top of unit marked by thin, grey mottled porous dolostone bed between 30.27 and 30.39 m.			23		<<							FR,PL,Ro				
														FR,PL,Ro				
														FR,PL,Ro				
32				282.19														
		End of Borehole		32.00														Note: Monitoring well riser n pipe stickup 0.95 m above ground surface water level at 27.41 m below ground surface on August 8, 2004
33																		
34																		
35																		
36																		
37																		
38																		
39																		
40																		

DEPTH SCALE

1 : 50

LOGGED: RDB

CHECKED: RDB

Golder Associates

MISS-ROCK-2 041112047AARCK.GPJ GAL-CANADA.GDT 3/3/05 DD

PROJECT: 04-1112-047

RECORD OF DRILLHOLE: MW 04-05

SHEET 1 OF 3

LOCATION: N 4787047.3 ;E 487836.7

DRILLING DATE: August 12, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate; BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage; PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular; PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break; BR - Broken Rock

NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	COLOUR, % RETURN / FLUSH	RECOVERY: TOTAL CORE %	RECOVERY: SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
		GROUND SURFACE		314.13														
0	PQ Soil Coring	Loose, brown, moist, intermixed SILTY SAND AND GRAVEL, SILT AND SAND, and SILTY CLAY (FILL)		0.00	1													
1					2									Sample 1,, 1.22m-1.30m,, Sieve and Hydrometer,,				
				312.24														
2		UPPER GLACIAL TILL Very stiff to hard, medium to dark grey, moist, massive textured, well graded, SILTY CLAY (TILL), some sand, trace gravel grading to CLAYEY SILT (TILL) some sand trace gravel below 5.5 m depth. Coarse gravel, cobbles and boulders of limestone, dolostone and igneous composition comprise approximately 5 to 10% of sample.		1.89	3													
					4													
3					5									Sample 1,, 2.97m-3.05m,, Sieve and Hydrometer,,				
4														Sample 2,, 4.34m-4.42m,, Sieve and Hydrometer,,				
5					6													Grout
6														Sample 3,, 5.94m-6.00m,, Sieve and Hydrometer,,				
7					7									Sample 4,, 6.78m-6.86m,, Sieve and Hydrometer,,				
				306.51														
		MIDDLE LACUSTRINE SILT Stiff, brownish grey, moist to wet, thinly bedded SILT some sand to CLAYEY SILT.		7.62 305.90														
8		LOWER GLACIAL TILL Hard, medium brownish grey, moist to dry appearance, massive textured, well graded, CLAYEY SILT TILL with sand, trace to some gravel. Coarse gravel, cobbles and boulders of limestone, dolostone and igneous composition estimated to comprise 10 to 20% of sample below depth of 12 m resulting in poor sample recovery.		8.23	8									Sample 5,, 8.15m-8.23m,, Sieve and Hydrometer,, Sample 6,, 8.46m-8.53m,, Sieve and Hydrometer,,				
9					9													
10														Sample 7,,				

CONTINUED NEXT PAGE

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: RDB

CHECKED: RDB

PROJECT: 04-1112-047

RECORD OF DRILLHOLE: MW 04-05

SHEET 2 OF 3

LOCATION: N 4787047.3 ;E 487836.7

DRILLING DATE: August 12, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate; BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage; PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular; PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break; BR - Broken Rock

NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH	COLOUR % RETURN	RECOVERY TOTAL CORE %	RECOVERY SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
10		*--- CONTINUED FROM PREVIOUS PAGE ---*																	
10	PQ Soil Coring	LOWER GLACIAL TILL Hard, medium brownish grey, moist to dry appearance, massive textured, well graded, CLAYEY SILT TILL with sand, trace to some gravel. Coarse gravel, cobbles and boulders of limestone, dolostone and igneous composition estimated to comprise 10 to 20% of sample below depth of 12 m resulting in poor sample recovery.			9										9.91m-9.97m,, Sieve and Hydrometer,,				
11					10										Sample 8,, 11.43m-11.49m,, Sieve and Hydrometer,,				
12																			
13					11										Sample 9,, 12.95m-13.04m,, Sieve and Hydrometer,,				
14																			
15					12														Grout
		Bedrock Surface		298.56															
16		UPPER LUCAS FORMATION LIMESTONE Faintly to moderately weathered on open bedding partings, grey to brownish grey, fine grained, faintly porous, thin bedded LIMESTONE.		15.57	13										FR,PL,Ro FR,UE,VR FR,PL,Ro				
17																			
18	HQ Coring			295.96	14										FR,PL,Ro FR,PL,SM FR,UE,Ro				
		UPPER LUCAS FORMATION DOLOMITIC LIMESTONE		18.17															
19		Fresh, faintly to moderately weathered on open bedding partings, tan to grey, fine grained, non-porous to faintly porous, thin to medium bedded DOLOMITIC LIMESTONE with thin crystalline gypsum horizons.			15										FR,UE,VR FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,VR FR,CU,VR				
20		*CONTINUED NEXT PAGE*			16														

DEPTH SCALE

1 : 50

LOGGED: RDB

CHECKED: RDB

Golder Associates

MISS-ROCK-2 041112047AARCK.GPJ GAL-CANADA.GDT 3/3/05 DD

PROJECT: 04-1112-047

RECORD OF DRILLHOLE: MW 04-05

SHEET 3 OF 3

LOCATION: N 4787047.3 ;E 487836.7

DRILLING DATE: August 12, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

JN - Joint; FLT - Fault; SHR- Shear; VN - Vein; CJ - Conjugate
BD- Bedding; FO- Foliation; CO- Contact; OR- Orthogonal; CL - Cleavage
PL - Planar; CU- Curved; UN- Undulating; ST - Stepped; IR - Irregular
PO- Polished; K - Slickensided; SM- Smooth; Ro - Rough; MB- Mechanical Break
BR - Broken Rock
NOTE: For additional abbreviations refer to list of abbreviations & symbols.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. / DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH	COLOUR / % RETURN	RECOVERY TOTAL CORE %	RECOVERY SOLID CORE %	R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA: B Angle	DISCONTINUITY DATA: DIP w.r.t. CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
20		*--- CONTINUED FROM PREVIOUS PAGE ---*																	
	HQ Coring	UPPER LUCAS FORMATION DOLOMITIC LIMESTONE Fresh, faintly to moderately weathered on open bedding partings, tan to grey, fine grained, non-porous to faintly porous, thin to medium bedded DOLOMITIC LIMESTONE with thin crystalline gypsum horizons.			16										FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro				
21																			
22					17										FR,PL,VR FR,PL,SM FR,UE,Ro				
23															FR,PL,Ro				
					18										FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro				Grout
24															FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,VR FR,PL,VR				
				289.36															
		LOWER LUCAS FORMATION DOLOSTONE Fresh, light tan to grey, fine grained, non-porous to faintly porous, thin to medium bedded DOLOSTONE. Top of unit marked by thin, grey mottled porous dolostone bed between 27.17 and 27.38 m depth.		24.77											FR,UE,Ro				
25					19										FR,UE,Ro FR,PL,Ro				
															FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,PL,Ro FR,CU,Ro				
26					20														
27															FR,PL,Ro FR,PL,Ro				
				286.70											FR,PL,Ro FR,PL,Ro FR,PL,Ro				
		END OF BOREHOLE		27.43															Note: Borehole bentonite grouted to surface on completion of drilling
28																			
29																			
30																			

DEPTH SCALE

1 : 50

Golder Associates

LOGGED: RDB

CHECKED: RDB

MISS-ROCK-2 041112047AARCK.GPJ GAL-CANADA.GDT 3/3/05 DD