

GRAIN SIZE DISTRIBUTION

AECOM

MATERIALS LABORATORY

AECOM

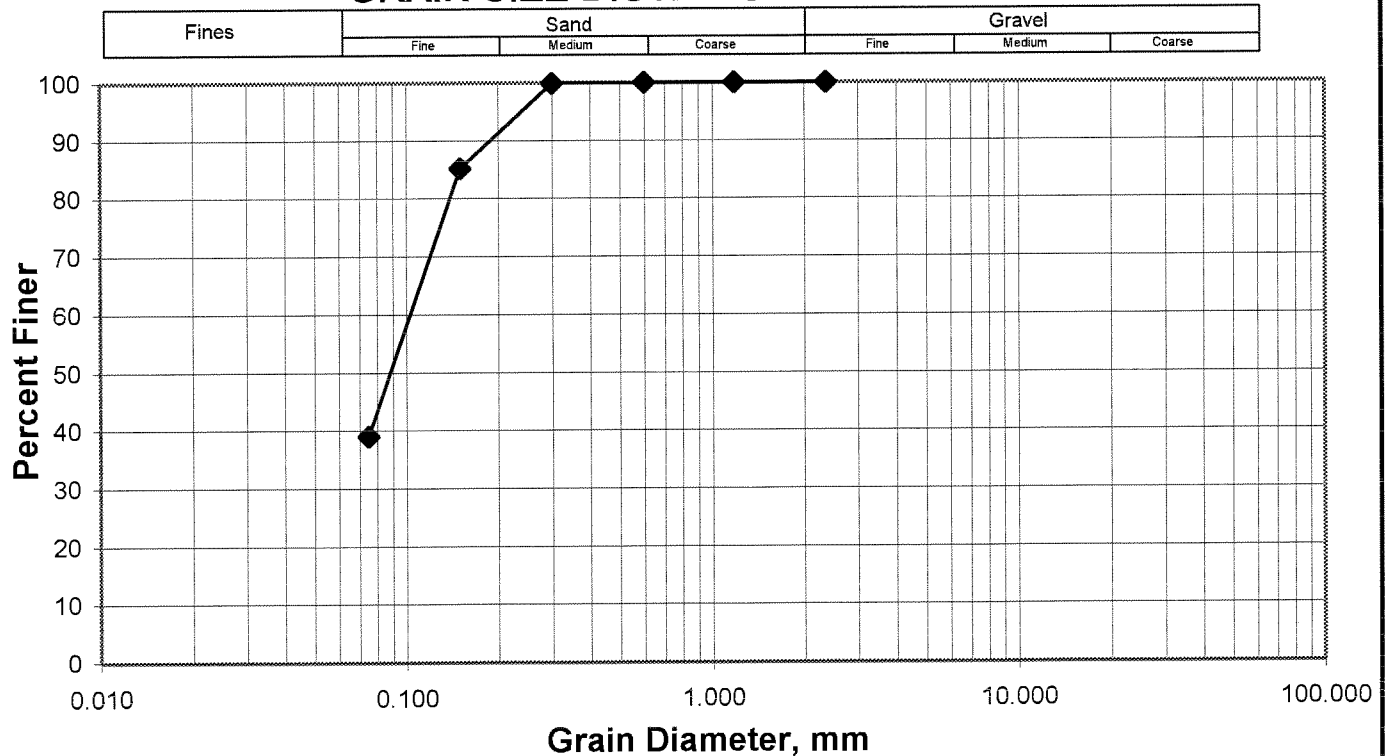
99 Commerce Drive, Winnipeg, Manitoba, R3P 0Y7
tel (204) 477-5381 fax (204) 284-2040

Client: Manitoba Hydro
Project: Keeyask Gen. Stn. - Infrastructure
Job No: 0217-200-07-0300
Date : 18-Sep-09

Hole No. 09-15
Sample No. ES-05
Depth: 3.7 - 3.8 m
Sample Description: Sand and Silt

Sieve (mm.)	Sieve No.	Total Percent Passing	Specification (min - max)
100.0	4"		
75.0	3"		
50.0	2"		
37.5	1 1/2"		
25.0	1"		
19.0	3/4"		
16.0	5/8"		
12.50	1/2"		
9.50	3/8"		
4.75	No. 4		
2.36	No. 8		
1.180	No. 16	100.0	
0.600	No. 30	100.0	
0.300	No. 50	99.9	
0.150	No. 100	85.2	
0.075	No. 200	39.0	

GRAIN SIZE DISTRIBUTION CURVE



Enclosure 3
Percolation test results

Keyask Startup Camp Investigation - Percolation Testing Results (September 2009)

TEST	TH-09-13					TH-09-14					TH-09-17		TH-09-19			
Ground Water Levels																
Ground Elev	179.25					179.73					169.21	173.30				
T.O.P.	180.22					180.72										
Stick up (m)	0.97					0.99					NA	NA				
Depth to bottom (m)	5.57					4.09					NA	NA				
Tip Elev (m)	174.65					176.63										
Water Levels (m)																
Sept 19	Dry					Dry					NA	NA				
Water Elev (m)																
Pre-Percolation Test																
Date	9/17/2009					9/17/2009					9/17/2009	9/17/2009				
Stick up	980mm					980mm					1100mm	935mm				
Stick up to gravel	2290mm					2060mm					2238mm	2095mm	209.5			
0 sec	2140mm					1910mm					2088mm	1945mm				
30 sec	2140mm					1914mm					2090mm	1955mm				
1 min	2140mm					1917mm					2092mm	1972mm				
2 min	2140mm					1922mm					2094mm	2000mm				
3 min	2140mm					1928mm					2096mm	2024mm				
4 min	2141mm					1934mm					2096mm	2044mm				
5 min	2145mm					1942mm					2096mm	2061mm				
6 min	2148mm					1945mm					2096mm	2081mm				
7 min	2148mm					1947mm					2096mm	2094mm				
8 min	2150mm					1952mm					2096mm	Dry @ 7 min 25sec				
9 min	2153mm					1957mm					2097mm					
10 min	2154mm					1962mm					2097mm					
Percolation Test																
Date	9/19/2009					9/19/2009					9/18/2009	9/18/2009				
Pre-Soak Time	4 hrs					4 hrs					16 hrs -30 hrs	0 hrs				
Start Time (24hr)	13:30					13:31					11:00	12:45				
End Time (24hr)	15:03					15:35					12:30	14:32				
# of Refills	4					3					0	10				
Avg Time of Refill	2 min	time (min)	cm	cm	rate	2 min	time (min)	cm	cm	rate	0	2 min	time (min)	cm	cm	rate
Start Depth	2140mm		214	0	0	1910mm		191	0	0	2088mm	1945mm		194.5		
1	2152mm (30min 11sec)	30.183	215.2	1.2	25.2	1968mm (30min 2sec)	30.033	196.8	5.8	5.2	2088mm (30min 4sec)	Dry (8min 6sec)	8.100	209.5	15	0.5
2	2153mm (30min 6sec)	30.100	215.3	1.3	23.2	1989mm (30min 54sec)	30.900	198.9	7.9	3.9	2088mm (30min 0sec)	Dry (8min 19sec)	8.317	209.5	15	0.6
3	2157mm (30min 1sec)	30.017	215.7	1.7	17.7	1993mm (30min 23sec)	30.383	199.3	8.3	3.7	2088mm (30min 10sec)	Dry (8min 42sec)	8.700	209.5	15	0.6
4	2163mm (30min 2sec)	30.033	216.3	2.3	13.1	1991mm (30min 6sec)	30.100	199.1	8.1	3.7	NA	Dry (9min 2sec)	9.033	209.5	15	0.6
5	2162mm (30min 12sec)	30.200	216.2	2.2	13.7	NA					NA	Dry (8min 52sec)	8.867	209.5	15	0.6
6	NA					NA					NA	Dry (8min 30sec)	8.500	209.5	15	0.6
7	NA					NA					NA	Dry (8min 8sec)	8.133	209.5	15	0.5
8	NA					NA					NA	Dry (8min 20sec)	8.333	209.5	15	0.6
9	NA					NA					NA	Dry (8min 22sec)	8.367	209.5	15	0.6
10	NA					NA					NA	Dry (8min 9sec)	8.150	209.5	15	0.5
11	NA					NA					NA	Dry (9min 1sec)	9.017	209.5	15	0.6

Keeyask Startup Camp Investigation - Standpipe Monitoring Results (September 19, 2009)

TEST	TH-09-13	TH-09-14	TH-09-15	TH-09-16	TH-09-17	TH-09-18	TH-09-19
Ground Water Levels							
Ground Elev T.O.P.	179.25 180.22	179.73 180.72	179.01	170.51 171.20	169.21	170.47	173.30
Stick up (m)	0.97	0.99	NA	0.69	NA	NA	NA
Depth to bottom (m)	5.57	4.09	NA	3.83	NA	NA	NA
Tip Elev (m)	174.65	176.63		167.37			
Water Levels (m)							
Sept 19 Water Elev (m)	Dry	Dry	NA	1.05	NA	NA	NA

Enclosure 4
Memorandum regarding west site

AECOM

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Memorandum

Date: 25 August 2009
To: Neil Klassen
From: Gil Robinson
Project Number: 0217-200-07-03 (4.7.3)
Subject: MB Hydro - Keeyask Generating Station - Infrastructure Engineering:
Start-Up Camp - Initial Septic Field Investigation

Distribution: Bob Romanetz, Jamie Ellis, Charisse McDonald

Field Program

The initial field investigation for the proposed septic field at the Start-Up Camp (SUC) location was completed on July 21 and 22, 2009 by Jared Baldwin, EIT and Geoff Nolette, CET of AECOM. A total of six test holes were drilled at the locations shown on the Test Hole location plan (Figure 1). Test Holes 09-01, 09-02, 09-03 and 09-04 were drilled in the general vicinity of the proposed septic field. Test Holes 09-05 and 09-06 were drilled between the proposed water well and the septic field locations. The test holes were drilled using a 50mm diameter hand auger to depths ranging from 1.4 to 3 m. The test hole depths were limited by subsurface conditions such as wet sand or very stiff clay. Representative soil samples were collected and returned to AECOM's Soils Testing Laboratory for further testing. Standpipe piezometers were installed in Test holes 09-01, 09-02 and 09-04 and falling head tests were subsequently performed. Using a spirit level, relative test hole elevations were surveyed at Test Holes 09-01, 09-02 and 09-04. The remaining test holes were not surveyed due to the density of trees. The test hole logs are attached in Appendix A, including details of the laboratory testing and piezometer installations.

Site Description

The proposed septic field is located midway between PR 280 and the proposed SUC location on the south side of the North Access Road. The site is covered with a layer of wet organics and tree cover varies from sparse to dense. The area is low lying and the slopes gently towards PR 280 at a grade of less than 2 percent, based on the topography contours visible on Figure 1.

Soil Stratigraphy

In general, the soil stratigraphy at the test hole locations, in descending order, includes organics, clay, silt / sand and clay. In two test holes a transition layer(s) was encountered between the upper clay layer and the silt / sand layer.

Organics

In general, a thin layer of organics ranging in thickness from 0.15 to 0.35 m was encountered at surface and was typically wet.

Clay

The organics are underlain by a layer of clay in all test holes. The clay ranges in thickness from 0.3 m to 0.45 m in test holes 09-01 and 09-02, respectively and in the Test Holes 09-06 and 09-03 the clay ranges in thickness from 1.20 m to 2.6 m, respectively. The clay is typically brown in color, silty and contains trace sand. The clay is typically firm in consistency and high in plasticity. The moisture content of the clay ranges from 20.5 to 30.1 percent with an average of 26 percent.

Transition Zone From Clay to Sand

A transition layer between the clay and sand was encountered in Test Holes 09-01 and 09-02. In Test Hole 09-01 a 0.15 m thick layer of clay and sand with some silt was encountered. In Test Hole 09-02 the two following layers, in descending order, were encountered: a 0.5 m thick layer of silty clay and sand overlying a 0.4 m thick layer of sandy clay and silt.

Silt / Sand

A layer of soil containing variable amounts of silt and sand was encountered below the clay layer in Test Holes 09-04 and 09-05. In Test Holes 09-01 and 09-02 this layer was encountered below the transition layer discussed above. The thickness of this layer is about 1.7 m, 1.5 m, 1.4 m and 0.15 m in Test Holes 09-01, 09-02, 09-04 and 09-05, respectively. The silt / sand layer typically contains trace to some clay. The moisture content ranges from 11.9 to 22.6 percent with an average of 15.7 percent.

Clay

A clay layer was encountered below the silt / sand layer in Test Holes 09-01 and 09-05. The clay is silty and contains at least trace amounts of sand. The thickness of this layer was not determined.

Groundwater Conditions

Seepage and Sloughing Conditions

Seepage from the surficial organic layer was observed in Test Holes 09-03 and 09-04. Groundwater seepage and/or sloughing was also observed in the silt / sand layer in Test Holes 09-01, 09-02 and 09-04.

The water levels measured in the standpipe piezometers approximately 12 hours after installation were 2.9 m, 1.7 m and 1.96 m below ground surface in Test Holes 09-01, 09-02 and 09-04, respectively. The natural groundwater levels can be expected to vary seasonally and from year to year.

Hydraulic Conductivity

Falling head tests were completed in each piezometer to aid in evaluating the saturated hydraulic conductivity of the soil below the water table. Water level data recorders were installed in the piezometers before the start of each falling head test to provide continuous water level data.

The falling head test data was analyzed using the software Aqtesolv. The results of the data analysis indicate that the saturated hydraulic conductivity of the soils below the groundwater table is 2.0×10^{-6} m/sec, 2.2×10^{-7} m/sec and 6.9×10^{-7} m/sec in Test Holes 09-01, 09-02 and 09-04, respectively. These hydraulic conductivity rates are consistent with the lower end of typical values for very fine sands and silts. The hydraulic conductivities are at the lower end for the soil types encountered due to the clay observed in the silt / sand layer.

Discussion

The proposed septic field is located in a relatively low lying, wet, flat area and a variety of factors will need to be considered during design including site drainage and frost protection.

The results of the field program suggest that the soil stratigraphy in the area is quite variable and that the more permeable silt / sand layer is confined at the top and bottom by clay. The overlying organics and clay will need to be removed locally or over the entire septic field area to permit infiltration of the effluent water into the underlying silt / sand layer. Once the overlying clay layer is breached it will be necessary to provide perimeter ditching and / or raising of the general area to prevent surface run-off from the upslope area from seeping into the septic field and overloading the silt / sand layer.

The results of the field program also suggest that the silt / sand layer may not be uniform in thickness and extent. If the extent of the silt / sand layer is confined laterally and vertically by clay the capacity of the field may be limited by the permeability of the clay that was encountered in some of the test holes.

The surface grade of the site is quite flat, less than 2 percent, which will result in a fairly flat hydraulic gradient i.e. slope of the groundwater table. This may also result in seepage into the ditches along the east side of PR 280.

Frost protection should also be considered during detailed design. Frost protection for the field can be provided by providing additional soil cover and/or the use of rigid Styrofoam insulation.

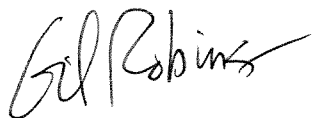
Additional Investigation Work

The proposed site needs to be investigated further to help determine if the silt / sand layer at the proposed site is confined laterally and vertically by less permeable soils such as clay. If the proposed site is still to be considered additional test holes should be drilled between the west end of the proposed field and PR 280 to confirm the soil stratigraphy and groundwater conditions are suitable for the proposed septic field.

Based on site grades (Figure 1) and test hole information from Manitoba Hydro (MH) (see Appendix B), two other sites that may be feasible for a septic field include the topographic high area directly east of the proposed SUC site (Figure 1) and on the north side of the North Access Road (NAR). The area east of the proposed SUC is relatively high and the soil stratigraphy for Test Holes BH-G-5017 and 5360 (see Figure 1 for locations) show that the sand layer may extend more than about 4 m below surface with only a thin layer of clay near ground surface. Considerations for a septic field at this location would include the need to level the site to provide sufficient surface area and seepage towards the SUC, the existing borrow pit and the proposed groundwater well. The water well location would need to be reviewed to determine if it should be installed in a different location if this site is to be used for a septic field.

On the north side of the NAR the topography contours on Figure 1 suggest the site slopes to the north, away from the NAR and the SUC, at grades ranging from 2 to 4 percent. The MH test hole information along the NAR (BH-0+000 to 0+800 – locations shown on Figure 1) show that in the area of BH-0+600 to 0+800 there is no clay in the upper 3 m of the soil stratigraphy. Considerations for a septic field at this location would include piping below the NAR.

It is expected that some clearing and grubbing would be required to facilitate test hole drilling in these areas. Details for additional drilling work can be provided once the information in this Memo has been reviewed and feedback provided.



Gil Robinson, P.Eng.
Geotechnical Engineer
/dh

Encl.

Enclosure 5
Field Sizing Calculations

Ref	Notes:	Output																
	<table><tr><th>TABLE OF CONTENTS</th><th>PAGES</th></tr><tr><td>ToC, Introduction, Design Constraints</td><td>A1</td></tr><tr><td>Design Constraints</td><td>A1</td></tr><tr><td>Multiple Trench System (Aggregate)</td><td>A2</td></tr><tr><td>Multiple Trench System (Chamber)</td><td>A3</td></tr><tr><td>Total Area Field (Aggregate)</td><td>A4</td></tr><tr><td>Total Area Field (Chamber)</td><td>A5</td></tr><tr><td>Summary</td><td>A6</td></tr></table>	TABLE OF CONTENTS	PAGES	ToC, Introduction, Design Constraints	A1	Design Constraints	A1	Multiple Trench System (Aggregate)	A2	Multiple Trench System (Chamber)	A3	Total Area Field (Aggregate)	A4	Total Area Field (Chamber)	A5	Summary	A6	
TABLE OF CONTENTS	PAGES																	
ToC, Introduction, Design Constraints	A1																	
Design Constraints	A1																	
Multiple Trench System (Aggregate)	A2																	
Multiple Trench System (Chamber)	A3																	
Total Area Field (Aggregate)	A4																	
Total Area Field (Chamber)	A5																	
Summary	A6																	
	<p>Introduction</p> <p>These calculations are required to determine the required size of a drain field for the Keeyask Generating Station start-up camp.</p> <p>The drain field will dispose of both grey and septic water from the start-up camp using a two cell septage tank, pump and drain field.</p>																	
	<p>Design Constraints</p> <table><tr><td>Camp popluation</td><td>150</td><td></td></tr><tr><td>Per capita water consumption</td><td>340</td><td>LCPD</td></tr><tr><td>Total daily effluent flow (Accounts for 17.7% WTP Backwash)</td><td>60000</td><td>L/Day</td></tr><tr><td>Application rate (Based on geotechnical investigation by AECOM)</td><td>12.72</td><td>L/m²/Day</td></tr></table>	Camp popluation	150		Per capita water consumption	340	LCPD	Total daily effluent flow (Accounts for 17.7% WTP Backwash)	60000	L/Day	Application rate (Based on geotechnical investigation by AECOM)	12.72	L/m ² /Day					
Camp popluation	150																	
Per capita water consumption	340	LCPD																
Total daily effluent flow (Accounts for 17.7% WTP Backwash)	60000	L/Day																
Application rate (Based on geotechnical investigation by AECOM)	12.72	L/m ² /Day																
	<p>References:</p> <p>1 Enviroment Act (E125 - R.M. 83/2003), Table (Wastewater Effluent Application Rates for Trench-type and Total Area Disposal Fields)</p>																	
1																		

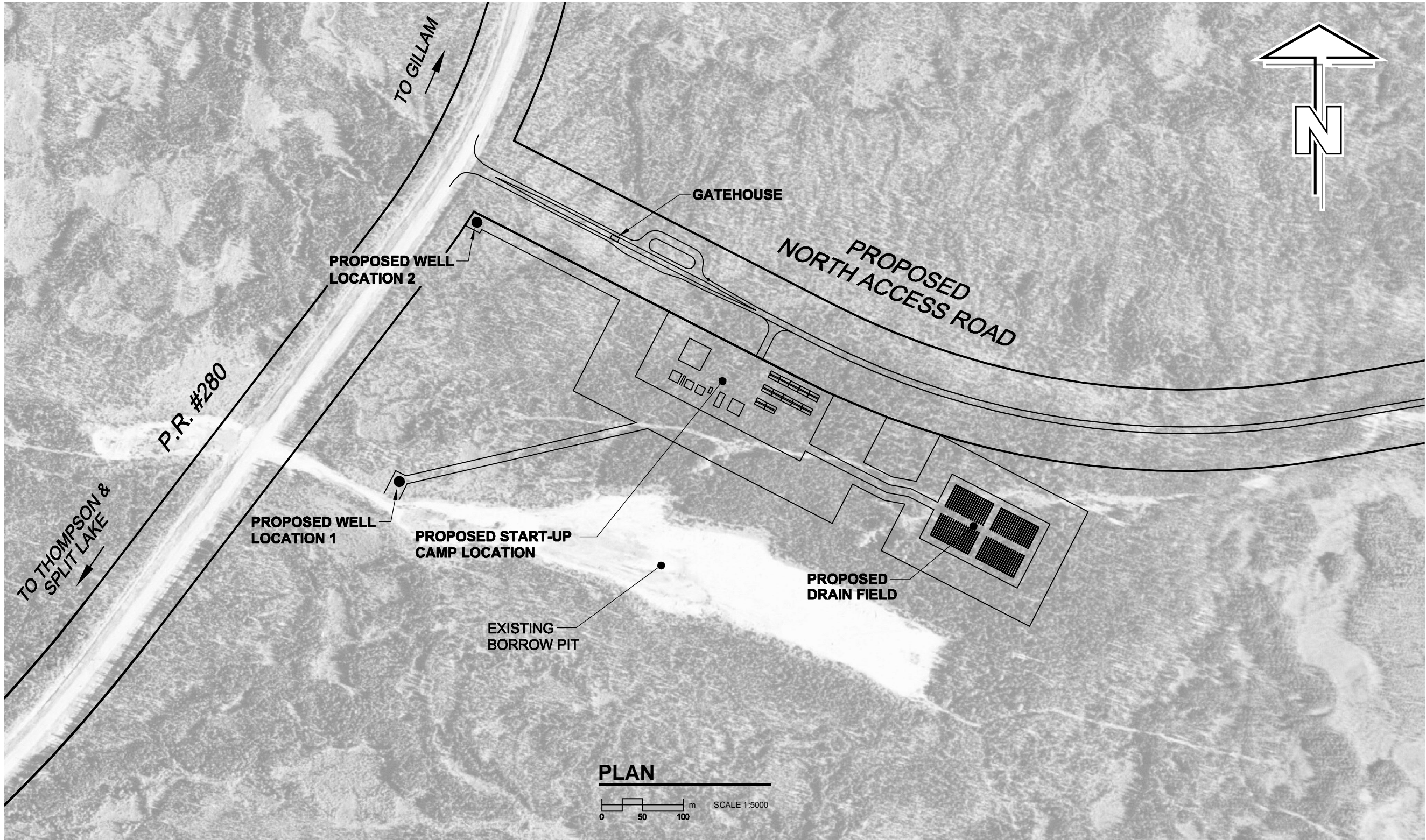
Ref	Notes:	Output
	Trench System using a Traditional Pipe and Aggregate	
	Camp population 150	
	Water consumption 340 LPCD	
	Percent of water discharged through system 100%	
	Daily Volume (Q) 60000 L	
1	Application Rate 12.72 L/m ² /Day (Based on silty loam soil in area)	
	Trench Geometry	
2	Trench width (W) 1.00 m (Maximum allowed width)	
3	Trench Depth 1.00 m (Maximum allowed depth)	
4	Height of distribution pipe above trench bottom (H) 0.6 m (1m deep trench - (0.3 m earth cover + 0.1 m stone cover))	
5	Area of trench per linear meter (A) 1.300 m ² /Linear m	
	$Length of Trench = \frac{Daily Effluent Flow}{(Application Rate) \times (Application Area)}$	
	Length of trench required 3628.45 m	
	Field Geometry	
6	Length of laterals 18 m (Maximum length of laterals)	
	# of laterals required 202	
7	Spacing 2 m (Minimum distance between trenches)	
	Total width of field (assume one large area) 604.00 m	
	Total field area 10872.00 m ²	
	References:	
1	Environment Act (E125 - R.M. 83/2003), Table (Wastewater Effluent Application Rates for Trench-type and Total Area Disposal Fields)	
2	Environment Act (E125 - R.M. 83/2003), Schedule A, Section 2(3)	
3	Environment Act (E125 - R.M. 83/2003), Schedule A, Section 2(3)	
4	Environment Act (E125 - R.M. 83/2003), Schedule A, Section 2(4)	
5	Environment Act (E125 - R.M. 83/2003), Schedule A, Section 2(4)	
6	Environment Act (E125 - R.M. 83/2003), Schedule A, Section 2(4)	
7	Environment Act (E125 - R.M. 83/2003), Schedule A, Section 2(3)	

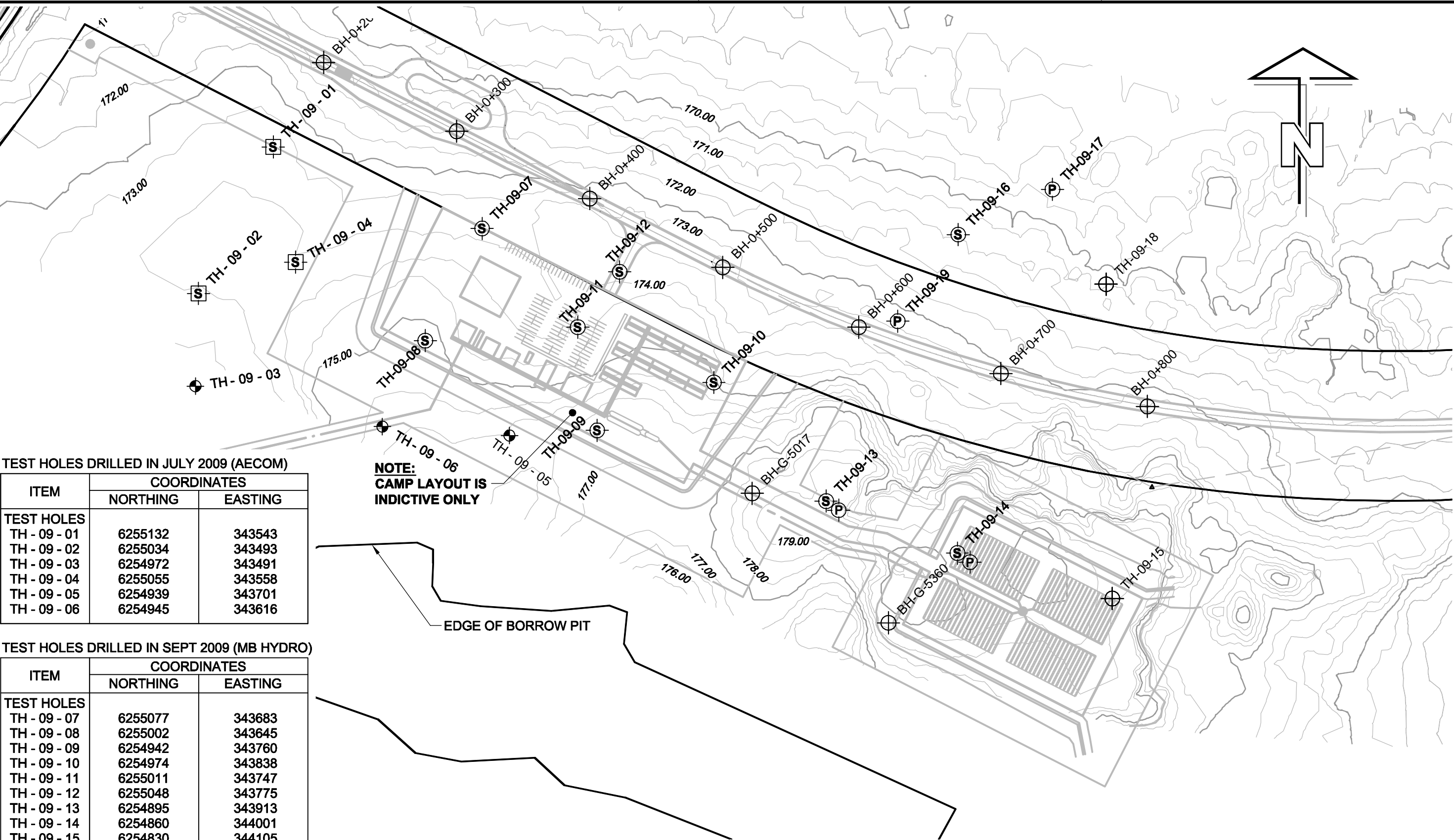
Ref	Notes:	Output
	Trench System using a Chamber Design	
	Camp population 150	
	Water consumption 340 LPCD	
	Percent of water discharged through system 100%	
	Daily Volume (Q) 60000 L	
1	Application Rate 12.72 L/m ² /Day (Based on silty loam soil in area)	
2	Open Area Multiplier 1.5	
	Trench Geometry	
3	Trench width (W) 0.86 m (Width of Infiltrator Systems Quick4 High Capacity Chambers)	
4	Area of trench per linear meter (A) 1.463 m ² /Linear m (Area of Infiltrator Systems Quick4 High Capacity Chambers)	
	$LengthofTrench = \frac{DailyEffluentFlow}{(ApplicationRate) \times (ApplicationArea) \times (OpenAreaMultiplier)}$	
	Length of trench required 2149.46 m	
	Field Geometry	
5	Length of laterals 29.256 m (Maximum length of laterals)	
	# of laterals required 74 (Use 76 laterals to facilitate splitting into quadrants)	
6	Spacing 2 m (Minimum distance between trenches)	
	Total width of field (assume one large area) 209.94 m	
	Total field area 6141.8876 m ²	
	References:	
	1 Environment Act (E125 - R.M. 83/2003), Table (Wastewater Effluent Application Rates for Trench-type and Total Area Disposal Fields)	
	2 Environment Act (E125 - R.M. 83/2003), Schedule A, Section 2(5)	
	3 Design and Installation Manual for Quick4 Chambers in Manitoba, Page 5	
	4 Design and Installation Manual for Quick4 Chambers in Manitoba, Page 9	
	5 Environment Act (E125 - R.M. 83/2003), Schedule A, Section 2(5)	
	6 Environment Act (E125 - R.M. 83/2003), Schedule A, Section 2(3)	

Ref	Notes:	Output
	Total Area Field Using Pipe and Aggregate	
	Camp population 150	
	Water consumption 340 LPCD	
	Percent of water discharged through system 100%	
	Daily Volume (Q) 60000 L	
1	Application Rate 12.72 L/m ² /Day (Based on silty loam soil in area)	
2	Safety Factor 2 (Safety factor for pipe and aggregate systems)	
	$Area of Field = \frac{(Daily Effluent Flow) \times (Safety Factor)}{Application Rate}$	
	Area of field required 9433.96 m ²	
	Field Geometry	
	Assumed width of field 30 m	
	Length of field 314.47 m	
	References:	
	1 Environment Act (E125 - R.M. 83/2003), Table (Wastewater Effluent Application Rates for Trench-type and Total Area Disposal Fields)	
	2 Environment Act (E125 - R.M. 83/2003), Schedule A, Section 2(6)	

Ref	Notes:	Output
	Total Area Field Using a Chamber Design	
	Camp population 150	
	Water consumption 340 LPCD	
	Percent of water discharged through system 100%	
	Daily Volume (Q) 60000 L	
1	Application Rate 12.72 L/m ² /Day (Based on silty loam soil in area)	
2	Safety Factor 1.5 (Safety factor for chamber systems)	
	$AreaofField = \frac{(DailyEffluentFlow) \times (SafetyFactor)}{ApplicationRate}$	
	Area of field required 7075.47 m ²	
	Field Geometry	
	Assumed width of field 30 m	
	Length of field 235.85 m	
	References:	
	1 Environment Act (E125 - R.M. 83/2003), Table (Wastewater Effluent Application Rates for Trench-type and Total Area Disposal Fields)	
	2 Environment Act (E125 - R.M. 83/2003), Schedule A, Section 2(6)	

Ref	Notes:	Output												
	<p>Summary:</p> <p>Total field areas:</p> <table> <tr> <td>Pipe and aggregate trench system</td><td>10,872</td><td>m²</td></tr> <tr> <td>Chamber trench system</td><td>6,142</td><td>m²</td></tr> <tr> <td>Pipe and aggregate total area field</td><td>9,434</td><td>m²</td></tr> <tr> <td>Chamber total area field</td><td>7,075</td><td>m²</td></tr> </table> <p>Therefore: Chamber trench system will cover the least amount of total area</p>	Pipe and aggregate trench system	10,872	m ²	Chamber trench system	6,142	m ²	Pipe and aggregate total area field	9,434	m ²	Chamber total area field	7,075	m ²	
Pipe and aggregate trench system	10,872	m ²												
Chamber trench system	6,142	m ²												
Pipe and aggregate total area field	9,434	m ²												
Chamber total area field	7,075	m ²												

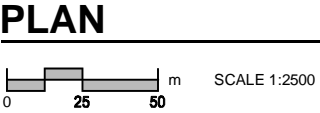




ITEM	COORDINATES	
	NORTHING	EASTING
TEST HOLES		
TH - 09 - 01	6255132	343543
TH - 09 - 02	6255034	343493
TH - 09 - 03	6254972	343491
TH - 09 - 04	6255055	343558
TH - 09 - 05	6254939	343701
TH - 09 - 06	6254945	343616

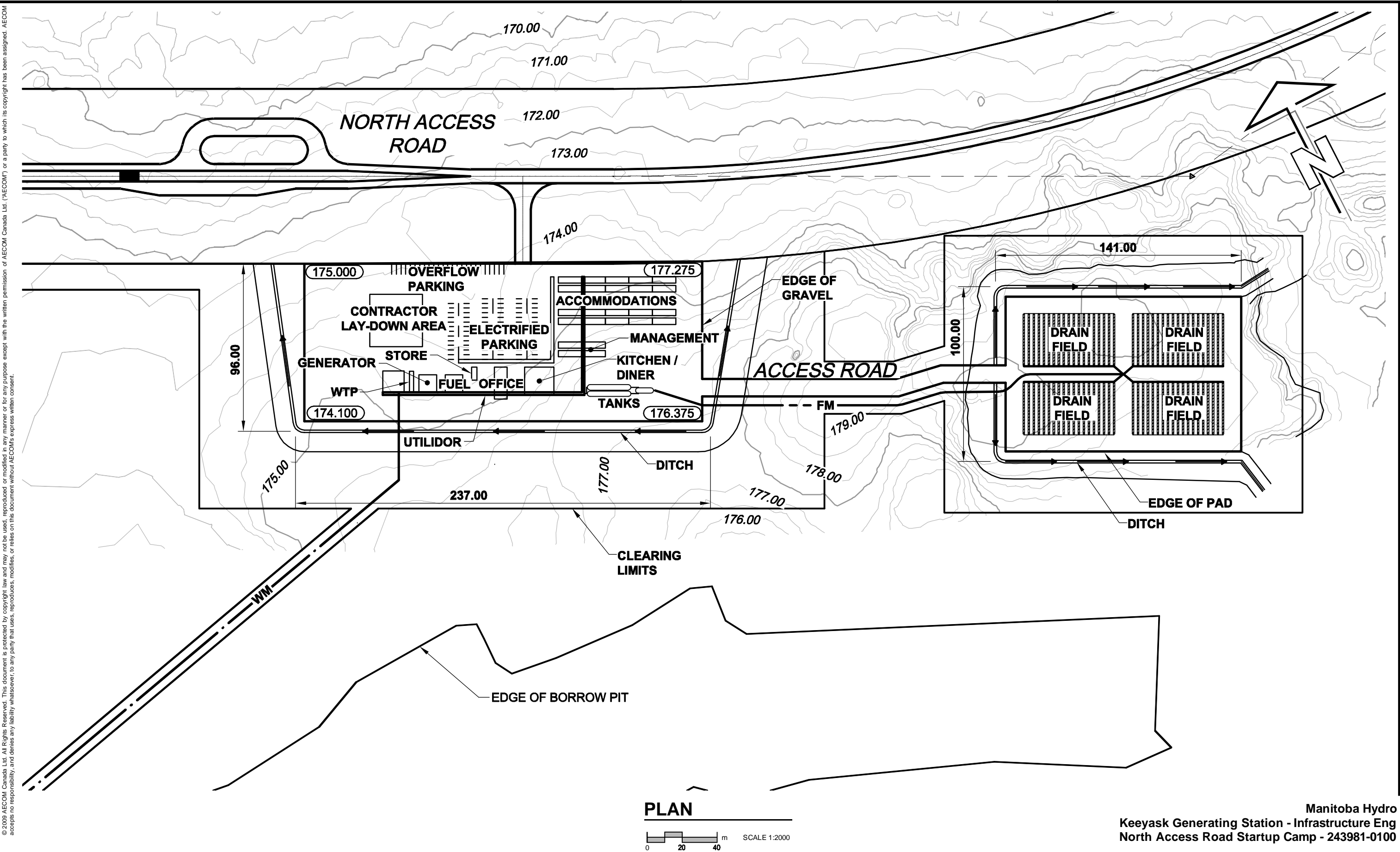
ITEM	COORDINATES	
	NORTHING	EASTING
TEST HOLES		
TH - 09 - 07	6255077	343683
TH - 09 - 08	6255002	343645
TH - 09 - 09	6254942	343760
TH - 09 - 10	6254974	343838
TH - 09 - 11	6255011	343747
TH - 09 - 12	6255048	343775
TH - 09 - 13	6254895	343913
TH - 09 - 14	6254860	344001
TH - 09 - 15	6254830	344105
TH - 09 - 16	6255073	344001
TH - 09 - 17	6255103	344064
TH - 09 - 18	6255040	344100
TH - 09 - 19	6255015	343961

- TEST HOLE (AECOM)
- STANDPIPE (AECOM)
- TEST HOLE (MB HYDRO)
- STANDPIPE (MB HYDRO)
- 100mm PERCOLATION WELL (MB HYDRO)

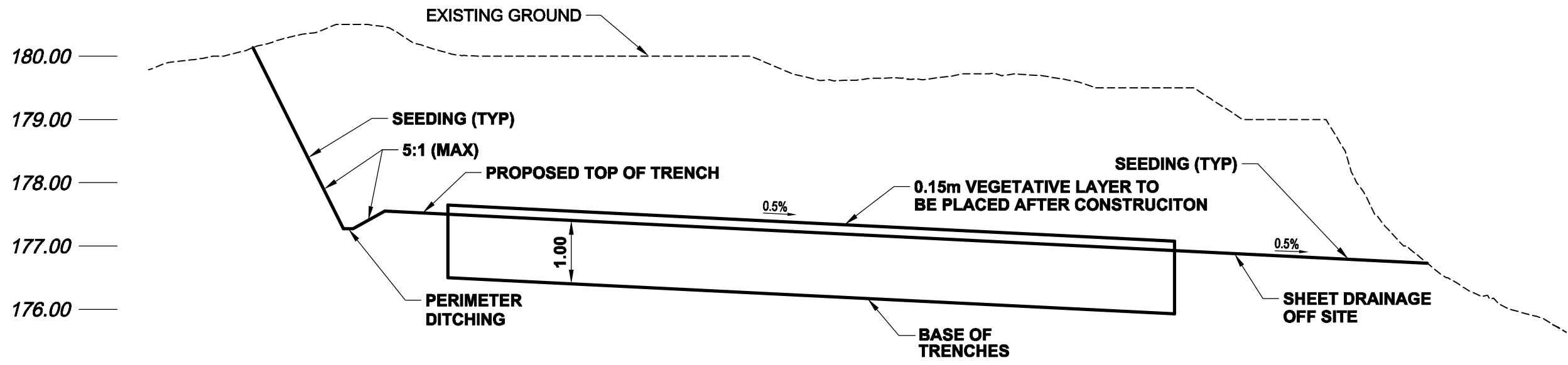


Manitoba Hydro
Keeyask Generating Station - Infrastructure Eng
North Access Road Startup Camp - 243981-0100

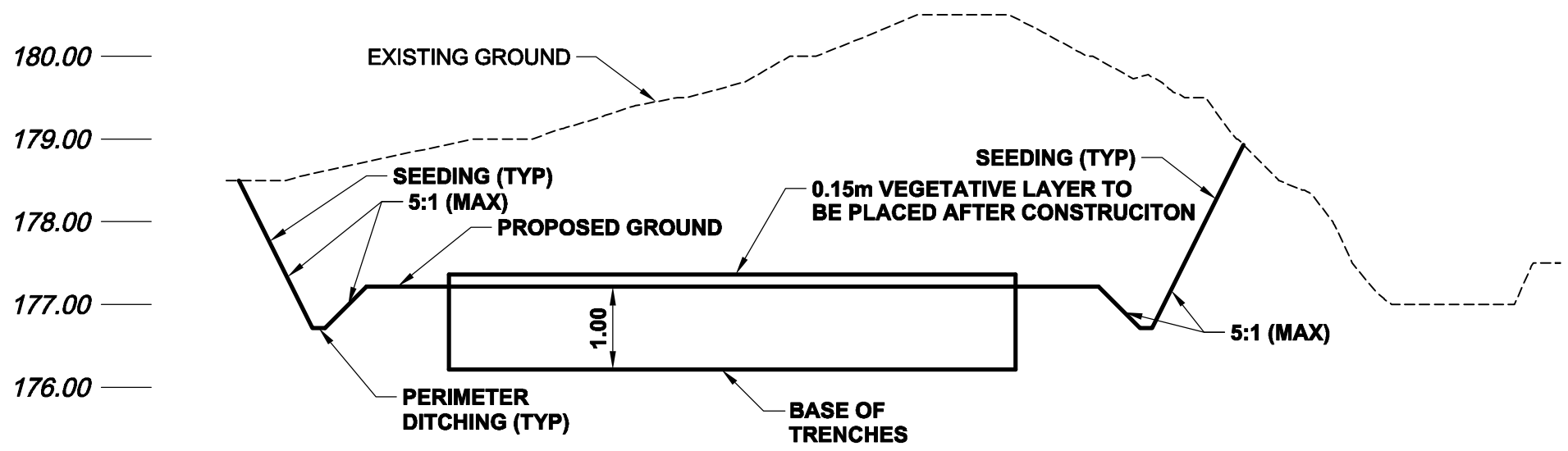
TEST HOLE LOCATION PLAN
Figure 2







SECTION A
FIGURE 4
H=1:750
V=1:75
0 7.5 15 22.5 m
0 0.75 1.5 2.25



SECTION B
FIGURE 4
H=1:750
V=1:75
0 7.5 15 22.5 m
0 0.75 1.5 2.25

SEPT. 28TH 2009
JDE

Project No. 0217-200-07

Page 1 of 1

NORTH
↑

NORTH ACCESS ROAD

START-UP

CAMP

UTILIDOCK

UTILIDOCK

FLOW
SPLITTER
BOX.

VALUES.

2 x 42,000 L

SEDIMENTATION
TANKS WITH
PUMP OUT HATCHES.
AND INTERCONNECTING
OVERFLOW PIPE.

1 x 12,000 L

CONTROL TANK
WITH 2 SUBMERGIBLE
PUMPS + LEVEL ALARMS
+ FLOAT SWITCHES.
+ CHECK VALVES.

DRAIN FIELD.

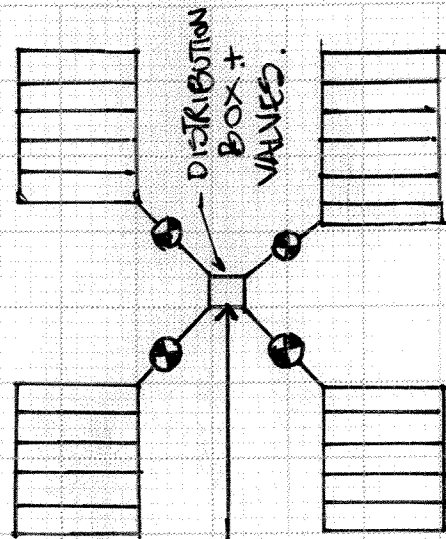


FIGURE 6:

SKETCH OF SEPTIC
TANK AND VALVE
ARRANGEMENT.

APPENDIX D

PUBLIC CONSULTATION

Appendix D15

Environmental Non-Government Organization Meeting Notes



Proposed Keeyask Infrastructure Project:

Winnipeg Environmental Non-Government Organization Meeting

Meeting Notes

Date of Meeting: August 19, 2009 – 3:00 pm to 6:00 pm

Location: Delta Hotel, Winnipeg

In Attendance:	John Garson	KCN
	Bill Kennedy	KCN
	Michael Lawrenchuk	KCN
	Lazarus Kitchokeesik	KCN
	Peter Miller	TREE and Resource Conservation Manitoba
	Byron Williams	Public Interest Law Centre
	Aimée Craft	Public Interest Law Centre
	Gloria Desorcy	Consumers Association of Canada (Manitoba Chapter)
	Gaile Whelan-Enns	Manitoba Wildlands
	Jessica McCreary	Manitoba Wildlands
	Kelly Whelan-Enns	Manitoba Wildlands
	Dave Yallits	Manitoba Building & Construction Trades Council
	Ryan Kustra	Manitoba Hydro
	John Osler	InterGroup Consultants
	David Lane	InterGroup Consultants

PURPOSE OF MEETING

The purpose of the meeting was to:

- Provide background information about the proposed Keeyask Infrastructure Project;
- Provide information about the Environmental Impact Assessment (EIA); and
- Identify issues and concerns organizations have regarding the proposed project and the EIA.

Seven organizations that had participated in an earlier workshop regarding the Keeyask Project were contacted by telephone during the week of August 2nd 2009 and by email on August 9th 2009 to provide them with the opportunity to participate in a meeting to discuss the proposed project. Attached to the initial email were copies of the Environmental Act Proposal Form (EAPF) and Navigable Waters Protection Act Application that were filed in support of this project.

Upon acknowledgment from interested parties another email was sent confirming their attendance and logistics for the meeting. This email also indicated that CD copies of the Environmental Assessment Report and Preliminary Construction Environmental Protection Plan would be forwarded to all attendees.

A letter was sent by courier on August 12th containing the CDs and some background on the project (Appendix D14). Draft meeting notes were distributed to participants for review before being finalized.

MEETING PROCESS

The meeting was held at the Delta Hotel in Winnipeg. In total, 12 people attended, representing four ENGOs and two of the four KCN communities. Victor Spence (TCN), Betsy Kennedy (WLFN) and Elly Bonny (YFFN Coordinator) expressed their regrets.

The meeting began with a prayer by John Garson of Tataskweyak Cree Nation and introductions by the attendees. A brief presentation was provided, describing the project, the environmental assessment process and related studies. Participants were encouraged to ask questions and raise perspectives during the presentation and additional discussion occurred afterwards.

The following are highlights of the perspectives heard at the information session and are intended to capture the key points that were raised by organization representatives. They are not presented in the sequence that they were raised at the meeting, nor are they a detailed or verbatim transcription of what was said. Not all of the comments related directly to the Project, but are noted as part of the meeting record.

KEY PERSPECTIVES AND ISSUES IDENTIFIED BY ENGO REPRESENTATIVES

- Concerns were expressed about the expenditure of \$175 million (\$300 million with interest and escalation) without oversight or economic/financial information. It was suggested by the environmental organizations that a need for and alternative review, similar to that conducted for Wuskwatim, would be appropriate.
- There was discussion about the licensing process, in which the Keeyask Infrastructure Project is being licensed separately from the Generating Station Project. The advantages and disadvantages of this process were acknowledged.
- Concerns were expressed about the appropriate scope for a “need for and alternatives to” assessment. There was a feeling that an assessment of alternatives should include the financial costs of the projects, as well as the social and environmental costs and benefits.
- The importance of a decommissioning plan in the EA Report was noted.
- There was a concern regarding how cumulative effects would be dealt with since the timing of the Keeyask Generating Station and other projects is uncertain.
- Interest was expressed about how federal and provincial Section 35 consultations will take place within a short timeframe.
- There was discussion on the scope of the project, including study areas, defined baseline and cumulative effects in an area with other projects and uncertainty.
- Attendees emphasized the need to work cooperatively with all parties to address environmental, social, economic and regulatory issues.

- A KCN representative highlighted the importance of harvesting caribou in the area for food and noted that they have been working with scientists and their members to understand the potential impacts on caribou.

Action item: Manitoba Hydro is prepared to enter in a process to consult on the suite of its major projects for export development. It is to get back to the organizations soon to further explore this process.