2010 ANNUAL MONITORING REPORT

WASTE MANAGEMENT OF CANADA
RICHMOND LANDFILL

TOWN OF GREATER NAPANEE, ONTARIO

Prepared for:

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1271 Beechwood Road
Napanee, Ontario
K7R 3L1

March 2011

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WESA Project No.: KB8578-00-04

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EXECUTIVE SUMMARY

This report provides a summary and analysis of the environmental monitoring program at the Waste Management of Canada Corporation (WM) Richmond Landfill Site during the period from January 1 to December 31, 2010. The report is prepared in accordance with the Amended Provisional Certificate of Approval No. A371203 dated March 31, 2010, specifically Conditions 9[a] (environmental monitoring aspects only), 9[b][i], 9[b][xx] and 9[b][xxii]. Activities related to Site development, operations and closure are reported under separate cover.

The environmental monitoring program includes water quality analyses for groundwater and surface water, in the spring and fall, on and around the site. The groundwater flow directions interpreted from the 2010 monitoring program are consistent with the results obtained in previous years for the shallow flow zone, as well as for the intermediate bedrock flow zone. The direction of groundwater flow in the shallow groundwater flow zone in the vicinity of the landfill is divergent to the north and south reflecting local discharge to Marysville Creek toward the north and to Beechwood Ditch to the south. The predominant direction of groundwater flow in the intermediate bedrock is towards the west, south and southeast, and is consistent with regional information.

Groundwater quality data from 2010 are generally consistent with historical results. Slightly elevated concentrations of a number of water quality parameters are seen in the shallow groundwater zone northwest and north of the Phase 1 landfill footprint, suggesting that the groundwater chemistry shows a dilute leachate signature. In other areas of the site, there is no evidence of groundwater impacts away from the landfill footprint in the shallow groundwater flow zone. The geochemical results for the intermediate bedrock groundwater flow zone indicate higher concentrations of water quality parameters south of the landfill relative to the concentrations west and north of the landfill. The higher concentrations are downgradient from the landfill footprint and occur in monitoring wells that are known to be hydraulically connected to each other. The concentrations at some of the monitoring wells immediately south of the landfill footprint may reflect minor groundwater impacts from site activities. Elsewhere south of the landfill footprint, the parameter concentrations exhibit different geochemical characteristics, and are believed to be the result of historic surface water infiltration and/or off-site sources. No comparison was made to Reasonable Use (RU) Limits since WM and MOE are actively continuing to address questions related to the Environmental Monitoring Plan (EMP). In any event, evaluation of the groundwater quality data indicates chemistry consistent with historical data and no off-site migration of leachate impacted groundwater. Continued groundwater monitoring within the shallow and intermediate bedrock groundwater flow zones between the landfill footprint and the low-head areas is warranted to further examine groundwater quality and trends over time.

The PWQO objectives were exceeded for some constituents in surface water at both upstream and downstream locations; consistent with historical results. The continuing sampling of Marysville Creek indicates that the landfill is not impacting the water quality of this creek.

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1.0 INTRODUCTION

The purpose of this document is to present results and to provide an interpretation of the data that were collected during the spring and fall 2010 semi-annual monitoring events at the Waste Management of Canada Corporation (WM) Richmond Landfill. This annual report is designed to summarize the results provided in the individual monitoring event reports previously submitted to MOE.

The WM Richmond Landfill is approved as a 16.2 hectare waste disposal (landfilling) facility within a total site area of 138 hectares, located on parts of Lots 1, 2 and 3, Concession IV of the former Township of Richmond, now in the Town of Greater Napanee, Ontario.

The site is licensed under the following Provisional Certificate of Approval (C of A) A371203 dated March 20, 1988 and subsequently amended on September 4, 1991, September 2, 1994, August 1, 1995, September 11, 1996, August 29, 2000, January 27, 2002, November 24, 2003, March 21, 2007 and March 31, 2010.

2.0 MONITORING PROGRAM

2.1 MONITORING PROGRAM MODIFICATIONS IN 2010

As required in the March 31, 2010 Amendment to the Provisional C of A, the spring monitoring event was conducted in accordance with condition 8(a) of the amended C of A. Condition 8(b) of the amended C of A required that WM prepare and submit an updated environmental monitoring plan (EMP) to MOE. An updated EMP, based on the previously submitted and MOE accepted Site Conceptual Model, was submitted to the MOE on June 29, 2010. Upon submittal of the updated EMP, condition 8(b) of the amended C of A stipulates that "*Pending final approval of the EMP by the Director, the Owner shall implement the EMP upon submission to Director.*" As such, the fall monitoring event was conducted in accordance with the updated EMP. Due to the timing of the updated EMP submittal and implementation, the spring and fall monitoring programs differ from each other. Methodology details regarding each of the monitoring events are presented in the follow section.

2.2 PROGRAM METHODOLOGY

Spring 2010 Semi-Annual Monitoring Event

The spring monitoring event was conducted between April 28 and May 6, 2010. The results from this event were submitted to MOE for review in a report dated September, 2010. The site layout and monitoring locations are shown on Figure 1a. The environmental monitoring program is presented in Table 1a, while the groundwater and leachate parameters analysed are summarized in Table 2a. Table 3a presents the groundwater elevation monitoring locations.

A total of 70 groundwater monitors were sampled from 42 locations during the spring groundwater sampling event conducted between May 3 and 6, 2010. Nine (9) groundwater monitoring wells could not be sampled because they (a) were dry (M3A-2, M46-1 and M99-1), (b) had insufficient recovery for sampling after purging (M4-1, M4-2, M29 and M50-2), or (c) because they were damaged (M23 and M58-4).

Spring surface water sampling was conducted on May 3, 2010 from locations S2, S3, S7 and S8R, while locations S4R and S5 were dry.

Leachate samples were collected from the North Chamber and South Chamber on May 4, 2010 and were analyzed for parameters listed in Table 2a (Lists C and D).

Landfill gas migration monitoring was conducted on May 5, 2010. Field measurements were made with a RKI Eagle probe calibrated to methane gas response at five (5) gas monitors (GM1 and GM3 to GM6).

Additionally, nine (9) field duplicate samples, three (3) field blanks, eight (8) trip blanks, and two (2) equipment blanks were collected during the spring sampling event, for a total of 16 Quality Assurance/Quality Control (QA/QC) samples. Deionised water for analysis of blank samples was supplied by the laboratory.

Fall 2010 Semi-Annual Monitoring Event

The fall monitoring event was conducted between October 25 and October 28, 2010. The results from this event were submitted to MOE for review in a report dated December, 2010. The site layout and monitoring locations are shown on Figure 1b. The environmental monitoring program is presented in Table 1b, while the groundwater and leachate parameters analysed are summarized in Table 2b. Table 3b presents the groundwater elevation monitoring locations in relation to the landfill footprint and hydrostratigraphic unit. Construction of the two new groundwater monitoring wells (M105 and M106) specified in Table 1 of the EMP (intermediate bedrock groundwater zone) was not completed at the time of the fall 2010 monitoring event; consequently these wells were not used to record water levels or for sampling as part of this event.

A total of 39 groundwater monitors were sampled from 36 locations. Three (3) groundwater monitoring wells could not be sampled because they (a) had insufficient recovery for sampling after purging (M29 and M39), or (b) were damaged (the standpipe in M58-4 was broken below the ground surface and contained bentonite).

Eight (8) off-site domestic water supply wells were sampled on October 27, 2010. Water samples from private supply wells were analyzed for groundwater inorganic and general parameters, as well as for VOCs.

Fall surface water sampling was conducted on October 27, 2010 from locations S2, S3, S5 and S8R, while location S4R was dry. Surface water samples were analyzed for the surface water inorganic and general parameters.

Landfill gas migration monitoring was conducted on October 25, 2010. Field measurements were made with a RKI Eagle probe calibrated to methane gas response at five (5) gas monitors (GM1 and GM3 to GM6).

Additionally, six (6) field duplicate samples, three (3) field blanks, and one (1) equipment blank were collected during the fall sampling event, for a total of 10 Quality Assurance/Quality Control (QA/QC) samples. Deionised water for analysis of blank samples was supplied by the laboratory.

2.3 Sample Collection and Laboratory Analysis Methodology

Groundwater and surface water samples were collected in accordance with accepted industry protocols. Groundwater samples were collected using dedicated Waterra inertial lift pumps connected to dedicated polyethylene tubing. Between one and three casing volumes of water were removed from each monitoring well prior to the collection of groundwater samples. During purging, readings for pH, conductivity and temperature were recorded on a regular basis. The stabilization of the parameters was used to assess when well purging was complete. Low producing wells were purged dry and allowed to recover prior to sampling. If the monitoring well had not recovered sufficiently for sampling within 24 hours, the monitor was considered dry and a sample was not collected.

Domestic supply wells were sampled at an access point before any treatment system. A typical sampling location was a tap or access located near the pressure tank or when access to the treatment system was not available, the sample was collected from the kitchen tap (with the aerator screen removed). Prior to collecting the water sample, the water was allowed to run for a minimum of five but more typically closer to 10 minutes to ensure the volume of the pressure tank and supply line was purged and that the sample would be representative of well water conditions.

Surface water samples were taken using a 50 cc syringe and carefully collecting the surface water as not to disturb the bottom sediments. Surface water sampling locations were sampled from downstream to upstream to prevent any re-suspension of sediment impacting the downstream sampling locations. The pH, temperature, and conductivity of the surface water were obtained in the field at all surface water sampling points while minimizing disturbance of the bottom sediment.

All water samples were placed in bottles supplied and prepared by the laboratory. The samples were packed in coolers with ice and shipped by courier to the laboratory. All samples were analysed by Maxxam Analytics Inc. of Mississauga, ON, which is accredited by the *Canadian Association for Laboratory Accreditation Inc. (CALA)*

3.0 MONITORING RESULTS AND DISCUSSION

3.1 SITE HYDROGEOLOGY AND HYDROLOGY

Background information concerning the site geology and hydrogeology were described in detail in the Site Conceptual Model (SCM) report[1], and is summarized here. The SCM report describes the groundwater flow conditions at the Richmond Landfill. Based on the results from extensive studies conducted previously at the site, the basic hydrogeological framework for the facility has been defined as follows:

- the active groundwater flow zone at the site extends to a depth of approximately 30 metres below the top of bedrock;
- the shallow groundwater flow zone is conceptualized as the overburden, the overburden-bedrock contact and the upper one to two metres of bedrock;
- the direction of groundwater flow in the shallow flow zone is strongly influenced by topography;
- the intermediate bedrock flow zone extends from one to two metres below top of bedrock to a depth of approximately 30 metres below top of bedrock;
- groundwater flows through a well-connected network of fractures in the upper 30 metres of bedrock;
- the dominant fracture orientation is horizontal to sub-horizontal; however, vertical to subvertical fractures are present providing hydraulic connection between horizontal fractures;
- intermediate bedrock flownets show that groundwater generally flows to the west from the western edge of the landfill, to the south-southeast from the southern edge of the landfill, to the southwest from the southwest corner of the landfill and north to northwest from the northwest portion of the landfill;

[1] *Site Conceptual Model Report, WM Richmond Landfill*, prepared by Dr. B.H. Kueper and WESA Inc., October 2009

- the hydraulic conductivity of the intermediate bedrock is lower to the north and east of the landfill compared to other areas of the site, implying that the rate of groundwater flow is lower than in areas south, southeast and west of the landfill; and
- flow directions in the intermediate bedrock zone are variable with season.

3.2 LEACHATE RESULTS

The spring 2010 leachate chemistry results from the North and South Chambers are summarized in Table 4 (sampled May 4, 2010). Leachate at the Richmond Landfill is characterized by elevated concentrations of general water quality parameters such as alkalinity, ammonia, conductivity, DOC, hardness, toluene, and TKN, as well as selected VOCs for both the North and South Chamber samples. In general, the parameters that characterize the leachate are more elevated in the samples collected from the South Chamber compared to the North Chamber.

3.3 GROUNDWATER RESULTS

3.3.1 Groundwater Elevations

The groundwater flow directions were inferred by interpolating groundwater elevations from the hydraulically responsive wells screened within the corresponding groundwater flow zone, and are consistent with historical results. Groundwater elevations from program monitoring wells were measured on April 28, 2010 and October 25, 2010 and are presented in Tables 5a and 5b, respectively. The groundwater flownets for the shallow groundwater flow zone is shown on Figures 2a and 2b for the spring and fall events, respectively. Figures 3a and 3b present the groundwater flownets for the intermediate bedrock groundwater flow zone for the spring and fall events, respectively.

The 2010 shallow groundwater flownets are similar for spring and fall data and are consistent with historical results. The flownets show that the Empey Hill drumlin southwest from the landfill creates a flow divide with shallow groundwater being directed both to the north and the south. The northerly flowing groundwater flows toward Marysville Creek, while shallow groundwater to the south flows towards Beechwood Ditch. Shallow groundwater south of Beechwood Road flows locally to the north-northwest, towards an area of lower hydraulic head in the south part of the site. Shallow groundwater east of the landfill is influenced by a local zone of higher water levels in the vicinity of monitoring wells M96 and M70.

The 2010 intermediate bedrock zone flownets show that groundwater in the intermediate bedrock flow zone generally flows to the west from the western edge of the landfill, to the south-southeast from the southern edge of the landfill, and to the southwest from the southwest corner of the landfill. The hydraulic influence of Empey Hill is seen in the intermediate flow zone in that a relatively stagnant zone (weaker hydraulic gradients) is created to the west and southwest of the landfill. In the portion of the site to the south and southeast of the landfill, between the waste and Beechwood Road, groundwater flows to the south and southeast. In this area, groundwater elevations in the intermediate bedrock flow zone were higher in the spring (Figure 3a) than in the fall (Figure 3b) in a number of wells, resulting in a pronounced easterly component of groundwater flow in the fall compared to the spring. This seasonal variation in groundwater flow orientation south of the landfill is consistent with historical interpretations. Overall, the directions of groundwater flow within the intermediate flow zone are consistent with the regional directions of groundwater flow, towards the south.

The deep groundwater is saline and not suitable for potable use. There is limited hydraulic interaction between the intermediate and deep bedrock flow zones because of the differences in groundwater density related to salinity. Deep bedrock groundwater will generally flow to the south and will generally flow in a horizontal direction, although vertical components of flow may also exist. The bulk rock hydraulic conductivity is generally lower at depths greater than 30 m below the top of bedrock, and the fracture apertures are generally smaller. It follows that groundwater flow in the deep bedrock flow zone will be slower than in the shallow and intermediate flow zones.

3.3.2 Groundwater Chemistry Quality Assurance / Quality Control (QA/QC)

An evaluation of the QA/QC data (from duplicate and blank samples) was provided in the spring and fall semi-annual reports submitted to MOE for review in September and December, 2010. Analytical results were compared between regular samples and their corresponding field duplicate samples, submitted to the laboratory without identifying the location they were collected from. A standard margin of error of 20% (relative percent difference (RPD) between regular sample and duplicate) was deemed acceptable for field duplicates. In general, the comparison between samples and duplicates shows very good correlation for the majority of analyzed constituents. All parameters for groundwater duplicate QA/QC sampling were well within the 20% margin of error with few exceptions.

Spring 2010 Semi-Annual Monitoring Event

For the May, 2010 monitoring event, all parameters for groundwater duplicate QA/QC sampling were well within the 20% margin of error with the exception of total Kjeldahl nitrogen (4 of 8 duplicate samples), chemical oxygen demand (3 of 8), nitrate (2 of 8) and nitrite (2 of 8). Of these, all except one (nitrite at M10-2) were measured at low concentrations (less than 5 times the MDL) and are therefore within acceptable margin of error. All parameters were near or below the MDL in trip, equipment and field blanks.

Fall 2010 Semi-Annual Monitoring Event

For the October 2010 monitoring event, only eight individual results had an RPD greater than 20%; of these, all except three (calcium, dissolved organic carbon and hardness at M96) were measured at low concentrations (less than 5 times the MDL) and are therefore within acceptable margin of error. All parameters were near or below the MDL in equipment and field blanks.

3.3.3 Groundwater Sampling Results and Evaluation

Analytical results from the groundwater monitoring wells sampled in spring and fall 2010 are presented in Tables 6a and 6b, respectively. Note that because of the change in monitoring programs between the spring and fall 2010 sampling events (see Section 2.1 for details), the groundwater monitoring wells that were monitored are different between spring and fall. Groundwater quality data from the 2010 monitoring events are similar to historical results, and are discussed in this section.

Shallow Groundwater Flow Zone

Slightly elevated concentrations of a number of water quality parameters (e.g., alkalinity, chloride, conductivity, DOC, iron, manganese, phenols, sodium and/or TDS) were observed in some shallow groundwater zone monitoring wells located northwest and north of the unlined Phase 1 landfill footprint. The chemistry identified here suggests that the groundwater chemistry shows a dilute leachate signature. In other areas of the site, there is no evidence of groundwater impacts away from the landfill footprint in the shallow groundwater flow zone. Isolated occurrences of elevated concentrations of water quality parameters (i.e., one or two parameters per sample) are seen elsewhere on the Site, particularly on or immediately adjacent to the landfill footprint. No indication of elevated concentrations related to landfill impacts were identified at the property boundary in the shallow flow zone.

Intermediate Bedrock Groundwater Flow Zone

Analytical results from intermediate bedrock groundwater monitors sampled in May and October, 2010 show that groundwater quality in this zone is variable across the site. These findings are consistent with historical results. Intermediate bedrock zone groundwater and surface water chemistry conditions south of the landfill were reviewed in a technical memorandum previously submitted to the MOE[2] (dated June 14, 2010). This study investigated the apparently increasing concentrations of some parameters (e.g., alkalinity, ammonia, COD, iron, chloride, sodium, etc.) over time at selected monitoring wells installed in the intermediate bedrock flow

[2] *On-Site Groundwater and Surface Water Quality Assessment, Waste Management (WM) Richmond Landfill*, technical memorandum to Chris Prucha (WM), June 14, 2010.

zone south (M9-2, M9-3, M10-1, M49-1, M49-2 and M71) and north/northwest (M5-2 and M6-3) of the site. It was concluded that the groundwater chemistry changes seen at these monitoring wells are most likely related to surface water infiltration and off-site sources. Wells immediately south of the landfill, such as M9-2 and M9-3, may have historically shown effects from leachate; however, there are no indications that these concentrations have resulted in off-site impact. Further evaluation of the groundwater conditions south of the landfill, including the drilling of new monitoring wells, is currently underway and will be completed through 2011. The additional investigations will assist in refining the understanding of groundwater flow directions and groundwater chemistry in the area.

3.3.4 Results from Off-Site Domestic Water Supply Wells

Results from off-site private water supply wells sampled in fall 2010 as part of the EMP are presented in Table 7.

Comparison with Ontario Drinking Water Quality Objectives and Guidelines (ODWSOG, 2006) revealed all parameters were below their respective maximum acceptable concentrations (MAC) or interim maximum acceptable concentrations (IMAC) as specified in Table 2 of the ODWSOG. Some inorganic parameters (general chemistry and dissolved metals) were measured at concentrations exceeding their respective aesthetic objective (AO) or operational guideline (OG) from Table 4 of the ODWSOG.

As was the case in investigations conducted recently, most volatile organic compounds (VOCs) in off-site supply wells were reported below the laboratory reporting limit (RL) at all locations, with the exception of some VOCs that were detected in measurable quantities above the RL at some locations. In all cases, VOC concentrations were below the MAC or AO.

The moderate mineralization observed at the private water supply wells sampled (elevated alkalinity, hardness, TDS and sodium) is consistent with the local hydrogeological setting (carbonate aquifer with documented saline groundwater at depth). The origin of the elevated concentrations of some dissolved metals (iron, manganese) and DOC at some locations is unknown. The low levels of VOCs observed at some locations adjacent to 1252 Beechwood Road are likely attributable to the historical release of VOCs at this location (former abattoir).

3.4 SURFACE WATER RESULTS

The two water courses that receive surface water/storm water runoff from the Richmond Landfill Site are Marysville Creek to the north of the waste mound and Beechwood Ditch to the south (Figures 1a and 1b). Surface water monitoring locations were the same for the spring and fall, 2010 monitoring events and are shown on Figures 1a and 1b, respectively.

3.4.1 Surface Water Flow Rates

Visual observations of surface water flow and general water characteristics for the 2010 sampling program are summarized in Table 8a and 8b (spring and fall monitoring events, respectively). In May, 2010, surface water flow was too low to measure, while in October, 2010, surface water flow was very low (on the order of 1-2 cm/s) and at times also below the recording capabilities of the flow meter.

3.4.2 Surface Water Quality Assurance / Quality Control (QA/QC)

An evaluation of the QA/QC data (from duplicate samples) was provided in the spring and fall semi-annual reports submitted to MOE for review in September and December, 2010. Analytical results were compared between regular samples and their corresponding field duplicate samples, submitted to the laboratory without identifying the location they were collected from. A standard margin of error of 20% was deemed acceptable for field duplicates. In general, the comparison between samples and duplicates shows very good correlation for the majority of analyzed constituents.

All parameters for surface water duplicate QA/QC sampling were well within the 20% margin of error with the exception of colour, total phosphorus, total suspended solids and turbidity during the May, 2010 event, while all parameters for the surface water duplicate QA/QC sample (location S2) in October, 2010 were well within the 20% margin of error.

3.4.3 Surface Water Sampling Results and Data Evaluation

The results from the surface water locations sampled in spring and fall 2010 are presented and compared to the Provincial Water Quality Objectives (PWQO) in Tables 9a and 9b, respectively. Surface water quality data for the spring and fall 2010 monitoring events were similar to historical results and are discussed below.

Upstream surface water quality was monitored at station S2 for Marysville Creek, while background surface water quality for Beechwood Ditch was recorded from station S5 in fall only (background surface water quality for Beechwood Ditch could not be determined during the May, 2010 event since station S5 was dry at the time of sampling). Storm water runoff from the existing landfill area flows to one of three storm water sedimentation retention ponds, located to the northeast, northwest and south of the landfill footprint. The retention pond located south of the landfill was reconstructed in 2008 and now has an increased storage volume and, as a result, an increased retention time. A fourth pond receives runoff from the compost pad; however, there is no direct discharge from this pond to surface water.

Results from spring and fall 2010 are presented below and indicate that the landfill is not causing any adverse impacts to surface water quality.

Spring 2010 Semi-Annual Monitoring Event

All constituents analysed in surface water samples collected in May, 2010 were below their respective PWQO, with the exception of (a) iron at sampling location S3 which slightly exceeded the PWQO (0.33 mg/L vs. 0.3 mg/L); and (b) phosphorus which was detected at concentrations exceeding the PWQO of 0.03 mg/L at all locations sampled, including the upstream location S2 along Marysville Creek. An elevated phosphorus concentration was observed at location S8R (0.59 mg/L); note however this location was only sampled on one previous occasion (2009), therefore additional monitoring results are required in order to confirm the results.

Fall 2010 Semi-Annual Monitoring Event

All constituents analysed in surface water samples collected in October, 2010 were below their respective PWQO, with the exception of phosphorus which was detected at concentrations slightly exceeding the PWQO of 0.03 mg/L at Marysville Creek downstream location S3 (0.031 mg/L), Beechwood Ditch upstream location S5 (0.11 mg/L), and location S8R (0.032 mg/L) located in a drainage swale exiting the southwest portion of the site that feeds into Beechwood Ditch.

It should be noted that total phosphorus concentrations have historically been detected at concentrations frequently exceeding the PWQO at background locations (e.g., see 2009 Annual Monitoring Report), as well as downstream from the landfill site, and are not attributable to the landfill.

3.5 SUBSURFACE GAS SAMPLING

On May 5 and October 25, 2010, WESA inspected the subsurface gas monitoring probes and obtained measurements from the gas probes. Measurements were made using a RKI Eagle probe calibrated to methane gas response. The location and condition of the gas monitors and the measurement results are shown in Tables 10a and 10b for the spring and fall events, respectively. Readings were between 0 ppm and 40 ppm in the spring, and between 0 ppm and 130 ppm in the fall, well below the trigger level of 50% LEL (25,000 ppm) specified in the EMP dated June 29, 2010.

3.6 MONITORING WELL STATUS AND CONDITIONS

During the various monitoring events conducted throughout the year, the conditions of monitoring wells in the program were inspected. Any repairs, such as new locks, labels or well caps, etc. were made as necessary. At M58-4, the PVC standpipe has been damaged below ground surface; however, the steel protective casing around the standpipe remains in place, and is capped. Watertight casings and seals are in place at all other monitors to ensure that surface water or foreign materials do not infiltrate the wells. These monitoring wells comply with the applicable sections of Ontario Regulation 903 relevant to "test holes" as defined in the regulation, as well as the overall intent of the regulation to protect groundwater supplies. Of all of the monitoring wells included in the EMP only M58-4 is currently inactive; additional repairs and inspections are required to bring this monitor back into commission.

4.0 SUMMARY AND CONCLUSIONS

The 2010 annual monitoring program included recording groundwater elevations, collection of groundwater, surface water and leachate samples, and landfill gas monitoring, in accordance with the site groundwater monitoring requirements outlined in the Amendment to the C of A issued on March 31, 2010. The spring 2010 monitoring event was conducted as specified in the amended C of A, while the fall 2010 monitoring event was conducted in accordance with the revised EMP dated June 29, 2010.

Spring 2010 Semi-Annual Monitoring Event

- Water levels were measured on April 28, 2010 at all (182) monitoring wells specified in Schedule B of the Amended C of A.
- 70 groundwater monitors were sampled from 42 locations during the spring groundwater sampling event. A total of 22 Quality Assurance/Quality Control (QA/QC) samples were also collected (9 field duplicates, 3 field blanks, 8 trip blanks and 2 equipment blanks).
- Surface water samples were collected on May 3, 2010. Of the six surface water locations in the monitoring program, only four (4) were sampled (S4R and S5 were dry).
- Leachate samples were collected from the North Chamber (monthly from January to May, 2010) and South Chamber (April and May, 2010).
- Subsurface gas concentrations were recorded from five on-site gas monitoring wells.

Fall 2010 Semi-Annual Monitoring Event

- Water levels were measured from 65 groundwater monitoring wells (39 in the shallow groundwater flow zone and 22 in the intermediate bedrock flow zone).

- 39 groundwater monitors were sampled from 36 locations (17 completed in the shallow zone and 22 in the intermediate bedrock).
- Eight (8) off-site domestic water supply wells located along Beechwood Road were sampled.
- Four (4) surface water locations were sampled.
- A total of 10 Quality Assurance/Quality Control (QA/QC) samples were collected (6 field duplicates, 3 field blanks and 1 equipment blank).
- Subsurface gas concentrations were recorded from five on-site gas monitoring wells.

4.1 LEACHATE

- Leachate quality for samples collected from the North and South Chambers in spring 2010 was similar to historical values, and is characterized by elevated concentrations of general water quality parameters such as alkalinity, ammonia, conductivity, DOC, hardness, toluene, and TKN, as well as selected VOCs for both the North and South Chamber samples.
- The parameters that characterize the leachate from the North and South Chambers are similar but generally more elevated in the samples collected from the South Chamber.

4.2 GROUNDWATER

- Groundwater flow directions interpreted from monitors known to be hydraulically active were consistent with historical flownets:
  - Shallow groundwater flow is influenced by local topographic highs in the southwestern (Empey Hill Drumlin) and eastern (M96/M70 area) portions of the site, and is characterized by a flow divide with shallow groundwater being directed both to the north (toward Marysville Creek) and the south (toward Beechwood Ditch).
  - Groundwater in the intermediate bedrock flow zone generally flows to the west from the western edge of the landfill, to the south-southeast from the southern edge of the landfill, and to the southwest from the southwest corner of the landfill. Overall, the directions of groundwater flow within the intermediate flow zone are consistent with the regional directions of groundwater flow, towards the south.
- Groundwater quality data from fall 2010 are generally consistent with historical results.
- Slightly elevated concentrations of a number of water quality parameters were seen in the shallow groundwater zone northwest and north of the Phase 1 landfill footprint. In other areas of the site, no evidence was observed of groundwater impact away from the landfill footprint in the shallow groundwater flow zone.

- The geochemical results for the intermediate bedrock groundwater flow zone indicate higher concentrations of water quality parameters south of the landfill relative to the concentrations west and north of the landfill. The higher concentrations are downgradient from the landfill footprint and occur in monitoring wells that are known to be hydraulically connected to each other.
- The moderate mineralization observed at the off-site private water supply wells along Beechwood Road (elevated alkalinity, hardness, TDS and sodium) is consistent with the local hydrogeological setting (carbonate aquifer with documented saline groundwater at depth). The origin of the elevated concentration in some dissolved metals (iron, manganese) and DOC at some locations is unknown. The low levels of VOCs observed at some locations adjacent to 1252 Beechwood Road are likely attributable to the historical release of VOCs at this location (former abattoir).
- Continued groundwater monitoring within the shallow and intermediate bedrock groundwater flow zones between the landfill footprint and the low-head areas is warranted in order to further examine groundwater quality and any trends over time. Additional investigative work related to the observed groundwater chemistry is ongoing at this time.

4.3 SURFACE WATER

- The concentrations observed were within the range of historical monitoring results.
- Similar to historic surface water quality, concentrations of total phosphorous exceeded the PWQO objective during the fall 2010 sampling event at the upstream (S5) and downstream (S8R) locations in Beechwood Ditch, as well as downstream location in Marysville Creek.
- The results indicate that surface water runoff from the site is not affecting Marysville Creek or Beechwood Ditch.

4.4 SUBSURFACE GAS

- All measurements for methane gas were below the trigger level of 50% LEL, or 25,000 ppm.

5.0 LIMITING CONDITIONS

The 2010 monitoring program involved the collection of groundwater (from on-site monitoring wells and off-site domestic supply wells), surface water and sub-surface gas for analyses at the site monitoring locations. The data collected during this investigation represent the conditions at the sampled locations only.

The conclusions presented in this report represent our professional opinion, in light of the terms of reference, scope of work, and any limiting conditions noted herein.

Respectfully submitted,

François A. Richard, Ph.D, P.Geo.	David Harding, M.Sc. P.Eng.
Senior Hydrogeologist	Senior Consulting Engineer

LIST OF TABLES

Table 1a: Summary of Environmental Monitoring Program (Spring 2010)

Location	Leachate Collection Chamber	Shallow Monitoring Well	Intermediate Monitoring Well	Deep Monitoring Well	Parameter List*
North of Landfill		M35			A
		M39			A
			M5 (1/2/3)		A
			M6 (1/3)		A
			M6-2		A, E
			M45 (2/3)		A
			M46 (1/2)		A
			OW1		A
			OW4		A
			OW55 (d/i)		A
		OW55-s			A
			OW56 (d/i)		A
		OW56-s			A
		M103			A, B, E
		M104			A, B, E
	North Chamber				C
					D
Location	**Leachate Monitor**	**Shallow Monitoring Well**	**Intermediate Monitoring Well**	**Deep Monitoring Well**	**Parameter List**
East of Landfill		M19			A
		M23			A
		M47-3	M47 (1/2)		A
			M50 (1/2)		A, B, E
			M50-3		A
			M51 (1/2)		A, B, E
			M51-3		A
			M52 (1/2)		A, B, E
			M52-3		A
		M96			A, B, E
Location	**Leachate Monitor**	**Shallow Monitoring Well**	**Intermediate Monitoring Well**	**Deep Monitoring Well**	**Parameter List**
South of Landfill		M12			A
		M14			A
		M53-4	M53 (2/3)		A
			M9 (2/3)		A
			M9R-1		A, E
			M10 (1/2/3)		A
				M43-3	A
			M49 (1/3)		A
			M49-2		A, B, E
		M97			A, B, E
			OW54 (d/i)		A, B, E
		OW54-s			A
		OW57			A
			2054 (Open BH)		A, B, E
			2055		A, B, E
	South Chamber				C
					D
Location	**Leachate Monitor**	**Shallow Monitoring Well**	**Intermediate Monitoring Well**	**Deep Monitoring Well**	**Parameter List**
West of Landfill		M28			A
		M29			A
			M42-3		A
		M58-4	M58 (2/3)		A
			M3A (1/2/3)		A
			M4 (1/3)		A
			M4-2		A, E
			M48 (2/3)		A
		M98			A, B, E
		M99-2	M99-1		A, B, E
		M100			A, B, E
		M101			A, B, E
		M102			A, B, E

Location	Surface Water Station Upstream from Landfill	Surface Water Station Downstream from Landfill		Parameter List
Marysville Creek	S2	S3	S7	SW
Beechwood Ditch	S5	S4R	S8R**	SW

* Refer to Table 2a for Parameter Lists (Spring 2010)

** Location S8R is located in a drainage swale exiting the southwest portion of the site that feeds into Beechwood Ditch

Table 1b: Summary of Environmental Monitoring Program (Fall 2010)

Monitoring Locations		Parameter Suite **
Shallow Groundwater Flow Zone Monitors		
M12, M14, M15, M16, M18, M19, M23, M27, M28, M29, M30, M31, M35, M38, M39, M41, M47-3, M53-4, M54-4, M58-4, M60-4, M66-2, M67-2, M68-4, M70-3, M77, M80-2, M81, M87-2, M88-2, M89-2, M96, M97, M98, M99-2, M100, M101, M102, M103, OW37-s, OW57		Groundwater Elevations
M29, M39, M41, M53-4, M54-4, M58-4, M66-2, M67-2, M68-4, M70-3, M80-2, M81, M87-2, M96, M97, M99-2, M101, M102, M103, OW37-s		Groundwater Inorganic & General
Intermediate Bedrock Groundwater Flow Zone Monitors		
M3A-3, M9-3, M10-1, M49-1, M50-3, M56-2, M57, M58-3, M59-2, M59-3, M59-4, M60-1, M63-2, M64-2, M70-1, M71, M72, M73, M74, M80-1, M82-1, M82-2, M91-1, M95-1, M105*, M106*, OW54-i, OW54-d		Groundwater Elevations
M5-3, M6-3, M9-3, M10-1, M49-1, M56-2, M57, M58-3, M59-2, M59-3, M59-4, M70-1, M71, M72, M74, M75, M80-1, M82-1, M82-2, M91-1, M95-1, M105*, M106*, OW54-d		Groundwater Inorganic & General
Surface Water Sampling Locations		
Beechwood Ditch	S5, S4R and S8R	Surface Water Inorganic and General
Marysville Creek	S2 and S3	Surface Water Inorganic and General
Landfill Gas Monitoring Wells		
GM1, GM2, GM3, GM4-1, GM4-2, GM5, GM6		% methane by volume
Off-site Domestic Water Supply Wells		
1097 Beechwood Road	1206 Beechwood Road	Groundwater Inorganic & General, VOCs
1121 Beechwood Road	1250 Beechwood Road	
1144 Beechwood Road	1252 Beechwood Road	
1181 Beechwood Road	1264 Beechwood Road	

* M105 and M106: new monitors (unavailable at the time of fall 2010 semi-annual sampling event)

** Refer to Table 2b for Parameter Suites (Fall 2010)

Table 2a: Analytical Parameters for Groundwater and Leachate Samples (Spring 2010)

Parameter List	General Chemistry	Major Ions	Metals	Nutrients	Volatile Organic Compounds (VOCs)	Polycyclic Aromatic Hydrocarbons (PAHs)	Other
List A	pH	Alkalinity	Aluminum	Nitrate	Benzene		Mercury
	Conductivity	Chloride	Cadmium	Nitrite	Toluene		Phenols
	Hardness	Sodium	Chromium	TOC	Ethylbenzene		
	Ion Balance	Sulphate	Copper	COD	Xylenes		
		Calcium	Iron	BOD			
		Magnesium	Silver	Ammonia			
		Potassium		TKN			
List B					1,1-Dichloroethylene	Naphthalene	
					1,1-Dichloroethane	Acenaphthylene	
					1,1,1-Trichloroethane	Acenaphthene	
					Tetrachloroethylene	Fluorene	
					1,4-Dichlorobenzene	Anthracene	
						Phenanthrene	
						Fluoranthene	
						Pyrene	
						Benzo[a]anthracene	
						Chrysene	
						Benzo[b]fluoranthene	
						Benzo[k]fluoranthene	
						Benzo[a]pyrene	
						Indeno[1,2,3,cd]pyrene	
						Dibenzo[a,h]anthracene	
						Benzo[g,h,i]perylene	
List C	pH	Alkalinity	Arsenic	Ammonia	Benzene	Naphthalene	Mercury
	Hardness		Cadmium	DOC	Toluene	Acenaphthylene	Phenols
			Cobalt	Nitrate	Ethylbenzene	Acenaphthene	Purgeable Hydrocarbons
			Chromium	Nitrite	Xylenes	Fluorene	
			Copper	TKN	*List E*	Anthracene	
			Molybdenum			Phenanthrene	
			Nickel			Fluoranthene	
			Lead			Pyrene	
			Selenium			Benzo[a]anthracene	
			Zinc			Chrysene	
						Benzo[b]fluoranthene	
						Benzo[k]fluoranthene	
						Benzo[a]pyrene	
						Indeno[1,2,3,cd]pyrene	
						Dibenzo[a,h]anthracene	
						Benzo[g,h,i]perylene	
List D	Conductivity	Calcium	Silver	BOD			Total Trihalomethanes
		Sodium	Aluminum				
		Magnesium	Boron				
		Total Phosphorus	Barium				
		Hydrogen Sulfide	Beryllium				
		Sulphate	Manganese				
			Iron				
List E (USEPA 624)					Acetone		
					Benzene		
					Bromodichloromethane		
					Bromoform		
					Bromomethane		
					Carbon Tetrachloride		
					Chlorobenzene		
					Chloroform		
					Dibromochloromethane		
					1,2-Dichlorobenzene		
					1,3-Dichlorobenzene		
					1,4-Dichlorobenzene		
					1,1-Dichloroethane		
					1,2-Dichloroethane		
					1,1-Dichloroethylene		
					cis-1,2-Dichloroethylene		
					trans-1,2-Dichloroethylene		
					1,2-Dichloropropane		
					cis-1,3-Dichloropropene		
					trans-1,3-Dichloropropene		
					Ethylbenzene		
					Ethylene Dibromide		
					Methylene Chloride		
					Methyl Isobutyl Ketone		
					Methyl Ethyl Ketone		
					Methyl t-butyl ether (MTBE)		
					Styrene		
					1,1,1,2-Tetrachloroethane		
					1,1,2,2-Tetrachloroethane		
					Tetrachloroethylene		
					Toluene		
					1,1,1-Trichloroethane		
					1,1,2-Trichloroethane		
					Trichloroethylene		
					Vinyl Chloride		
					p+m-Xylene		
					o-Xylene		
					Xylene (Total)		
List SW (Surface Water)	pH	Alkalinity	Arsenic	Total Ammonia	Benzene		Cyanide
	Conductivity	Chloride	Barium	Nitrate	Toluene		Mercury
	Ion Balance	Sodium	Boron	Nitrite	Ethylbenzene		Phenols
		Sulphate	Cadmium	TKN	Xylenes		Turbidity
		Potassium	Chromium	Total Phosphorus			Colour
			Cobalt				Temperature
			Copper	BOD			TSS
			Iron	COD			TDS
			Lead	Un-iodized Ammonia			
			Zinc				

Table 2b. Analytical Parameters for Water and Leachate Samples (Fall 2010)

Groundwater Inorganic and General Parameters		
Alkalinity	Conductivity	Nitrite
Ammonia (total)	Copper	pH
Arsenic	Dissolved organic carbon	Phenols
Barium	Hardness	Phosphorus (total)
Biological oxygen demand	Iron	Potassium
Boron	Lead	Sodium
Cadmium	Magnesium	Sulphate
Calcium	Manganese	Total dissolved solids
Chemical oxygen demand	Mercury	Total Kjeldahl Nitrogen
Chloride	Naphthalene	Zinc
Chromium (total)	Nitrate	
Surface Water Inorganic and General Parameters		
Alkalinity	Cyanide (free)	Total dissolved solids
Ammonia (total)	Hardness	Total kjeldahl nitrogen
Arsenic	Iron	Total phosphorus
Barium	Lead	Total suspended solids
Biological oxygen demand	Magnesium	Zinc
Boron	Mercury	
Cadmium	Naphthalene	
Calcium	Nitrate	*Field measured:*
Chemical oxygen demand	Nitrite	conductivity
Chloride	Phenols	dissolved oxygen
Chromium (total)	Potassium	estimated flow rate
Conductivity	Sodium	pH
Copper	Sulphate	temperature
Volatile Organic Compounds (VOCs)		
1,1,1,2-Tetrachloroethane	Benzene	m&p-Xylene
1,1,1-Trichloroethane	Bromodichloromethane	o-Xylene
1,1,2,2-Tetrachloroethane	Bromoform	Styrene
1,1,2-Trichloroethane	Bromomethane	Toluene
1,1-Dichloroethane	Carbon tetrachloride	Trans-1,2-Dichloroethylene
1,1-Dichloroethylene	Chlorobenzene	Trans-1,3-Dichloropropylene
1,2-Dibromoethane	Chloroethane	Tetrachloroethylene
1,2-Dichlorobenzene	Chloroform	Trichloroethylene
1,2-Dichloroethane	Chloromethane	Trichlorofluoromethane
1,2-Dichloropropane	Cis-1,2-Dichloroethylene	Vinyl chloride
1,3,5-Trimethylbenzene	Cis-1,3-Dichloropropylene	
1,3-Dichlorobenzene	Dichloromethane (methylene chloride)	
1,4-Dichlorobenzene	Ethylbenzene	

Table 3a: Groundwater Elevation Monitoring Locations (Spring 2010)

Monitoring Well	Monitoring Well	Monitoring Well	Monitoring Well
2054	M48-1	M61-1	M84
2055	M48-2	M61-2	M85
M100	M48-3	M61-3	M86
M101	M49-1	M61-4	M87-1
M10-1	M49-2	M6-2	M87-2
M102	M49-3	M62-1	M88-1
M10-2	M50-1	M62-2	M88-2
M103	M50-2	M62-3	M89-1
M10-3	M50-3	M62-4	M89-2
M104	M5-1	M6-3	M90-1
M12	M51-1	M63-1	M90-2
M14	M51-2	M63-2	M9-1
M15	M51-3	M64-1	M91-1
M16	M5-2	M64-2	M91-2
M18	M52-1	M65-1	M9-2
M19	M52-2	M65-2	M93
M23	M52-3	M66-1	M9-3
M27	M5-3	M66-2	M94-1
M28	M53-1	M67-1	M94-2
M29	M53-2	M67-2	M95-1
M30	M53-3	M68-1	M95-2
M31	M53-4	M68-2	M96
M35	M54-1	M68-3	M97
M38	M54-2	M68-4	M98
M39	M54-3	M69-1	M99-2
M3A-1	M54-4	M69-2	M9R-1
M3A-2	M55-1	M69-3	OW1
M3A-3	M55-2	M69-4	OW36
M41	M55-3	M70-1	OW37-d
M4-1	M55-4	M70-2	OW37-s
M4-2	M56-1	M70-3	OW4
M42-1	M56-2	M71	OW5
M42-2	M57	M72	OW54-d
M42-3	M58-1	M73	OW54-i
M4-3	M58-2	M74	OW54-s
M43-1	M58-3	M75	OW55-d
M43-2	M58-4	M76	OW55-i
M43-3	M59-1	M77	OW55-s
M45-1	M59-2	M78	OW56-d
M45-2	M59-3	M79	OW56-i
M45-3	M59-4	M80-1	OW56-s
M46-1	M60-1	M80-2	OW57
M46-2	M60-2	M81	PW1
M47-1	M60-3	M82-1	PW2
M47-2	M60-4	M82-2	
M47-3	M6-1	M83	

Table 3b. Groundwater Elevation Monitoring Locations (Fall 2010)

Location	Shallow Groundwater Flow Zone	Intermediate Groundwater Flow Zone
West of landfill footprint	M27, M28, M29, M30, M31, M38, M58-4, M67-2, M87-2, M88-2, M89-2, M97, M98, M99-2, M100, M101, M102, OW37-s	M3A-3, M56-2, M58-3, M59-2, M59-3, M59-4, M72, M73, M74, M82-1, M82-2, M91-1, M95-1
North of landfill footprint	M35, M39, M60-4, M66-2, M103	M60-1
South of landfill footprint	M12, M14, M15, M16, M18, M41, M53-4, M54-4, M80-2, M81, OW57	M9-3, M10-1, M49-1, M57, M63-2, M64-2, M71, M80-1, OW54-i, OW54-d, M105*, M106*
East of landfill footprint	M19, M23, M47-3, M68-4, M70-3, M77, M96	M50-3, M70-1

** M105 and M106: new monitors (unavailable at the time of fall 2010 semi-annual sampling event)*

Table 4: Leachate Chemistry Results (Spring 2010)

Constituent	Units	North Chamber	South Chamber
		4-May-10	4-May-10
1,1,1,2-Tetrachloroethane	mg/L	< 0.001	< 0.001
1,1,1-Trichloroethane	mg/L	< 0.001	< 0.001
1,1,2,2-Tetrachloroethane	mg/L	< 0.002	< 0.002
1,1,2-Trichloroethane	mg/L	< 0.002	< 0.002
1,1-Dichloroethane	mg/L	0.002	0.001
1,1-Dichloroethylene	mg/L	< 0.001	< 0.001
1,2-Dibromoethane	mg/L	< 0.002	< 0.002
1,2-Dichlorobenzene (o)	mg/L	< 0.002	< 0.002
1,2-Dichloroethane	mg/L	< 0.002	< 0.002
1,2-Dichloropropane	mg/L	< 0.001	< 0.001
1,3-Dichlorobenzene (m)	mg/L	< 0.002	< 0.002
1,4-Dichlorobenzene (p)	mg/L	0.009	0.011
Acenaphthene	mg/L	0.00071	0.0094
Acenaphthylene	mg/L	< 0.00005	< 0.0005
Acetone	mg/L	0.2	0.55
Alkalinity	mg/L	5470	7930
Aluminum	mg/L	0.28	0.4
Ammonia	mg/L	861	1560
Anthracene	mg/L	0.00021	0.0051
Arsenic	mg/L	0.02	0.052
Barium	mg/L	0.35	0.32
Benzene	mg/L	< 0.001	0.006
Benzo(a)anthracene	mg/L	0.00006	0.001
Benzo(a)pyrene	mg/L	0.00002	0.0003
Benzo(b)fluoranthene	mg/L	< 0.00005	< 0.0005
Benzo(g,h,i)perylene	mg/L	< 0.0001	< 0.001
Benzo(k)fluoranthene	mg/L	< 0.00005	< 0.0005
Beryllium	mg/L	< 0.006	< 0.006
Biochemical Oxygen Demand	mg/L	210	400
Boron	mg/L	7.8	12
Bromodichloromethane	mg/L	< 0.001	< 0.001
Bromoform	mg/L	< 0.002	< 0.002
Bromomethane	mg/L	< 0.005	< 0.005
Cadmium	mg/L	0.0002	< 0.001
Calcium	mg/L	160	51
Carbon Tetrachloride	mg/L	< 0.001	< 0.001
Chloride	mg/L	1700	2600
Chlorobenzene	mg/L	< 0.001	< 0.001
Chlorodibromomethane	mg/L	< 0.002	< 0.002
Chloroform	mg/L	< 0.001	< 0.001
Chromium	mg/L	0.14	0.29
Chrysene	mg/L	< 0.00005	0.0008
Cis-1,2-Dichloroethylene	mg/L	< 0.001	< 0.001
Cis-1,3-Dichloropropylene	mg/L	< 0.002	< 0.002
Cobalt	mg/L	0.043	0.071
Conductivity	µS/cm	14900	22600
Copper	mg/L	0.004	< 0.02
Dibenzo(a,h)anthracene	mg/L	< 0.0001	< 0.001
Dichloromethane	mg/L	< 0.005	< 0.005
Dissolved Organic Carbon	mg/L	481	895
Ethylbenzene	mg/L	< 0.001	< 0.001
Fluoranthene	mg/L	0.00023	0.0066
Fluorene	mg/L	0.00063	0.01
Hardness	mg/L	1000	690
Indeno(1,2,3-cd)pyrene	mg/L	< 0.0001	< 0.001

Table 4: Leachate Chemistry Results (Spring 2010)

Constituent	Units	North Chamber	South Chamber
		4-May-10	4-May-10
Iron	mg/L	12	4.6
Lead	mg/L	0.0056	< 0.005
m+p-Xylene	mg/L	0.055	0.045
Magnesium	mg/L	160	130
Manganese	mg/L	0.55	0.17
Mercury	mg/L	< 0.0002	< 0.0002
Methyl Ethyl Ketone	mg/L	0.19	0.29
Methyl Isobutyl Ketone	mg/L	< 0.05	< 0.05
Methyl Tert Butyl Ether	mg/L	0.002	0.003
Molybdenum	mg/L	0.008	< 0.02
Naphthalene	mg/L	0.0059	0.028
Nickel	mg/L	0.19	0.36
Nitrate	mg/L	< 1	< 1
Nitrite	mg/L	0.1	0.1
o-Xylene	mg/L	0.011	0.038
pH (Lab)	unitless	7.6	7.8
Phenanthrene	mg/L	0.00085	0.024
Phenols	mg/L	0.153	0.53
Phosphorus (total)	mg/L	6.6	14
Potassium	mg/L	460	610
Pyrene	mg/L	0.0002	0.0043
Selenium	mg/L	< 0.005	< 0.05
Silver	mg/L	< 0.001	< 0.001
Sodium	mg/L	1600	2300
Styrene	mg/L	< 0.002	< 0.002
Sulphate	mg/L	5	64
Sulphide	mg/L	0.29	10
Tetrachloroethylene	mg/L	< 0.001	< 0.001
Toluene	mg/L	< 0.002	0.014
Total Kjeldahl Nitrogen	mg/L	960	1800
Total Trihalomethanes	mg/L	< 0.002	< 0.002
Total Xylenes	mg/L	0.066	0.083
TPH (F1 C6-C10 - BTEX)	mg/L	< 0.1	< 0.1
TPH (F1 C6-C10)	mg/L	0.24	0.24
Trans-1,2-dichloroethylene	mg/L	< 0.001	< 0.001
Trans-1,3-dichloropropene	mg/L	< 0.002	< 0.002
Trichloroethylene	mg/L	< 0.001	< 0.001
Vinyl Chloride	mg/L	< 0.002	< 0.002
Zinc	mg/L	0.064	< 0.1

Table 5a: Groundwater Elevations (April 28, 2010)

Monitoring Well	Water Level (masl)	Monitoring Well	Water Level (masl)	Monitoring Well	Water Level (masl)	Monitoring Well	Water Level (masl)
2054	124.66	M48-1	122.61	M61-1	124.47	M84	121.89
2055	122.02	M48-2	122.85	M61-2	107.27	M85	122.80
M100	125.02	M48-3	122.85	M61-3	124.71	M86	123.13
M101	124.19	M49-1	121.74	M61-4	125.61	M87-1	125.43
M10-1	121.82	M49-2	122.53	M6-2	109.93	M87-2	124.18
M102	124.07	M49-3	119.58	M62-1	126.20	M88-1	125.90
M10-2	122.27	M50-1	123.48	M62-2	126.35	M88-2	128.23
M103	123.67	M50-2	123.61	M62-3	125.73	M89-1	112.02
M10-3	122.08	M50-3	124.49	M62-4	126.02	M89-2	129.26
M104	123.32	M5-1	120.61	M6-3	123.47	M90-1	124.65
M12	125.32	M51-1	109.13	M63-1	121.80	M90-2	125.68
M14	126.51	M51-2	124.88	M63-2	121.13	M9-1	125.49
M15	124.75	M51-3	125.48	M64-1	113.34	M91-1	122.97
M16	124.09	M5-2	122.94	M64-2	118.88	M91-2	123.81
M18	127.10	M52-1	115.57	M65-1	122.26	M9-2	122.16
M19	128.32	M52-2	122.77	M65-2	123.07	M93	124.72
M23	127.16	M52-3	124.41	M66-1	121.78	M9-3	122.47
M27	126.14	M5-3	122.76	M66-2	123.08	M94-1	124.08
M28	125.98	M53-1	121.87	M67-1	122.67	M94-2	123.60
M29	123.42	M53-2	121.71	M67-2	122.70	M95-1	122.83
M30	124.20	M53-3	122.47	M68-1	124.46	M95-2	123.23
M31	124.37	M53-4	124.74	M68-2	124.38	M96	128.78
M35	124.08	M54-1	123.88	M68-3	124.14	M97	125.27
M38	125.01	M54-2	124.05	M68-4	124.07	M98	129.75
M39	123.64	M54-3	124.12	M69-1	125.17	M99-2	130.04
M3A-1	118.86	M54-4	124.06	M69-2	125.62	M9R-1	119.57
M3A-2	101.98	M55-1	125.12	M69-3	125.62	OW1	122.83
M3A-3	124.95	M55-2	122.34	M69-4	125.41	OW36	122.71
M41	125.02	M55-3	113.51	M70-1	121.21	OW37-d	123.02
M4-1	95.68	M55-4	121.28	M70-2	122.46	OW37-s	122.07
M4-2	102.45	M56-1	108.84	M70-3	127.17	OW4	123.61
M42-1	75.59	M56-2	122.95	M71	122.12	OW5	123.76
M42-2	120.52	M57	122.78	M72	122.76	OW54-d	121.85
M42-3	123.04	M58-1	122.88	M73	122.82	OW54-i	121.88
M4-3	123.24	M58-2	103.93	M74	123.78	OW54-s	124.12
M43-1	121.20	M58-3	122.97	M75	123.09	OW55-d	122.23
M43-2	120.35	M58-4	124.70	M76	124.43	OW55-i	122.87
M43-3	121.71	M59-1	124.38	M77	126.04	OW55-s	122.85
M45-1	118.07	M59-2	122.98	M78	124.35	OW56-d	123.04
M45-2	118.01	M59-3	122.95	M79	125.53	OW56-i	123.04
M45-3	120.68	M59-4	122.95	M80-1	123.01	OW56-s	122.33
M46-1	108.96	M60-1	122.94	M80-2	123.30	OW57	129.54
M46-2	123.07	M60-2	123.74	M81	124.23	PW1	121.82
M47-1	123.88	M60-3	124.33	M82-1	122.86	PW2	123.18
M47-2	124.36	M60-4	124.23	M82-2	122.75		
M47-3	124.69	M6-1	109.05	M83	123.28		

Table 5b: Groundwater Elevations (October 25, 2010)

Monitoring Well	Water Level (masl)	Monitoring Well	Water Level (masl)	Monitoring Well	Water Level (masl)	Monitoring Well	Water Level (masl)
Shallow Groundwater Flow Zone							
M12	125.10	M31	DRY	M67-2	122.38	M98	129.67
M14	125.82	M35	124.18	M68-4	124.18	M99-2	129.56
M15	DRY	M38	124.67	M70-3	127.25	M100	124.61
M16	124.11	M39	123.02	M77	124.48	M101	124.14
M18	126.49	M41	125.30	M80-2	123.46	M102	124.06
M19	126.59	M47-3	124.52	M81	124.33	M103	122.76
M23	125.56	M53-4	124.75	M87-2	123.26	OW37-s	122.15
M27	126.08	M54-4	124.08	M88-2	127.03	OW57	129.33
M28	126.53	M58-4	123.89	M89-2	128.92		
M29	122.98	M60-4	124.32	M96	127.53		
M30	124.17	M66-2	123.25	M97	123.88		
Intermediate Bedrock Groundwater Flow Zone							
M3A-3	124.72	M58-3	123.11	M70-1	119.95	M82-2	122.93
M9-3	120.57	M59-2	123.14	M71	120.51	M91-1	123.06
M10-1	120.39	M59-3	123.13	M72	122.92	M95-1	122.98
M49-1	120.11	M59-4	123.13	M73	122.98	OW54-d	119.98
M50-3	124.39	M60-1	122.36	M74	123.73	OW54-i	119.98
M56-2	123.10	M63-2	121.22	M80-1	123.15		
M57	120.29	M64-2	118.55	M82-1	122.86		

Table 6a: Groundwater Quality Results (May 3-6, 2010)

Name	1,1,1,2-Tetrachloroethane mg/L	1,1,1-Trichloroethane mg/L	1,1,2,2-Tetrachloroethane mg/L	1,1,2-Trichloroethane mg/L	1,1-Dichloroethane mg/L	1,1-Dichloroethylene mg/L	1,2-Dibromoethane mg/L	1,2-Dichlorobenzene (o) mg/L	1,2-Dichloroethane mg/L	1,2-Dichloropropane mg/L	1,3-Dichlorobenzene (m) mg/L	1,4-Dichlorobenzene (p) mg/L	Acenaphthene mg/L	Acenaphthylene mg/L	Acetone mg/L	Alkalinity mg/L	Aluminum mg/L	Ammonia mg/L	Anthracene mg/L	Benzene mg/L	Benzo(a)anthracene mg/L	Benzo(a)pyrene mg/L	Benzo(b)fluoranthene mg/L	Benzo(g,h,i)perylene mg/L	Benzo(k)fluoranthene mg/L	Biochemical Oxygen Demand mg/L	Bromodichloromethane mg/L
2054	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.00005	< 0.00005	< 0.01	178	< 0.02	2.24	< 0.00005	0.0003	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	5	< 0.0001
2055	< 0.001	< 0.001	< 0.002	< 0.002	0.002	< 0.001	< 0.002	< 0.002	< 0.003	< 0.001	< 0.002	< 0.002	< 0.00005	< 0.00005	< 0.1	121	< 0.8	22	0.00005	0.061	0.00014	0.0001	0.00012	< 0.0001	< 0.00005	3	< 0.001
M3A-1																300	< 0.02	0.5		0.0003						3	
M3A-3																196	0.029	0.49		0.0003						4	
M4-3																339	< 0.02	0.59		0.0009						10	
M5-1																404	< 0.02	0.73		0.0039						4	
M5-2																405	< 0.02	0.99		0.039						120	
M5-3																432	< 0.02	1.14		< 0.0001						23	
M6-1																191	< 0.2	15.5		0.11						8	
M6-2	< 0.005	< 0.005	< 0.01	< 0.01	< 0.005	< 0.005	< 0.01	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01			< 0.5	67	< 0.2	17.1		0.31						26	< 0.005
M6-3																1950	0.049	8.16		0.002						13	
M9-2																630	< 0.02	0.64		< 0.0001						3	
M9-3																255	< 0.02	1		0.0005						3	
M9R-1	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	< 0.003	< 0.005	< 0.005	< 0.007	< 0.003	< 0.005	< 0.005			< 0.3	211	< 0.8	15		0.12						5	< 0.003
M10-1																422	< 0.02	0.49		0.0003						< 2	
M10-2																402	< 0.02	1.06		0.0002						< 2	
M10-3																321	< 0.02	1.1		< 0.0001						3	
M12																259	< 0.02	< 0.15		< 0.0001						< 2	
M14																303	< 0.02	< 0.15		< 0.0001						< 2	
M19																311	< 0.02	< 0.15		< 0.0001						< 2	
M28																260	< 0.02	< 0.15		< 0.0001						< 2	
M35																503	< 0.02	< 0.15		< 0.0001						< 2	
M39																562	< 0.02	< 0.15		< 0.0001						< 2	
M42-3																153	0.063	3.74		0.001						29	
M43-3																520	< 0.2	1.33		0.0003						5	
M45-2																28	< 2	30.2		0.024						< 2	
M45-3																42	< 0.02	30.9		0.11						< 2	
M46-2																484	< 0.02	0.94		< 0.0001						8	
M47-1																283	< 0.2	3.29		0.031						23	
M47-2																489	< 0.02	1.58		0.0004						7	
M47-3																188	< 0.02	< 0.15		< 0.0001						< 2	
M48-2																281	< 0.02	0.41		0.0013						6	
M48-3																195	< 0.02	0.45		0.0015						< 2	
M49-1																368	0.031	0.55		< 0.0001						< 2	
M49-2	< 0.0005	< 0.0005	< 0.001	< 0.001	< 0.0005	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.0005	< 0.001	< 0.001	< 0.00005	< 0.00005	< 0.05	643	< 0.02	1.22	< 0.00005	0.0008	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	40	< 0.0005

Table 6a: Groundwater Quality Results (May 3-6, 2010)

Name	1,1,1,2-Tetrachloroethane mg/L	1,1,1-Trichloroethane mg/L	1,1,2,2-Tetrachloroethane mg/L	1,1,2-Trichloroethane mg/L	1,1-Dichloroethane mg/L	1,1-Dichloroethylene mg/L	1,2-Dibromoethane mg/L	1,2-Dichlorobenzene (o) mg/L	1,2-Dichloroethane mg/L	1,2-Dichloropropane mg/L	1,3-Dichlorobenzene (m) mg/L	1,4-Dichlorobenzene (p) mg/L	Acenaphthene mg/L	Acenaphthylene mg/L	Acetone mg/L	Alkalinity mg/L	Aluminum mg/L	Ammonia mg/L	Anthracene mg/L	Benzene mg/L	Benzo(a)anthracene mg/L	Benzo(a)pyrene mg/L	Benzo(b)fluoranthene mg/L	Benzo(g,h,i)perylene mg/L	Benzo(k)fluoranthene mg/L	Biochemical Oxygen Demand mg/L	Bromodichloromethane mg/L
M49-3																467	< 0.02	< 0.15		< 0.0001						< 2	
M50-1	< 0.005	< 0.005	< 0.01	< 0.01	< 0.005	< 0.005	< 0.01	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	< 0.00005	< 0.00005	< 0.5	326	< 0.2	9.15	< 0.00005	0.29	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	< 2	< 0.005
M50-3																228	< 0.2	9.46		0.0005						28	
M51-1	< 0.003	< 0.003	< 0.005	< 0.005	< 0.003	< 0.003	< 0.005	< 0.005	< 0.006	< 0.003	< 0.005	< 0.005	< 0.00005	< 0.00005	< 0.3	44	< 2	31.3	< 0.00005	0.13	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	5	< 0.003
M51-2	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.00005	< 0.00005	< 0.02	473	< 0.02	0.93	< 0.00005	0.0002	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	18	< 0.0001
M51-3																512	< 0.02	0.67		0.0001						3	
M52-1	< 0.0002	< 0.0002	< 0.0004	< 0.0004	< 0.0002	< 0.0002	< 0.0004	< 0.0004	< 0.0007	< 0.0002	< 0.0004	< 0.0004	< 0.00005	< 0.00005	< 0.1	413	< 0.02	1.03	< 0.00005	0.015	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	23	< 0.0002
M52-2	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.00005	< 0.00005	< 0.01	376	< 0.02	1.14	< 0.00005	0.0001	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	15	< 0.0001
M52-3																589	< 0.02	1.19		0.009						3	
M53-2																377	< 0.02	0.48		< 0.0001						< 2	
M53-3																402	< 0.02	0.9		< 0.0001						< 2	
M53-4																318	< 0.02	< 0.15		< 0.0001						< 2	
M58-2																457	< 0.02	0.43		< 0.0001						2	
M58-3																271	< 0.02	< 0.15		< 0.0001						< 2	
M96	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.00005	< 0.00005	< 0.01	315	< 0.02	< 0.15	< 0.00005	< 0.0001	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	< 2	< 0.0001
M97	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.00005	< 0.00005	< 0.01	207	< 0.02	< 0.15	< 0.00005	< 0.0001	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	< 2	< 0.0001
M98	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.00005	< 0.00005	< 0.01	379	< 0.02	< 0.15	< 0.00005	< 0.0001	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	< 2	< 0.0001
M99-2	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.00005	< 0.00005	< 0.01	259	< 0.02	0.21	< 0.00005	< 0.0001	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	< 2	< 0.0001
M100	< 0.0001	< 0.0001	< 0.0002	< 0.0002	0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.00005	< 0.00005	< 0.01	369	< 0.02	< 0.15	< 0.00005	< 0.0001	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	< 2	< 0.0001
M101	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.00005	< 0.00005	< 0.02	345	< 0.02	0.15	< 0.00005	< 0.0001	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	< 2	< 0.0001
M102	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.00005	< 0.00005	< 0.01	481	< 0.02	< 0.15	< 0.00005	< 0.0001	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	< 2	< 0.0001
M103	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.00005	< 0.00005	< 0.02	828	< 0.02	0.31	< 0.00005	< 0.0001	< 0.00005	< 0.00005	< 0.00005	< 0.0001	< 0.00005	< 2	< 0.0001
M104	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.00005	< 0.00005	< 0.04	1380	< 0.08	0.9	< 0.00005	0.0003	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	3	< 0.0001
OW1																393	< 0.02	1.19		< 0.0002						16	
OW4																998	< 0.02	1.1		0.0008						8	
OW54-d	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.00005	< 0.00005	< 0.01	259	< 0.02	0.99	< 0.00005	< 0.0001	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	< 2	< 0.0001
OW54-i	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0001	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0001	< 0.0002	< 0.0002	< 0.00005	< 0.00005	< 0.01	254	< 0.02	1.03	< 0.00005	< 0.0001	< 0.00005	< 0.00001	< 0.00005	< 0.0001	< 0.00005	3	< 0.0001
OW54-s																260	0.22	1.5		< 0.0001						< 2	
OW55-d																342	< 0.2	0.9		0.0017						< 2	
OW55-i																283	< 0.2	4.26		0.0016						14	
OW55-s																151	< 0.2	2.66		0.0002						13	
OW56-d																400	< 0.02	0.57		< 0.0001						5	
OW56-i																412	< 0.02	1.43		< 0.0001						44	
OW56-s																405	< 0.02	< 0.15		< 0.0001						< 2	
OW57																76	< 0.02	< 0.15		< 0.0001						< 2	

Table 6a: Groundwater Quality Results (May 3-6, 2010)

Name	Bromoform mg/L	Bromomethane mg/L	Cadmium mg/L	Calcium mg/L	Carbon Tetrachloride mg/L	Chemical Oxygen Demand mg/L	Chloride mg/L	Chlorobenzene mg/L	Chlorodibromomethane mg/L	Chloroform mg/L	Chromium mg/L	Chrysene mg/L	Cis-1,2-Dichloroethylene mg/L	Cis-1,3-Dichloropropylene mg/L	Conductivity µS/cm	Copper mg/L	Dibenzo(a,h)anthracene mg/L	Dichloromethane mg/L	Ethylbenzene mg/L	Field Conductivity µS/cm	Fluoranthene mg/L	Fluorene mg/L	Hardness mg/L	Indeno(1,2,3-cd)pyrene mg/L	Ionic Balance %	Iron mg/L	m+p-Xylene mg/L
2054	< 0.0002	< 0.0005	< 0.0001	62	< 0.0001	4	530	< 0.0001	< 0.0002	< 0.0001	< 0.005	< 0.00005	< 0.0001	< 0.0002	2200	< 0.002	< 0.0001	< 0.0005	< 0.0001	2016	< 0.00005	< 0.00005	350	< 0.0001	3.95	0.19	< 0.0001
2055	< 0.002	< 0.005	< 0.005	5900	< 0.001	560	49000	< 0.001	< 0.002	< 0.001	< 0.3	0.0001	< 0.001	< 0.002	> 100000	< 0.1	< 0.0001	< 0.005	< 0.001	99457	0.00022	< 0.00005	30000	< 0.0001	2.85	< 5	< 0.001
M3A-1			< 0.0001	23		12	24				< 0.005				696	< 0.002			< 0.0001	759			130		0.83	< 0.1	< 0.0001
M3A-3			< 0.0001	5.5		12	12				< 0.005				474	< 0.002			0.0002	505			18		7.6	< 0.1	0.0009
M4-3			< 0.0001	18		9	14				< 0.005				691	< 0.002			0.0003	471			130		4.89	0.27	0.0009
M5-1			< 0.0001	14		25	160				< 0.005				1330	< 0.002			< 0.0001	850			77		3.09	< 0.1	< 0.0001
M5-2			< 0.0001	21		130	210				< 0.005				1840	< 0.002			0.0012	1164			120		1.1	< 0.1	0.0031
M5-3			0.0003	34		27	41				< 0.005				983	< 0.002			< 0.0001	595			200		3.28	< 1	< 0.0001
M6-1			< 0.001	2300		440	23000				< 0.05				60700	< 0.02			< 0.003	39450			12000		3.84	20	< 0.003
M6-2	< 0.01	< 0.03	< 0.001	2700	< 0.005	370	23000	< 0.005	< 0.01	< 0.005	< 0.05		< 0.005	< 0.01	55300	< 0.02		< 0.03	< 0.005	40520			16000		7.58	< 1	0.016
M6-3			< 0.0001	920		110	960				0.016				10900	0.003			< 0.001	7980			2300		5.46	< 0.1	0.002
M9-2			< 0.0001	180		37	200				< 0.005				1710	< 0.002			< 0.0001	1930			660		2.01	9.6	< 0.0001
M9-3			< 0.0001	35		7	68				< 0.005				768	< 0.002			< 0.0001	950			190		2.06	0.15	< 0.0001
M9R-1	< 0.005	< 0.01	< 0.005	2500	< 0.003	390	22000	< 0.003	< 0.005	< 0.003	< 0.3		< 0.003	< 0.005	58800	< 0.1		< 0.01	< 0.003	62530			15000		4.1	6.8	< 0.003
M10-1			< 0.0001	110		51	67				< 0.005				1010	< 0.002			< 0.0001	1020			390		1.99	17	< 0.0001
M10-2			< 0.0001	23		< 4	35				< 0.005				934	< 0.002			< 0.0001	919			130		2.44	0.96	< 0.0001
M10-3			< 0.0001	42		< 4	23				< 0.005				677	< 0.002			< 0.0001	653			230		0.8	0.12	< 0.0001
M12			< 0.0001	100		10	22				< 0.005				625	< 0.002			< 0.0001	463			320		2.38	< 0.1	< 0.0001
M14			< 0.0001	81		5	13				< 0.005				723	< 0.002			< 0.0001	470			320		2.23	< 0.1	< 0.0001
M19			< 0.0001	100		10	31				< 0.005				880	< 0.002			< 0.0001	604			430		1.24	< 0.1	< 0.0001
M28			< 0.0001	65		6	12				< 0.005				578	< 0.002			< 0.0001	380			290		2.67	< 0.1	< 0.0001
M35			< 0.0001	34		9	39				< 0.005				1120	< 0.002			< 0.0001	707			490		2.9	< 0.1	< 0.0001
M39			< 0.0001	42		14	5				< 0.005				1140	< 0.002			< 0.0001	693			220		10.6	< 0.1	< 0.0001
M42-3			< 0.0001	55		17	920				< 0.005				3770	< 0.002			< 0.001	4350			140		0.83	< 0.1	0.001
M43-3			< 0.001	92		46	1700				< 0.05				6440	< 0.02			0.0001	6143			520		3.95	< 1	0.0001
M45-2			< 0.01	13000		1200	94000				< 0.5				> 100000	< 0.2			< 0.001	124223			58000		3.91	10	< 0.001
M45-3			< 0.0001	7200		810	65000				0.022				> 100000	0.019			0.004	95162			43000		0.17	< 5	0.035
M46-2			< 0.0001	17		11	54				< 0.005				1130	< 0.002			< 0.0001	1250			110		3.46	0.11	< 0.0001
M47-1			< 0.001	650		140	6300				< 0.05				19900	< 0.02			0.001	21800			3600		4.76	3.8	0.0006
M47-2			< 0.0001	26		37	500				< 0.005				2630	< 0.002			< 0.0001	2720			160		1.55	< 0.1	< 0.0001
M47-3			< 0.0001	2.1		22	57				< 0.005				565	< 0.002			< 0.0001	794			12		1.57	< 0.1	< 0.0001
M48-2			< 0.0001	6		5	34				< 0.005				751	< 0.002			< 0.0001	489			26		1.63	< 0.1	< 0.0001
M48-3			< 0.0001	7.3		11	100				< 0.005				780	< 0.002			< 0.0001	514			31		0.81	0.1	< 0.0001
M49-1			< 0.0001	7.3		12	240				< 0.005				1560	< 0.002			< 0.0001	1505			37		3.77	< 0.1	< 0.0001
M49-2	< 0.001	< 0.003	< 0.0001	10	< 0.0005	31	230	< 0.0005	< 0.001	< 0.0005	< 0.005	< 0.00005	< 0.0005	< 0.001	2160	< 0.002	< 0.0001	< 0.003	< 0.0005	2244	< 0.00005	< 0.00005	62	< 0.0001	0.03	< 0.1	< 0.0005

Table 6a: Groundwater Quality Results (May 3-6, 2010)

Name	Bromoform mg/L	Bromomethane mg/L	Cadmium mg/L	Calcium mg/L	Carbon Tetrachloride mg/L	Chemical Oxygen Demand mg/L	Chloride mg/L	Chlorobenzene mg/L	Chlorodibromomethane mg/L	Chloroform mg/L	Chromium mg/L	Chrysene mg/L	Cis-1,2-Dichloroethylene mg/L	Cis-1,3-Dichloropropylene mg/L	Conductivity µS/cm	Copper mg/L	Dibenzo(a,h)anthracene mg/L	Dichloromethane mg/L	Ethylbenzene mg/L	Field Conductivity µS/cm	Fluoranthene mg/L	Fluorene mg/L	Hardness mg/L	Indeno(1,2,3-cd)pyrene mg/L	Ionic Balance %	Iron mg/L	m+p-Xylene mg/L
M49-3			< 0.0001	41		28	36				< 0.005				2150	< 0.002			< 0.0001	2001			210		5.33	< 0.1	< 0.0001
M50-1	< 0.01	< 0.03	< 0.001	1300	< 0.005	360	13000	< 0.005	< 0.01	< 0.005	< 0.05	< 0.00005	< 0.005	< 0.01	34700	< 0.02	< 0.0001	< 0.03	0.007	35900	< 0.00005	< 0.00005	7100	< 0.0001	3.28	11	< 0.005
M50-3			< 0.001	550		76	7000				< 0.05				20400	< 0.02			0.0003	21800			3600		3.21	1.3	0.0004
M51-1	< 0.005	< 0.01	< 0.01	5500	< 0.003	950	51000	< 0.003	< 0.005	< 0.003	< 0.5	< 0.00005	< 0.003	< 0.005	> 100000	< 0.2	< 0.0001	< 0.01	< 0.003	100000	< 0.00005	< 0.00005	29000	< 0.0001	4.42	< 10	< 0.003
M51-2	< 0.0002	< 0.0005	< 0.0001	11	< 0.0001	7	140	< 0.0001	< 0.0002	< 0.0001	< 0.005	< 0.00005	< 0.0001	< 0.0002	1290	< 0.002	< 0.0001	< 0.0005	< 0.0001	1520	< 0.00005	< 0.00005	61	< 0.0001	3.48	0.13	< 0.0001
M51-3			< 0.0001	32		17	250				< 0.005				2050	< 0.002			< 0.0001	2590			150		28.1	0.12	< 0.0001
M52-1	< 0.0004	< 0.001	< 0.0001	24	< 0.0002	25	180	< 0.0002	< 0.0004	< 0.0002	< 0.005	< 0.00005	< 0.0002	< 0.0004	1410	< 0.002	< 0.0001	< 0.001	0.0007	1790	< 0.00005	< 0.00005	120	< 0.0001	5.33	0.84	0.0019
M52-2	< 0.0002	< 0.0005	< 0.0001	17	< 0.0001	4	200	< 0.0001	< 0.0002	< 0.0001	< 0.005	< 0.00005	< 0.0001	< 0.0002	1350	< 0.002	< 0.0001	< 0.0005	< 0.0001	1490	< 0.00005	< 0.00005	92	< 0.0001	0.39	< 0.1	0.0001
M52-3			< 0.0001	55		8	810				< 0.005				3800	< 0.002			< 0.0001	4770			280		5.79	0.81	< 0.0001
M53-2			< 0.0001	100		18	44				< 0.005				861	< 0.002			< 0.0001	864			350		2.71	16	< 0.0001
M53-3			< 0.0001	47		6	58				< 0.005				1230	< 0.002			< 0.0001	1173			260		2.65	0.25	< 0.0001
M53-4			< 0.0001	140		4	10				< 0.005				887	< 0.002			< 0.0001	624			470		5.1	< 0.1	< 0.0001
M58-2			< 0.0001	51		8	73				< 0.005				1560	< 0.002			< 0.0001	1303			220		0.42	0.89	< 0.0001
M58-3			< 0.0001	88		4	5				< 0.005				595	< 0.002			< 0.0001	429			350		7.14	< 0.1	< 0.0001
M96	< 0.0002	< 0.0005	< 0.0001	72	< 0.0001	< 4	5	< 0.0001	< 0.0002	< 0.0001	< 0.005	< 0.00005	< 0.0001	< 0.0002	662	< 0.002	< 0.0001	< 0.0005	< 0.0001	922	< 0.00005	< 0.00005	320	< 0.0001	0.01	< 0.1	< 0.0001
M97	< 0.0002	< 0.0005	< 0.0001	32	< 0.0001	21	7	< 0.0001	< 0.0002	< 0.0001	< 0.005	< 0.00005	< 0.0001	< 0.0002	498	< 0.002	< 0.0001	< 0.0005	< 0.0001	331	< 0.00005	< 0.00005	210	< 0.0001	2.97	< 0.1	< 0.0001
M98	< 0.0002	< 0.0005	< 0.0001	100	< 0.0001	14	19	< 0.0001	< 0.0002	< 0.0001	< 0.005	< 0.00005	< 0.0001	< 0.0002	882	< 0.002	< 0.0001	< 0.0005	< 0.0001	630	< 0.00005	< 0.00005	460	< 0.0001	0.24	0.19	< 0.0001
M99-2	< 0.0002	< 0.0005	< 0.0001	58	< 0.0001	20	33	< 0.0001	< 0.0002	< 0.0001	< 0.005	< 0.00005	< 0.0001	< 0.0002	833	< 0.002	< 0.0001	< 0.0005	< 0.0001	929	< 0.00005	< 0.00005	390	< 0.0001	1.73	0.94	< 0.0001
M100	< 0.0002	< 0.0005	< 0.0001	120	< 0.0001	< 4	47	< 0.0001	< 0.0002	< 0.0001	< 0.005	< 0.00005	< 0.0001	< 0.0002	924	< 0.002	< 0.0001	< 0.0005	< 0.0001	629	< 0.00005	< 0.00005	480	< 0.0001	2.91	0.8	< 0.0001
M101	< 0.0002	< 0.0005	< 0.0001	150	< 0.0001	17	150	< 0.0001	< 0.0002	< 0.0001	< 0.005	< 0.00005	< 0.0001	< 0.0002	1300	< 0.002	< 0.0001	< 0.0005	< 0.0001	1480	< 0.00005	< 0.00005	600	< 0.0001	4.24	0.34	< 0.0001
M102	< 0.0002	< 0.0005	< 0.0001	160	< 0.0001	8	48	< 0.0001	< 0.0002	< 0.0001	< 0.005	< 0.00005	< 0.0001	< 0.0002	1130	< 0.002	< 0.0001	< 0.0005	< 0.0001	1290	< 0.00005	< 0.00005	550	< 0.0001	0.97	0.78	< 0.0001
M103	< 0.0002	< 0.0005	< 0.0001	140	< 0.0001	17	150	< 0.0001	< 0.0002	< 0.0001	< 0.005	< 0.00005	< 0.0001	< 0.0002	1940	< 0.002	< 0.0001	< 0.0005	< 0.0001	2200	< 0.00005	< 0.00005	770	< 0.0001	1.37	1.1	< 0.0001
M104	< 0.0002	< 0.0005	< 0.0005	130	< 0.0001	170	880	< 0.0001	< 0.0002	< 0.0001	< 0.03	< 0.00005	< 0.0001	< 0.0002	5070	< 0.01	< 0.0001	< 0.0005	< 0.0001	2996	< 0.00005	< 0.00005	880	< 0.0001	4.76	6.5	< 0.0001
OW1			< 0.0001	30		27	57				< 0.005				995	< 0.002			0.0018	666			160		20.3	< 0.1	< 0.0002
OW4			< 0.0001	170		140	540				< 0.005				3380	< 0.002			0.0097	3660			910		3.34	15	0.0005
OW54-d	< 0.0002	< 0.0005	< 0.0001	43	< 0.0001	< 4	71	< 0.0001	< 0.0002	< 0.0001	< 0.005	< 0.00005	< 0.0001	< 0.0002	773	< 0.002	< 0.0001	< 0.0005	< 0.0001	742	< 0.00005	< 0.00005	220	< 0.0001	0.96	< 0.1	< 0.0001
OW54-i	< 0.0002	< 0.0005	< 0.0001	42	< 0.0001	< 4	67	< 0.0001	< 0.0002	< 0.0001	< 0.005	< 0.00005	< 0.0001	< 0.0002	773	< 0.002	< 0.0001	< 0.0005	< 0.0001	715	< 0.00005	< 0.00005	220	< 0.0001	2.44	< 0.1	< 0.0001
OW54-s			< 0.0001	1.8		< 4	76				< 0.005				1090	< 0.002			< 0.0001	1297			5		0.35	< 0.1	< 0.0001
OW55-d			< 0.001	360		53	3000				< 0.05				9980	< 0.02			< 0.0001	10800			1900		0.9	< 1	< 0.0001
OW55-i			< 0.001	260		60	2900				< 0.05				8770	< 0.02			< 0.0001	9420			1600		0.08	< 1	< 0.0001
OW55-s			< 0.001	180		43	2600				< 0.05				7970	< 0.02			< 0.0001	8650			1200		1.93	13	< 0.0001
OW56-d			< 0.0001	77		< 4	270				< 0.005				1860	< 0.002			< 0.0001	2060			380		1.81	0.23	< 0.0001
OW56-i			< 0.0001	61		6	250				< 0.005				1610	< 0.002			< 0.0001	1280			330		3.04	< 0.1	< 0.0001
OW56-s			< 0.0001	30		8	280				< 0.005				1970	< 0.002			< 0.0001	2150			190		2.77	< 0.1	< 0.0001
OW57			< 0.0001	3.7		< 4	19				< 0.005				579	< 0.002			< 0.0001	559			18		0.89	< 0.1	< 0.0001

Table 6a: Groundwater Quality Results (May 3-6, 2010)

Name	Magnesium mg/L	Mercury mg/L	Methyl Ethyl Ketone mg/L	Methyl Isobutyl Ketone mg/L	Methyl Tert Butyl Ether mg/L	Naphthalene mg/L	Nitrate mg/L	Nitrite mg/L	o-Xylene mg/L	pH (Lab) unitless	Phenanthrene mg/L	Phenols mg/L	Potassium mg/L
2054	47	< 0.0002	< 0.005	< 0.005	< 0.0002	0.00007	< 0.1	0.01	< 0.0001	8.2	< 0.00003	< 0.004	27
2055	3600	< 0.0002	< 0.05	< 0.05	< 0.002	0.00027	0.1	< 0.01	< 0.001	7.1	0.00024	0.03	170
M3A-1	17	< 0.0002					< 0.1	< 0.01	< 0.0001	8.2		0.011	7.8
M3A-3	1.1	< 0.0002					< 0.1	< 0.01	0.0003	8.6		< 0.004	4.7
M4-3	21	< 0.0002					< 0.1	< 0.01	0.0005	8.2		< 0.004	44
M5-1	9.9	< 0.0002					< 0.1	< 0.01	< 0.0001	8.3		0.016	8.5
M5-2	16	< 0.0002					< 0.1	< 0.01	0.0034	8.3		0.22	11
M5-3	27	< 0.0002					< 0.1	< 0.01	< 0.0001	8.1		0.037	12
M6-1	1400	< 0.0002					< 0.1	< 0.01	< 0.003	7.4		< 0.004	120
M6-2	2300	< 0.0002	< 0.3	< 0.3	< 0.01		< 0.1	< 0.01	< 0.005	9.2		0.014	220
M6-3	< 0.05	< 0.0002					< 0.1	< 0.01	< 0.001	12		0.008	86
M9-2	52	< 0.0002					< 0.1	< 0.01	< 0.0001	7.6		< 0.004	6.3
M9-3	25	< 0.0002					< 0.1	< 0.01	< 0.0001	8.1		< 0.004	18
M9R-1	2000	< 0.0002	< 0.1	< 0.1	< 0.005		< 0.1	< 0.01	< 0.003	7.5		< 0.004	65
M10-1	29	< 0.0002					< 0.1	< 0.01	< 0.0001	7.6		< 0.004	4.5
M10-2	17	< 0.0002					0.1	0.07	< 0.0001	8.3		< 0.004	12
M10-3	30	< 0.0002					< 0.1	< 0.01	< 0.0001	8.1		0.006	12
M12	16	< 0.0002					2	< 0.01	< 0.0001	8		< 0.004	0.48
M14	29	< 0.0002					0.8	< 0.01	< 0.0001	8		< 0.004	9
M19	43	< 0.0002					0.4	< 0.01	< 0.0001	8.1		< 0.004	5.8
M28	30	< 0.0002					0.6	0.05	< 0.0001	8.2		< 0.004	1.5
M35	98	< 0.0002					0.1	< 0.01	< 0.0001	8.2		< 0.004	0.38
M39	28	< 0.0002					< 0.1	< 0.01	< 0.0001	8.2		< 0.004	0.73
M42-3	< 0.05	< 0.0002					< 0.1	< 0.01	< 0.001	11		0.046	17
M43-3	70	< 0.0002					< 0.1	< 0.01	< 0.0001	8.1		< 0.004	15
M45-2	6200	< 0.0002					0.2	< 0.01	< 0.001	6.8		< 0.02	350
M45-3	6000	< 0.0002					0.1	< 0.01	0.009	6.8		0.02	300
M46-2	16	< 0.0002					< 0.1	< 0.01	0.0001	8.3		< 0.004	11
M47-1	480	< 0.0002					< 0.1	< 0.01	< 0.0002	7.7		< 0.004	52
M47-2	23	< 0.0002					< 0.1	< 0.01	0.0001	8.4		0.045	18
M47-3	1.6	< 0.0002					< 0.1	< 0.01	< 0.0001	9.7		< 0.004	1.2
M48-2	2.8	< 0.0002					< 0.1	< 0.01	< 0.0001	8.4		< 0.004	4.1
M48-3	3	< 0.0002					< 0.1	< 0.01	< 0.0001	8.4		< 0.004	4.9
M49-1	4.5	< 0.0002					< 0.1	< 0.01	< 0.0001	8.5		< 0.004	6.4
M49-2	8.8	< 0.0002	< 0.03	< 0.03	< 0.001	0.00014	< 0.1	< 0.01	< 0.0005	8.2	0.00006	0.14	11

Name	Pyrene mg/L	Silver mg/L	Sodium mg/L	Styrene mg/L	Sulphate mg/L	Tetrachloroethylene mg/L	Toluene mg/L	Total Kjeldahl Nitrogen mg/L	Total Organic Carbon mg/L	Total Xylenes mg/L	Trans-1,2-dichloroethylene mg/L	Trans-1,3-dichloropropene mg/L	Trichloroethylene mg/L	Vinyl Chloride mg/L
2054	< 0.00005	< 0.0004	290	< 0.0002	21	< 0.0001	< 0.0002	3.2	1.5	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002
2055	0.00017	< 0.02	16000	< 0.002	130	< 0.001	< 0.002	23	3.5	< 0.001	< 0.001	< 0.002	< 0.001	< 0.002
M3A-1		< 0.0004	110		29		< 0.0002	< 7	1.5	< 0.0001				
M3A-3		< 0.0004	120		28		0.0008	< 7	4	0.0012				
M4-3		< 0.0004	97		8		0.0008	1	1.4	0.0014				
M5-1		< 0.0004	290		41		< 0.0002	< 10	2.4	< 0.0001				
M5-2		< 0.0004	380		240		0.004	< 70	1	0.0065				
M5-3		< 0.0004	150		26		< 0.0002	< 4	0.8	< 0.0001				
M6-1		< 0.004	11000		250		< 0.005	18	4	< 0.003				
M6-2		< 0.004	9900	< 0.01	14	< 0.005	0.074	18	5.4	0.016	< 0.005	< 0.01	< 0.005	< 0.01
M6-3		< 0.0004	570		2		0.005	12	31.6	0.002				
M9-2		< 0.0004	130		19		< 0.0002	4	11.6	< 0.0001				
M9-3		< 0.0004	84		32		< 0.0002	1.3	1.2	< 0.0001				
M9R-1		< 0.02	9600	< 0.005	1000	< 0.003	< 0.005	16	4.7	< 0.003	< 0.003	< 0.005	< 0.003	< 0.005
M10-1		< 0.0004	61		20		< 0.0002	3	8.6	< 0.0001				
M10-2		< 0.0004	170		39		< 0.0002	3	2.3	< 0.0001				
M10-3		< 0.0004	49		8		< 0.0002	2.3	1.2	< 0.0001				
M12		< 0.0004	12		31		< 0.0002	< 0.7	1	< 0.0001				
M14		< 0.0004	20		67		< 0.0002	< 0.7	1.2	< 0.0001				
M19		< 0.0004	11		110		< 0.0002	< 0.7	0.8	< 0.0001				
M28		< 0.0004	5.1		34		< 0.0002	< 0.7	0.9	< 0.0001				
M35		< 0.0004	50		70		< 0.0002	< 0.7	1.2	< 0.0001				
M39		< 0.0004	140		70		< 0.0002	< 0.7	3.1	< 0.0001				
M42-3		< 0.0004	690		180		< 0.002	7	1.6	0.001				
M43-3		< 0.004	1200		38		< 0.0002	2.5	4.4	0.0001				
M45-2		< 0.04	30000		680		0.006	33	3.2	< 0.001				
M45-3		< 0.0004	22000		240		0.061	31	4.7	0.045				
M46-2		< 0.0004	230		30		< 0.0002	1.7	2.1	0.0001				
M47-1		< 0.004	3000		17		0.0014	3.6	1.6	0.0006				
M47-2		< 0.0004	500		44		< 0.0002	4	1.7	0.0001				
M47-3		< 0.0004	130		13		< 0.0002	2	1.4	< 0.0001				
M48-2		< 0.0004	160		28		< 0.0002	< 1	1.1	< 0.0001				
M48-3		< 0.0004	150		24		0.0006	< 4	2.4	< 0.0001				
M49-1		< 0.0004	290		20		< 0.0002	1.8	3.6	< 0.0001				
M49-2	< 0.00005	< 0.0004	460	< 0.001	110	< 0.0005	< 0.001	18	1.9	< 0.0005	< 0.0005	< 0.001	< 0.0005	< 0.001

Table 6a: Groundwater Quality Results (May 3-6, 2010)

Name	Magnesium mg/L	Mercury mg/L	Methyl Ethyl Ketone mg/L	Methyl Isobutyl Ketone mg/L	Methyl Tert Butyl Ether mg/L	Naphthalene mg/L	Nitrate mg/L	Nitrite mg/L	o-Xylene mg/L	pH (Lab) unitless	Phenanthrene mg/L	Phenols mg/L	Potassium mg/L
M49-3	27	0.0002					13	0.03	< 0.0001	8.2		< 0.004	14
M50-1	950	< 0.0002	< 0.3	< 0.3	< 0.01	0.0001	< 0.1	< 0.01	< 0.005	7.6	< 0.00003	< 0.004	57
M50-3	530	< 0.0002					< 0.1	< 0.01	0.0004	7.7		< 0.004	82
M51-1	3800	< 0.0002	< 0.1	< 0.1	< 0.005	0.00018	< 0.1	< 0.01	< 0.003	7	0.00006	0.012	160
M51-2	8.2	< 0.0002	< 0.005	< 0.005	< 0.0002	0.00008	< 0.1	< 0.01	< 0.0001	8.3	< 0.00003	< 0.004	10
M51-3	18	< 0.0002					0.3	0.11	< 0.0001	8.1		< 0.004	11
M52-1	16	< 0.0002	< 0.01	< 0.01	< 0.0004	0.0001	< 0.1	< 0.01	0.0008	8	< 0.00003	< 0.004	12
M52-2	12	< 0.0002	< 0.005	< 0.005	< 0.0002	0.00008	< 0.1	< 0.01	< 0.0001	8.2	< 0.00003	0.011	11
M52-3	34	< 0.0002					0.2	0.07	< 0.0001	8.1		< 0.004	17
M53-2	24	< 0.0002					< 0.1	< 0.01	< 0.0001	7.7		< 0.004	3.2
M53-3	34	< 0.0002					< 0.1	< 0.01	< 0.0001	8		< 0.004	12
M53-4	30	< 0.0002					< 0.1	< 0.01	< 0.0001	7.9		< 0.004	0.54
M58-2	22	< 0.0002					0.2	0.09	< 0.0001	8.2		< 0.004	7.9
M58-3	31	< 0.0002					0.4	< 0.01	< 0.0001	8.1		< 0.004	1.8
M96	35	< 0.0002	< 0.005	< 0.005	< 0.0002	< 0.00005	1.8	< 0.01	< 0.0001	8.2	< 0.00003	< 0.004	4.2
M97	31	< 0.0002	< 0.005	< 0.005	< 0.0002	< 0.00005	< 0.1	< 0.01	< 0.0001	8.3	0.00007	< 0.004	1.8
M98	51	< 0.0002	< 0.005	< 0.005	< 0.0002	< 0.00005	< 0.1	< 0.01	< 0.0001	8	< 0.00003	< 0.004	3.1
M99-2	60	< 0.0002	< 0.005	< 0.005	< 0.0002	0.00009	< 0.1	0.04	< 0.0001	8.2	0.0001	< 0.004	2.6
M100	43	< 0.0002	< 0.005	< 0.005	< 0.0002	< 0.00005	< 0.1	0.04	< 0.0001	8.1	< 0.00003	< 0.004	4.6
M101	58	< 0.0002	< 0.005	< 0.005	< 0.0002	< 0.00005	0.1	0.05	< 0.0001	7.9	< 0.00003	< 0.004	6
M102	38	< 0.0002	< 0.005	< 0.005	< 0.0002	< 0.00005	< 0.1	< 0.01	< 0.0001	7.8	0.00005	< 0.004	1.9
M103	100	< 0.0002	< 0.005	< 0.005	< 0.0002	< 0.00005	0.1	0.25	< 0.0001	7.9	< 0.00003	< 0.004	8.4
M104	130	< 0.0002	< 0.005	< 0.005	0.0004	< 0.00005	0.1	0.03	< 0.0001	7.8	< 0.00003	< 0.004	12
OW1	20	< 0.0002					< 0.1	< 0.01	< 0.0002	8		0.039	8.4
OW4	120	< 0.0002					< 0.1	< 0.01	< 0.0005	8		< 0.004	13
OW54-d	27	< 0.0002	< 0.005	< 0.005	< 0.0002	< 0.00005	< 0.1	< 0.01	< 0.0001	8.2	< 0.00003	< 0.004	12
OW54-i	28	< 0.0002	< 0.005	< 0.005	< 0.0002	0.00007	< 0.1	< 0.01	< 0.0001	8.1	< 0.00003	< 0.004	13
OW54-s	0.099	< 0.0002					0.8	0.58	< 0.0001	11		< 0.004	26
OW55-d	250	< 0.0002					2.9	0.33	< 0.0001	7.8			43
OW55-i	220	< 0.0002					< 0.1	< 0.01	< 0.0001	7.8		0.01	44
OW55-s	180	< 0.0002					< 0.1	< 0.01	< 0.0001	7.7		0.007	35
OW56-d	46	< 0.0002					< 0.1	< 0.01	< 0.0001	8		< 0.004	19
OW56-i	42	< 0.0002					< 0.1	< 0.01	< 0.0001	8.2		0.072	17
OW56-s	28	< 0.0002					0.2	< 0.01	< 0.0001	8.4		< 0.004	16
OW57	2.1	< 0.0002					< 0.1	< 0.01	< 0.0001	9.4		< 0.004	1.5

Name	Pyrene mg/L	Silver mg/L	Sodium mg/L	Styrene mg/L	Sulphate mg/L	Tetrachloroethylene mg/L	Toluene mg/L	Total Kjeldahl Nitrogen mg/L	Total Organic Carbon mg/L	Total Xylenes mg/L	Trans-1,2-dichloroethylene mg/L	Trans-1,3-dichloropropene mg/L	Trichloroethylene mg/L	Vinyl Chloride mg/L
M49-3		< 0.0004	350		530		< 0.0002	5	7.7	< 0.0001				
M50-1	< 0.00005	< 0.004	5700	< 0.01	18	< 0.005	< 0.01	9	1.7	< 0.005	< 0.005	< 0.01	< 0.005	< 0.01
M50-3		< 0.004	3300		9		0.0012	10	2	0.0008				
M51-1	< 0.00005	< 0.04	23000	< 0.005	740	< 0.003	0.025	34	7.6	< 0.003	< 0.003	< 0.005	< 0.003	< 0.005
M51-2	< 0.00005	< 0.0004	290	< 0.0002	3	< 0.0001	< 0.0002	2	1.6	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002
M51-3		< 0.0004	180		130		< 0.0002	3	6.1	< 0.0001				
M52-1	< 0.00005	< 0.0004	270	< 0.0004	3	< 0.0002	< 0.0004	4	4	0.0027	< 0.0002	< 0.0004	< 0.0002	< 0.0004
M52-2	< 0.00005	< 0.0004	260	< 0.0002	20	< 0.0001	< 0.0002	3	1.2	0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002
M52-3		< 0.0004	610		120		< 0.0002	2	2.3	< 0.0001				
M53-2		< 0.0004	44		18		< 0.0002	< 0.7	5.6	< 0.0001				
M53-3		< 0.0004	150		160		< 0.0002	2.5	1.6	< 0.0001				
M53-4		< 0.0004	39		170		< 0.0002	0.9	3	< 0.0001				
M58-2		< 0.0004	280		270		< 0.0002	0.8	1.8	< 0.0001				
M58-3		< 0.0004	10		42		< 0.0002	< 0.7	0.8	< 0.0001				
M96	< 0.00005	< 0.0004	25	< 0.0002	50	< 0.0001	< 0.0002	2	2.5	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002
M97	< 0.00005	< 0.0004	17	< 0.0002	45	< 0.0001	< 0.0002	< 10	1.9	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002
M98	< 0.00005	< 0.0004	14	< 0.0002	88	< 0.0001	< 0.0002	< 4	2.4	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002
M99-2	< 0.00005	< 0.0004	21	< 0.0002	150	< 0.0001	< 0.0002	< 10	3.3	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002
M100	< 0.00005	< 0.0004	18	< 0.0002	61	< 0.0001	< 0.0002	< 7	4.3	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002
M101	< 0.00005	< 0.0004	19	< 0.0002	140	< 0.0001	< 0.0002	< 4	6.3	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002
M102	< 0.00005	< 0.0004	25	< 0.0002	71	< 0.0001	< 0.0002	< 7	5.1	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002
M103	< 0.00005	< 0.0004	160	< 0.0002	51	< 0.0001	< 0.0002	< 4	8	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002
M104	< 0.00005	< 0.002	940	< 0.0002	66	< 0.0001	< 0.0002	< 10	56.4	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002
OW1		< 0.0004	81		48		< 0.0004	< 4	4.6	< 0.0002				
OW4		< 0.0004	430		4		0.021	8	47.2	0.0005				
OW54-d	< 0.00005	< 0.0004	73	< 0.0002	30	< 0.0001	< 0.0002	1.3	0.8	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002
OW54-i	< 0.00005	< 0.0004	77	< 0.0002	39	< 0.0001	< 0.0002	1.8	1.1	< 0.0001	< 0.0001	< 0.0002	< 0.0001	< 0.0002
OW54-s		< 0.0004	190		86		< 0.0002	1.8	1.1	< 0.0001				
OW55-d		< 0.004	1400		360		< 0.0002	1.4	1.5	< 0.0001				
OW55-i		< 0.004	1300		39		< 0.0002	6	1.8	< 0.0001				
OW55-s		< 0.004	1200		45		< 0.0002	< 4	2.5	< 0.0001				
OW56-d		< 0.0004	240		120		< 0.0002	2	0.7	< 0.0001				
OW56-i		< 0.0004	220		16		< 0.0002	3	0.5	< 0.0001				
OW56-s		< 0.0004	370		150		< 0.0002	< 0.7	1.4	< 0.0001				
OW57		< 0.0004	110		160		< 0.0002	1	1.6	< 0.0001				

Table 6b: Groundwater Quality Results (October 26-28, 2010)

Name	Date	Alkalinity	Ammonia	Arsenic	Barium	Biochemical Oxygen Demand	Boron	Cadmium	Calcium	Chemical Oxygen Demand	Chloride	Chromium	Conductivity	Copper	Dissolved Organic Carbon	Hardness	Iron	Lead	Magnesium	Manganese	Mercury	Naphthalene	Nitrate	Nitrite	pH (Lab)	Phenols	Phosphorus (total)	Potassium	Sodium	Sulphate	Total Dissolved Solids	Total Kjeldahl Nitrogen	Zinc
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	unitless	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Shallow Groundwater Flow Zone*																																	
M41	28/10/2010	464	< 0.05	< 0.001	0.087	< 2	0.07	< 0.0001	145	18	170	< 0.005	1550	< 0.002	3.7	680	0.55	< 0.0005	78.5	0.069	< 0.0001	< 0.0005	< 0.1	0.01	7.76	< 0.004	< 0.03	18	41.6	86	992	< 0.7	< 0.01
M53-4	28/10/2010	362	< 0.05	< 0.001	0.05	< 2	< 0.02	< 0.0001	134	14	5	< 0.005	1010	< 0.002	3	450	< 0.02	< 0.0005	29.2	< 0.002	< 0.0001	< 0.0005	< 0.1	< 0.01	7.7	< 0.004	0.03	< 1	55.3	180	648	< 0.7	< 0.01
M54-4	26/10/2010	363	< 0.05	< 0.001	0.18	< 2	0.037	< 0.0001	131	9	78	0.034	980	< 0.002	2.2	430	< 0.02	< 0.0005	25.4	0.002	< 0.0001	< 0.0005	0.2	< 0.01	7.8	< 0.004	2.5	1	54.8	39	620	3	< 0.01
M66-2	26/10/2010	341	0.33	0.002	0.025	< 2	1.4	< 0.0001	101	14	140	0.015	1720	< 0.002	2.3	430	1.11	< 0.0005	43.6	0.027	< 0.0001	< 0.0005	0.3	< 0.01	8.03	< 0.004	0.08	8	218	340	1070	0.9	< 0.01
M67-2	26/10/2010	388	1.7	0.008	0.27	< 2	0.77	< 0.0001	47.6	21	5	0.008	881	< 0.002	2.6	230	0.59	< 0.0005	27.1	0.082	< 0.0001	< 0.0005	0.3	0.4	8.13	0.007	0.23	9	76.6	77	552	6	< 0.01
M68-4	28/10/2010	368	< 0.05	< 0.001	0.17	< 2	< 0.02	< 0.0001	147	16	55	0.013	901	< 0.002	2.9	460	0.4	< 0.0005	22.4	0.1	< 0.0001	< 0.0005	< 0.1	< 0.01	7.52	< 0.004	0.9	< 1	19.7	26	562	1	< 0.01
M70-3	27/10/2010	254	< 0.05	< 0.001	0.024	< 2	< 0.02	< 0.0001	141	51	35	0.032	882	< 0.002	4.2	450	< 0.02	< 0.0005	23.1	< 0.002	< 0.0001	< 0.0005	< 0.1	< 0.01	7.78	< 0.004	1	< 1	18.8	130	552	7	< 0.01
M80-2	26/10/2010	296	0.46	< 0.001	0.074	< 2	0.074	< 0.0001	70.2	36	18	0.042	772	< 0.002	1.5	330	0.52	< 0.0005	36.8	0.019	< 0.0001	< 0.0005	< 0.1	< 0.01	7.97	< 0.004	2.6	3	17.5	93	502	3	< 0.01
M81	26/10/2010	353	0.13	0.003	0.041	< 2	0.19	< 0.0001	96.1	28	49	0.044	915	< 0.002	2.4	420	3.74	< 0.0005	44.8	0.061	< 0.0001	< 0.0005	< 0.1	< 0.01	7.89	< 0.004	2.4	6	62	58	592	1.1	< 0.01
M87-2	27/10/2010	221	< 0.05	0.001	0.058	< 2	0.043	< 0.0001	57.6	23	29	0.059	611	< 0.002	1.2	300	< 0.02	< 0.0005	38.7	0.007	< 0.0001	< 0.0005	< 0.1	< 0.01	7.98	< 0.004	2.1	2	16.3	53	392	2	< 0.01
M96	27/10/2010	306	< 0.05	< 0.001	0.14	< 2	0.071	< 0.0001	77.8	8	5	< 0.005	670	< 0.002	2	330	< 0.02	< 0.0005	34	0.006	< 0.0001	< 0.0005	2.1	< 0.01	7.96	< 0.004	0.14	4	17.3	40	438	< 0.7	< 0.01
M97	27/10/2010	211	0.07	0.002	0.081	< 2	0.067	< 0.0001	36.5	17	7	0.023	520	< 0.002	1.6	230	0.02	< 0.0005	34.8	0.02	< 0.0001	< 0.0005	< 0.1	< 0.01	8.12	< 0.004	1.3	2	21.6	50	328	1.5	< 0.01
M99-2	26/10/2010	282	0.19	0.002	0.05	< 2	0.094	< 0.0001	63.1	28	33	0.026	838	< 0.002	3.1	400	1.21	< 0.0005	59.8	0.015	< 0.0001	< 0.0005	< 0.1	< 0.01	7.96	< 0.004	5.7	3	20.8	130	518	3	< 0.01
M101	26/10/2010	367	0.11	0.002	0.25	< 2	0.1	< 0.0001	245	16	140	< 0.005	1320	0.007	7.3	870	6.28	0.0034	62.6	0.23	< 0.0001	< 0.0005	0.2	< 0.01	7.93	< 0.004	0.41	6	18.5	130	822	1.3	0.027
M102	26/10/2010	473	0.19	0.002	0.15	< 2	0.044	< 0.0001	168	14	51	< 0.005	1130	< 0.002	5.4	570	1.12	< 0.0005	37.1	0.31	< 0.0001	< 0.0005	< 0.1	< 0.01	7.84	< 0.004	0.3	2	28.2	61	726	1.1	< 0.01
M103	26/10/2010	852	0.36	0.003	0.18	< 2	0.4	< 0.0001	145	22	140	0.006	1940	< 0.002	7.7	750	1.19	< 0.0005	94.3	0.043	< 0.0001	< 0.0005	< 0.1	0.18	7.9	< 0.004	0.19	8	159	43	1190	1.6	< 0.01
OW37-s	27/10/2010	132	< 0.05	< 0.001	0.11	< 2	0.088	< 0.0001	39	7	71	< 0.005	514	< 0.002	1.5	150	0.42	< 0.0005	13.8	0.3	< 0.0001	< 0.0005	< 0.1	< 0.01	7.9	< 0.004	< 0.15	8	35	9	326	< 0.7	< 0.01
Intermediate BedrockGroundwater Flow Zone																																	
M5-3	26/10/2010	424	1.2	< 0.001	0.19	8	1.1	< 0.0001	35	9	40	< 0.005	978	< 0.002	1.8	190	0.03	< 0.0005	26	0.003	< 0.0001	< 0.0005	< 0.1	< 0.01	7.88	0.054	0.04	13	141	29	624	1.8	< 0.01
M6-3	26/10/2010	1690	8.6	0.002	2.2	< 2	< 0.02	< 0.0001	937	100	980	0.018	11400	0.002	30.4	2300	< 0.2	0.0016	< 0.5	< 0.002	< 0.0001	< 0.005	< 0.1	< 0.01	12.4	0.01	< 0.15	79	509	< 1	7590	12	< 0.01
M9-3	28/10/2010	579	0.64	< 0.001	0.26	< 2	0.28	< 0.0001	152	33	160	< 0.005	1520	< 0.002	10.5	540	7.08	< 0.0005	38.2	0.26	< 0.0001	< 0.0005	< 0.1	< 0.01	7.17	< 0.004	0.09	6	102	12	948	1.5	< 0.01
M10-1	28/10/2010	587	0.49	0.003	0.27	2	0.26	< 0.0001	188	33	150	< 0.005	1530	< 0.002	10	650	28.2	< 0.0005	44.2	1.2	< 0.0001	< 0.0005	< 0.1	< 0.01	7.27	< 0.004	0.04	6	89.8	25	960	1.3	< 0.01
M49-1	28/10/2010	372	0.56	< 0.001	0.023	< 2	0.86	< 0.0001	8.19	16	240	< 0.005	1590	< 0.002	2.9	37	0.03	< 0.0005	4.04	0.007	< 0.0001	< 0.0005	< 0.1	0.12	8.19	< 0.004	0.12	7	328	22	1000	1.2	< 0.01
M56-2	27/10/2010	272	0.11	< 0.001	0.2	< 2	0.08	< 0.0001	80.1	8	25	< 0.005	757	< 0.002	1.5	390	0.09	< 0.0005	46.7	0.055	< 0.0001	< 0.0005	< 0.1	< 0.01	7.96	< 0.004	0.03	3	12.8	90	482	< 0.7	< 0.01
M57	28/10/2010	80	9.3	0.009	0.012	< 2	0.7	< 0.0001	8.39	25	610	< 0.005	2330	0.002	3.3	21	< 0.02	< 0.0005	0.12	< 0.002	< 0.0001	< 0.0005	< 0.1	0.06	9.59	< 0.004	0.06	13	430	71	1450	9.3	< 0.01
M58-3	26/10/2010	313	< 0.05	< 0.001	0.15	< 2	< 0.02	< 0.0001	96.3	< 4	6	< 0.005	686	< 0.002	1.1	370	< 0.02	< 0.0005	31.4	< 0.002	< 0.0001	< 0.0005	0.3	< 0.01	7.98	< 0.004	< 0.03	1	5.9	48	432	< 0.7	< 0.01
M59-2	26/10/2010	419	0.44	< 0.001	0.21	< 2	0.23	< 0.0001	128	26	61	< 0.005	997	< 0.002	8.2	470	< 0.02	< 0.0005	36.9	0.013	< 0.0001	< 0.0005	< 0.1	< 0.01	7.91	0.005	0.06	5	34.1	38	628	2	< 0.01
M59-3	26/10/2010	267	< 0.05	< 0.001	0.063	< 2	0.025	< 0.0001	102	6	18	< 0.005	592	< 0.002	2.8	300	0.08	< 0.0005	11	0.01	< 0.0001	< 0.0005	< 0.1	< 0.01	7.94	< 0.004	< 0.03	< 1	8.2	26	378	< 0.7	< 0.01
M59-4	26/10/2010	323	2.3	0.005	0.12	< 2	0.56	< 0.0001	63.1	40	4	< 0.005	643	< 0.002	3.5	300	0.63	< 0.0005	33.5	0.02	< 0.0001	< 0.0005	< 0.1	0.01	8.01	< 0.004	0.26	8	23.1	23	418	6.6	< 0.01
M70-1	27/10/2010	210	6.6	< 0.01	0.31	< 2	3.1	< 0.001	922	120	8400	0.005	25100	< 0.04	2.6	4900	18.9	< 0.005	640	0.23	< 0.0001	< 0.0005	0.3	< 0.01	7.36	< 0.004	0.15	55	3330	270	15100	7.7	< 0.1
M71	28/10/2010	610	2	< 0.001	0.081	7	0.46	< 0.0001	169	26	230	< 0.005	1840	< 0.002	8.3	640	< 0.02	< 0.0005	52.3	0.009	< 0.0001	< 0.0005	< 0.1	< 0.01	7.29	0.008	0.07	15	131	19	1180	3.1	< 0.01
M72	28/10/2010	255	0.46	< 0.001	0.15	9	0.37	< 0.0001	55.1	13	22	< 0.005	605	< 0.002	1.6	270	< 0.02	< 0.0005	32.1	< 0.002	< 0.0001	< 0.0005	< 0.1	< 0.01	7.86	0.043	< 0.03	8	17.6	32	384	2	< 0.01
M74	28/10/2010	298	1.2	< 0.001	0.1	3	0.93	< 0.0001	33.4	14	17	< 0.005	670	< 0.002	2.3	170	0.15	< 0.0005	22	0.01	< 0.0001	< 0.0005	< 0.1	0.01	8.12	0.005	0.16	12	72.5	30	428	2	< 0.01
M75	28/10/2010	506	2.9	0.002	0.051	9	1.3	< 0.0001	29.5	100	96	0.011	1260	< 0.002	12	150	0.77	0.005	18	0.025	< 0.0001	< 0.001	< 0.1	0.03	7.93	0.034	1.7	18	202	75	798	9	< 0.01
M80-1	26/10/2010	187	0.44	< 0.001	0.034	7	0.4	< 0.0001	27.1	18	9	< 0.005	406	< 0.002	1.4	120	< 0.02	< 0.0005	12.8	0.009	< 0.0001	< 0.0005	< 0.1	< 0.01	8.33	0.044	0.04	5	44.2	38	280	3	< 0.01
M82-1	27/10/2010	316	0.84	< 0.001	0.18	3	1.1	< 0.0001	48	11	45	< 0.005	862	< 0.002	2.2	230	0.09	< 0.0005	26.9	< 0.002	< 0.0001	< 0.0005	< 0.1	< 0.01	7.86	< 0.004	< 0.03	10	94.7	55	542	1.4	< 0.01
M82-2	27/10/2010	328	0.25	< 0.001	0.14	< 2	0.19	< 0.0001	111	13	35	< 0.005	829	< 0.002	2.9	400	< 0.02	< 0.0005	29.7	0.019	< 0.0001	< 0.0005	< 0.1	< 0.01	7.8	< 0.004	< 0.03	4	22.8	63	528	1.1	< 0.01
M91-1	26/10/2010	275	0.47	< 0.001	0.085	< 2	0.53	< 0.0001	50	22	25	0.016	722	< 0.002	2.4	230	0.84	< 0.0005	24.4	0.007	< 0.0001	< 0.0005	0.5	< 0.01	8.19	< 0.004	0.34	9	59.4	63	462	1.7	< 0.01
M95-1	28/10/2010	322	< 0.05	< 0.001	0.13	< 2	0.024	< 0.0001	115	8	10	< 0.005	751	< 0.002	2.2	400	0.38	< 0.0005	27.6	0.006	< 0.0001	< 0.0005	0.1	< 0.01	7.71	< 0.004	0.06	2	7.6	64	476	< 0.7	< 0.01
OW54-d	28/10/2010	261	0.97	< 0.001	0.047	2	0.55	< 0.0001	42.9	4	72	< 0.005	772	< 0.002	1.3	220	< 0.02	< 0.0005	26.6	0.037	< 0.0001	< 0.0005	< 0.1	< 0.01	7.95	< 0.004	< 0.03	13	72.7	20	482	1.3	< 0.01

* Shallow groundwater monitoring wells not sampled: M29, M39, M58-4 (see text for details)

Table 7: Water Quality Results from Off-Site Domestic Supply Wells (October 27, 2010)

Parameter	Units	1097 Beechwood Road	1121 Beechwood Road	1144 Beechwood Road	1181 Beechwood Road	1206 Beechwood Road	1250 Beechwood Road	1252 Beechwood Road	1264 Beechwood Road
Inorganic and General Parameters									
Alkalinity	mg/L	266	300	498	409	334	614	362	572
Ammonia	mg/L	< 0.05	< 0.05	0.85	1.2	< 0.05	0.47	0.13	0.18
Arsenic	mg/L	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.003	< 0.001	< 0.001
Barium	mg/L	0.093	0.07	0.025	0.079	0.078	0.3	0.16	0.11
Biochemical Oxygen Demand	mg/L	< 2	< 2	< 2	4	< 2	< 2	< 2	< 2
Boron	mg/L	0.062	0.03	0.24	0.61	0.027	0.19	0.11	0.27
Cadmium	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Calcium	mg/L	86	90	140	86	120	190	110	170
Chemical Oxygen Demand	mg/L	6	5	17	13	12	31	5	28
Chloride	mg/L	14	31	110	150	47	140	60	140
Chromium	mg/L	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Conductivity	µS/cm	628	791	1300	1280	823	1560	950	1470
Copper	mg/L	0.003	0.002	< 0.001	0.002	0.014	0.002	0.005	< 0.001
Dissolved Organic Carbon	mg/L	2	1.5	5.9	3.2	3.8	8	1.8	7.4
Hardness	mg/L	300	370	540	370	380	650	410	590
Iron	mg/L	< 0.1	< 0.1	< 0.1	< 0.1	0.15	32	9	13
Lead	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0015	< 0.0005	< 0.0005	< 0.0005
Magnesium	mg/L	21	36	44	38	18	42	30	41
Manganese	mg/L	< 0.002	0.022	0.002	< 0.002	0.006	1.9	0.25	0.72
Mercury	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Naphthalene	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.003	< 0.0005
Nitrate	mg/L	1.8	1.2	< 0.1	< 0.1	0.5	< 0.1	0.3	< 0.1
Nitrite	mg/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01
pH (Lab)	unitless	8.1	8.03	7.7	7.92	7.83	7.54	7.86	7.65
Phenols	mg/L	< 0.001	< 0.001	0.002	0.026	< 0.001	< 0.001	< 0.001	< 0.001
Phosphorus (total)	mg/L	0.03	0.03	< 0.02	0.02	0.04	< 0.02	< 0.02	< 0.02
Potassium	mg/L	8.2	2.6	10	11	6.3	4.7	3.1	5.6
Sodium	mg/L	13	20	68	120	22	80	41	86
Sulphate	mg/L	39	74	35	26	24	30	50	24
Total Dissolved Solids	mg/L	408	498	828	778	520	968	606	908
Total Kjeldahl Nitrogen	mg/L	0.4	0.3	1.5	1.4	0.5	1.4	0.5	0.9
Zinc	mg/L	0.012	0.032	0.016	< 0.005	< 0.005	0.058	0.017	< 0.005

Table 7: Water Quality Results from Off-Site Domestic Supply Wells (October 27, 2010)

Parameter	Units	1097 Beechwood Road	1121 Beechwood Road	1144 Beechwood Road	1181 Beechwood Road	1206 Beechwood Road	1250 Beechwood Road	1252 Beechwood Road	1264 Beechwood Road
Volatile Organic Compounds (VOCs)									
1,1,1,2-Tetrachloroethane	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0005	< 0.0001
1,1,1-Trichloroethane	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.043	< 0.0001
1,1,2,2-Tetrachloroethane	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0002
1,1,2-Trichloroethane	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0002
1,1-Dichloroethane	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0061	0.079	0.0006
1,1-Dichloroethylene	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0002	0.0082	0.0004
1,2-Dibromoethane	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0002
1,2-Dichlorobenzene (o)	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0002
1,2-Dichloroethane	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0002
1,2-Dichloropropane	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0005	< 0.0001
1,3,5-Trimethylbenzene	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0002
1,3-Dichlorobenzene (m)	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0002
1,4-Dichlorobenzene (p)	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0002
Benzene	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0005	< 0.0001
Bromodichloromethane	mg/L	0.001	< 0.0001	0.0002	0.0012	< 0.0001	< 0.0001	< 0.0005	< 0.0001
Bromoform	mg/L	< 0.0002	< 0.0002	< 0.0002	0.0012	< 0.0002	< 0.0002	< 0.001	< 0.0002
Bromomethane	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.003	< 0.0005
Carbon Tetrachloride	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0005	< 0.0001
Chlorobenzene	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0005	< 0.0001
Chloroethane	mg/L	< 0.0002	< 0.0002	0.0004	0.0012	< 0.0002	0.0038	0.009	0.022
Chloroform	mg/L	0.0043	0.0008	0.0024	0.0008	< 0.0001	< 0.0001	< 0.0005	< 0.0001
Chloromethane	mg/L	< 0.0005	< 0.0005	< 0.0005	0.0021	< 0.0005	< 0.0005	< 0.003	< 0.0005
Cis-1,2-Dichloroethylene	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0005	< 0.0001
Cis-1,3-Dichloropropylene	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0002
Dichloromethane	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.003	< 0.0005
Ethylbenzene	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0005	< 0.0001
m+p-Xylene	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0005	< 0.0001
o-Xylene	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0005	< 0.0001
Styrene	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0002
Tetrachloroethylene	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0005	< 0.0001
Toluene	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0002
Trans-1,2-dichloroethylene	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0005	< 0.0001
Trans-1,3-dichloropropene	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0002
Trichloroethylene	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0005	< 0.0001
Trichlorofluoromethane	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0002
Vinyl Chloride	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.001	< 0.0002

Table 8a: Surface Water Characteristics (May 3, 2010)

Date	Parameter	Surface Water Station					
		S2	S3	S4R	S5	S7	S8R
03-May-10	Velocity:	0.01	0.02	DRY	NM	0.01	NM
	Depth:	0.25	0.12		0.15	0.09	0.03
	Width:	2.10	0.90		0.30	2.10	0.25

Note: Depth and Width were measured in metres; velocity was measured in m/s.

Ponded water present at S5 and S8R. No flow.

NM: flow was insufficient to register on the flow meter

Table 8b: Surface Water Characteristics (October 25, 2010)

Date	Parameter		Surface Water Station				
			S2	S3	S4R	S5	S8R
25-Oct-10	Velocity:	m/s	NM	NM	DRY	NM	NM
	Depth:	m	0.60	0.22		0.12	0.1
	Width:	m	1.50	0.83		0.76	0.35
	Estimated Flow Rate:	m^3/s	NM	NM		NM	NM

Ponded water present at S5. No flow.

NM: Not Measured (flow was insufficient to register on the flow meter - very small flow observed)

Table 9a: Surface Water Quality Results (May 3, 2010)

			Marysville Creek			Beechwood Ditch		
			S2	S7	S3	S5	S4R	S8R
			(upstream)	(downstream)		(upstream)	(downstream)	
Reading Name	Units	PWQO				DRY	DRY	
Alkalinity mg/L			264	279	288			332
Ammonia mg/L			< 0.15	< 0.15	< 0.15			0.4
Arsenic mg/L		0.1	0.001	< 0.001	< 0.001			0.001
Barium mg/L			0.06	0.042	0.05			0.078
Benzene mg/L		0.1	< 0.0001	< 0.0001	< 0.0001			< 0.0001
Biochemical Oxygen Demand mg/L			2	3	< 2			4
Boron mg/L		0.2	< 0.02	< 0.02	0.023			0.044
Cadmium mg/L		0.0002	< 0.0001	< 0.0001	< 0.0001			< 0.0001
Chemical Oxygen Demand mg/L			81	64	49			18
Chloride mg/L			23	22	27			7
Chromium mg/L		0.1	< 0.005	< 0.005	< 0.005			< 0.005
Cobalt mg/L		0.0009	0.0006	< 0.0005	< 0.0005			< 0.0005
Colour TCU			110	93	54			9
Conductivity µS/cm			559	577	618			652
Copper mg/L		0.005	< 0.002	< 0.002	< 0.002			< 0.002
Cyanide (free) mg/L		0.005	< 0.002	< 0.002	< 0.002			< 0.002
Dissolved Oxygen mg/L			2.86	3.99	4.53			11.26
Ethylbenzene mg/L		0.008	< 0.0001	< 0.0001	< 0.0001			< 0.0001
Field Conductivity µS/cm			625	638	699			831
Field pH unitless		6.5-8.5	7.5	7.45	7.58			7.33
Field Temperature °C			18.3	19.5	17.4			17.4
Ionic Balance %			5.07	4.99	4.79			2.53
Iron mg/L		0.3	0.16	< 0.1	0.33			< 0.1
Lead mg/L		0.025	< 0.0005	< 0.0005	< 0.0005			< 0.0005
m+p-Xylene mg/L		0.03	< 0.0001	< 0.0001	< 0.0001			< 0.0001
Mercury mg/L		0.0002	< 0.0002	< 0.0002	< 0.0002			< 0.0002
Nitrate mg/L			< 0.1	< 0.1	< 0.1			1.8
Nitrite mg/L			< 0.01	< 0.01	< 0.01			0.14
o-Xylene mg/L		0.04	< 0.0001	< 0.0001	< 0.0001			< 0.0001
pH (Lab) unitless			8.3	8.4	8.3			8.3
Phenols mg/L		0.001	< 0.001	< 0.001	< 0.001			< 0.001
Phosphorus (total) mg/L		0.03	0.061	0.068	0.041			0.59
Potassium mg/L			4.4	3.1	3.4			4.7
Sodium mg/L			13	13	17			8.3
Sulphate mg/L			< 1	< 1	< 1			15
Toluene mg/L		0.0008	< 0.0002	< 0.0002	< 0.0002			< 0.0002
Total Dissolved Solids mg/L			360	380	400			410
Total Kjeldahl Nitrogen mg/L			2	1.4	1.4			1.4
Total Suspended Solids mg/L			< 1	3	6			4
Total Xylenes mg/L			< 0.0001	< 0.0001	< 0.0001			< 0.0001
Turbidity NTU			1.8	5.4	1.6			5.4
Unionized Ammonia mg/L		0.02	< 0.02	< 0.02	< 0.02			< 0.02
Zinc mg/L		0.03	< 0.01	< 0.01	< 0.01			< 0.01

Table 9b: Surface Water Quality Results (October 25, 2010)

			Marysville Creek		Beechwood Ditch		
			S2	S3	S5	S4R	S8R
			(upstream)	(downstream)	(upstream)	(downstream)	(downstream)
Reading Name	Units	PWQO				DRY	
Alkalinity	mg/L		248	250	276		253
Ammonia	mg/L		< 0.15	< 0.15	< 0.15		< 0.15
Ammonia (unionized)	mg/L	0.02	< 0.02	< 0.02	< 0.02		< 0.02
Arsenic	mg/L	0.1	< 0.001	< 0.001	< 0.001		< 0.001
Barium	mg/L		0.061	0.056	0.073		0.079
Biochemical Oxygen Demand	mg/L		< 2	< 2	< 2		< 2
Boron	mg/L	0.2	0.024	0.034	< 0.02		0.027
Cadmium	mg/L	0.0002	0.0001	< 0.0001	0.0002		< 0.0001
Calcium	mg/L		95	95	99		96
Chemical Oxygen Demand	mg/L		43	36	32		13
Chloride	mg/L		30	35	32		18
Chromium	mg/L	0.01	< 0.005	< 0.005	< 0.005		< 0.005
Conductivity	µS/cm		574	613	616		637
Copper	mg/L	0.005	< 0.002	< 0.002	0.004		< 0.002
Cyanide (free)	mg/L	0.005	< 0.002	< 0.002	< 0.002		< 0.002
Hardness	mg/L		250	260	310		280
Iron	mg/L	0.3	0.18	0.12	0.19		< 0.1
Lead	mg/L	0.025	< 0.0005	< 0.0005	< 0.0005		< 0.0005
Magnesium	mg/L		14	15	20		20
Mercury	mg/L	0.0002	< 0.0002	< 0.0002	< 0.0002		< 0.0002
Naphthalene	mg/L	0.007	< 0.0005	< 0.0005	< 0.0005		< 0.0005
Nitrate	mg/L		< 0.1	< 0.1	< 0.1		0.2
Nitrite	mg/L		< 0.01	< 0.01	< 0.01		< 0.01
Phenols	mg/L	0.001	< 0.001	< 0.001	< 0.001		< 0.001
Phosphorus (total)	mg/L	0.03	0.022	0.031	0.11		0.032
Potassium	mg/L		3.7	3.9	5.2		2.7
Sodium	mg/L		12	19	8.2		17
Sulphate	mg/L		13	21	13		63
Total Dissolved Solids	mg/L		360	392	392		392
Total Kjeldahl Nitrogen	mg/L		1.3	1	1.1		< 0.7
Total Suspended Solids	mg/L		< 1	2	18		< 1
Zinc	mg/L	0.03	< 0.01	< 0.01	< 0.01		< 0.01
Field Measured							
Estimated Flow Rate*	m^3/s		NM	NM	NM		NM
Conductivity (Field)	µS/cm		579	601	609		627
Dissoved Oxygen (Field)	mg/L		7.4	9.7	7.52		11.36
pH (Field)	unitless	6.5-8.5	7.25	6.49	7.48		7.73
Temperature (Field)	°C		7.70	7.24	8.03		8.80

* NM: not measured (negligible flow observed)

Table 10a: Subsurface Gas Monitoring Results (May 5, 2010)

Gas Monitor	Location	Reading (ppm)
GM1	North of garage area, south of waste mound	40
GM3	North-east corner of waste mound	30
GM4-1	South-east corner of waste mound	35
GM4-2		30
GM5	North-west corner of waste mound	0
GM6	North of waste mound	15

Table 10b: Subsurface Gas Monitoring Results (October 25, 2010)

Gas Monitor	Location	Reading (ppm)
GM1	North of garage area, south of waste mound	130
GM3	North-east corner of waste mound	0
GM4-1	South-east corner of waste mound	0
GM4-2		0
GM5	North-west corner of waste mound	130
GM6	North of waste mound	0

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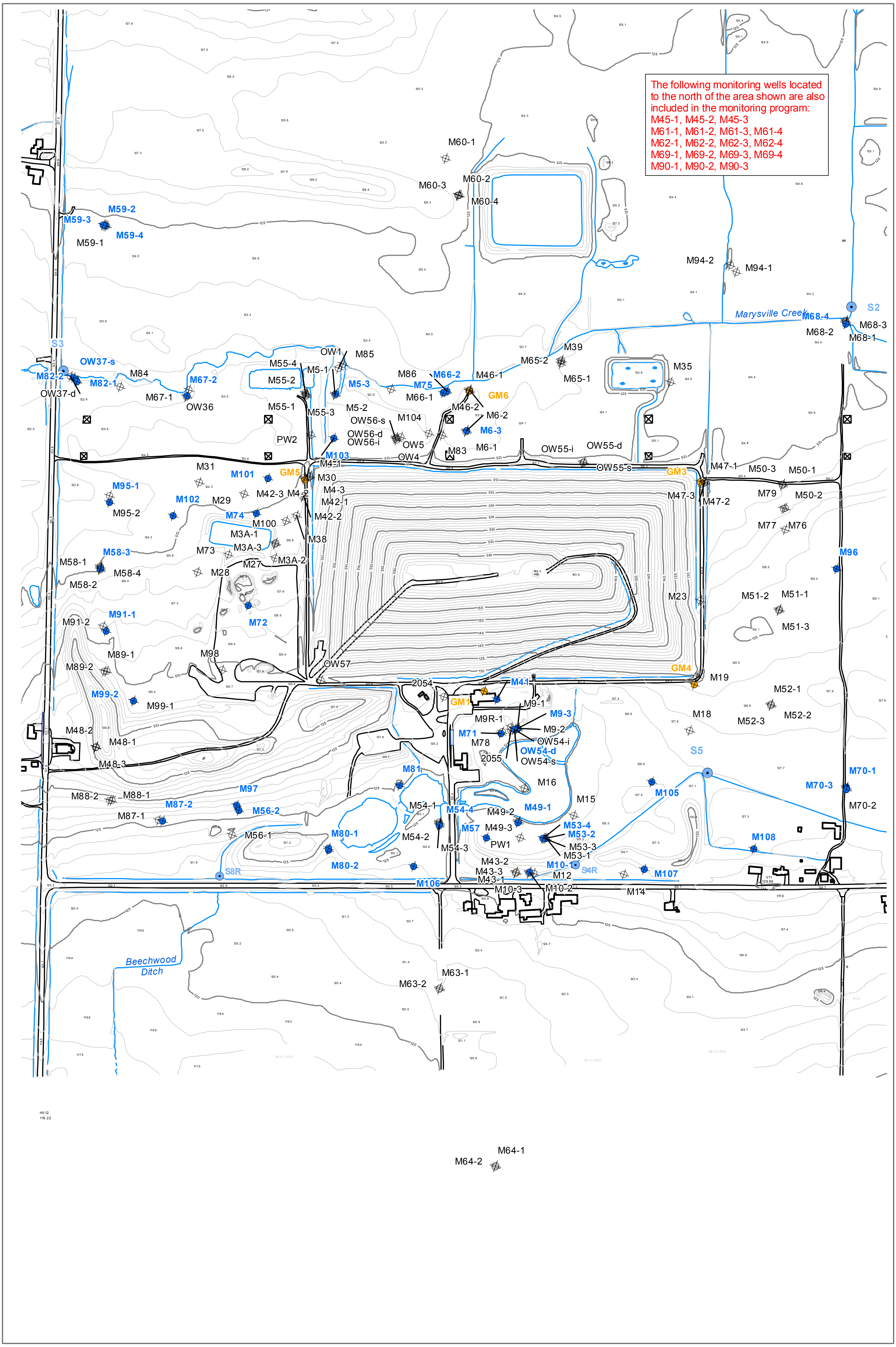

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Figure 1a: Site Plan and Monitoring Locations (Spring 2010)

M53-1	Monitoring Well Used to Measure Water Level (Not Sampled)
M53-2	Monitoring Well Used to Measure Water Level and Sampled for Chemistry
GM1	Gas Monitoring Well
S2	Surface Water Monitoring Location

Project : K-B8578-00-04
Data Source: WM Canada, WESA, HPA Ltd. Base Mapping 2009
Date: March 2011

0 12.5 25 50 75 100
Metres

Prepared by: WESA Geomatics

Units: UTM NAD 83 Zone 18

Scale: 1:5000

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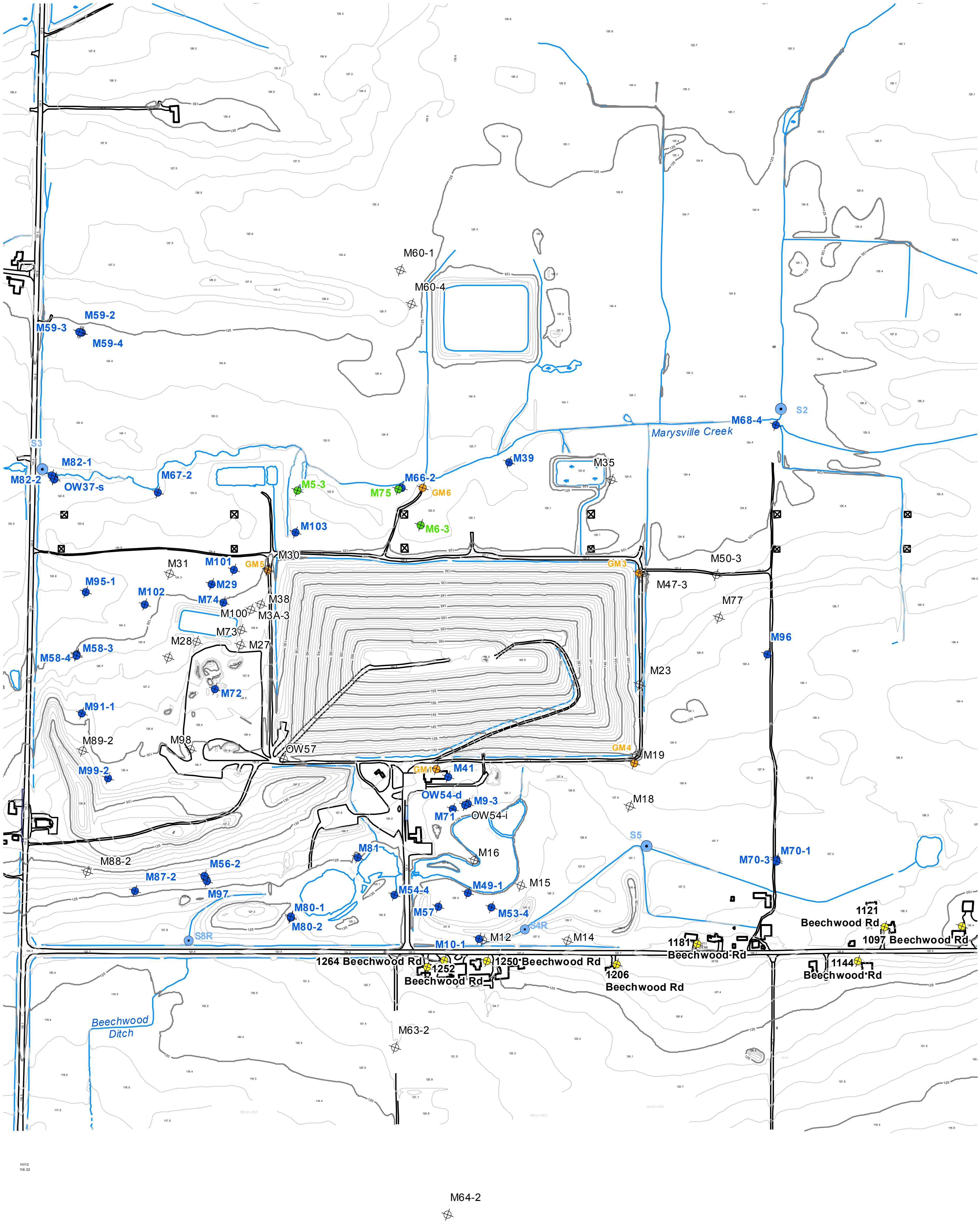

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Figure 1b: Site Plan and Monitoring Locations (Fall 2010)

M35	Monitoring Well Used to Measure Water Level (Not Sampled)
M53-4	Monitoring Well Used to Measure Water Level and Sampled for Chemistry
M5-3	Monitoring Well Sampled for Chemistry (Not used for Water Levels)
1097 Beechwood	Domestic Water Supply Well Sampled for Chemistry
GM1	Gas Monitoring Well
S2	Surface Water Monitoring Location

Project : K-B8578-00-04
Data Source: WM Canada, WESA, HPA Ltd. Base Mapping 2009
Date: March 2011

0 12.5 25 50 75 100
Metres

Prepared by:
WESA Geomatics

Units:
UTM NAD 83 Zone 18
Scale: 1:6000

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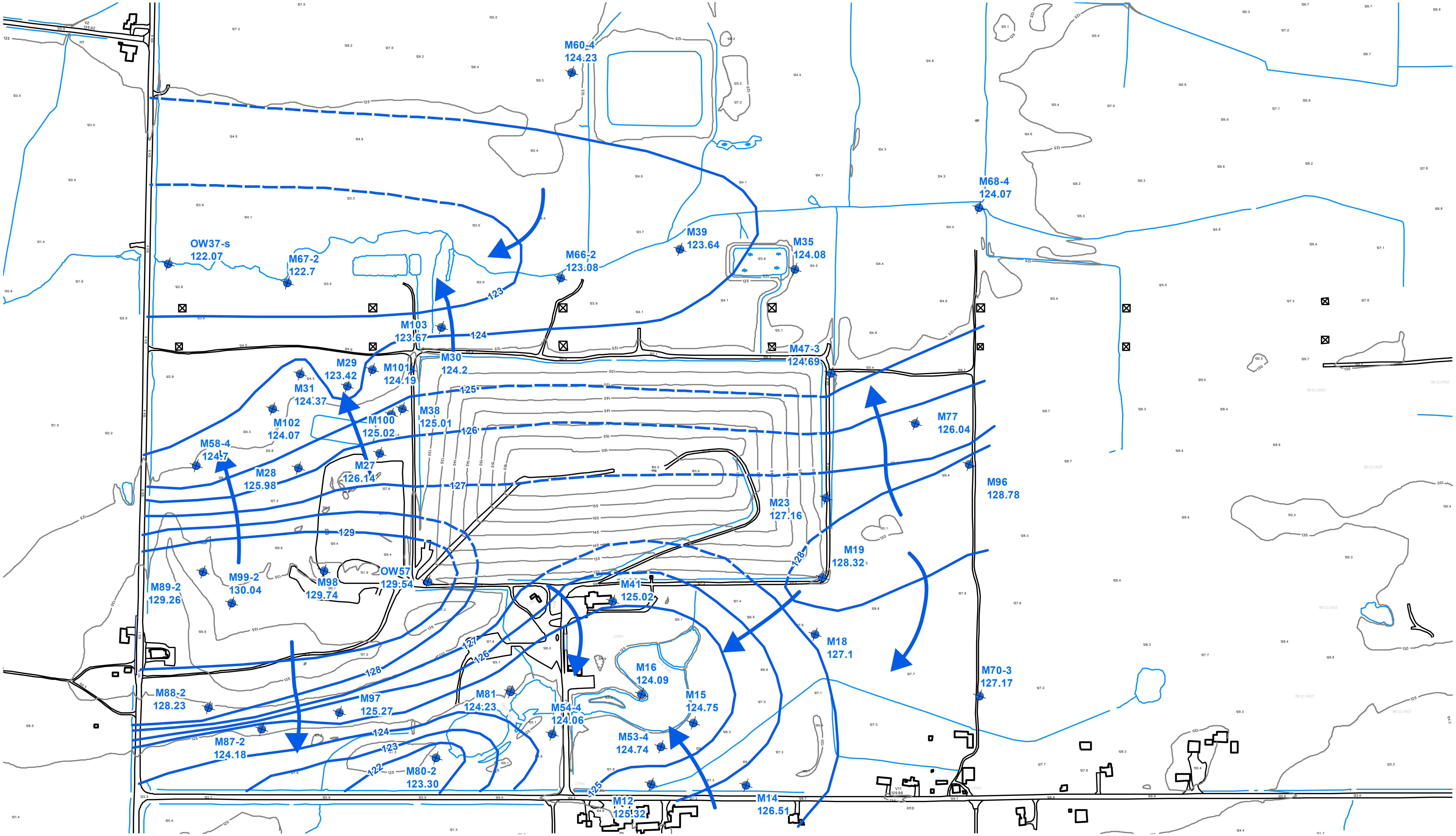

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Figure 2a:
Shallow Groundwater Flow Zone Potentiometric Surface - April 28, 2010

M58-4 Shallow Groundwater Zone Elevation Monitor
Topographic Contour Lines
Surface Water
Hydro Tower
Potentiometric Surface (masl)
Inferred Groundwater Flow Direction

Project : K-B8578-00-04
Data Source: WM Canada, WESA, HPA Ltd. Base Mapping 2009
Date: March 2011

Prepared by:
WESA Geomatics

Units:
UTM NAD 83 Zone 18

Scale: 1:5000

0 12.5 25 50 75 100 Meters

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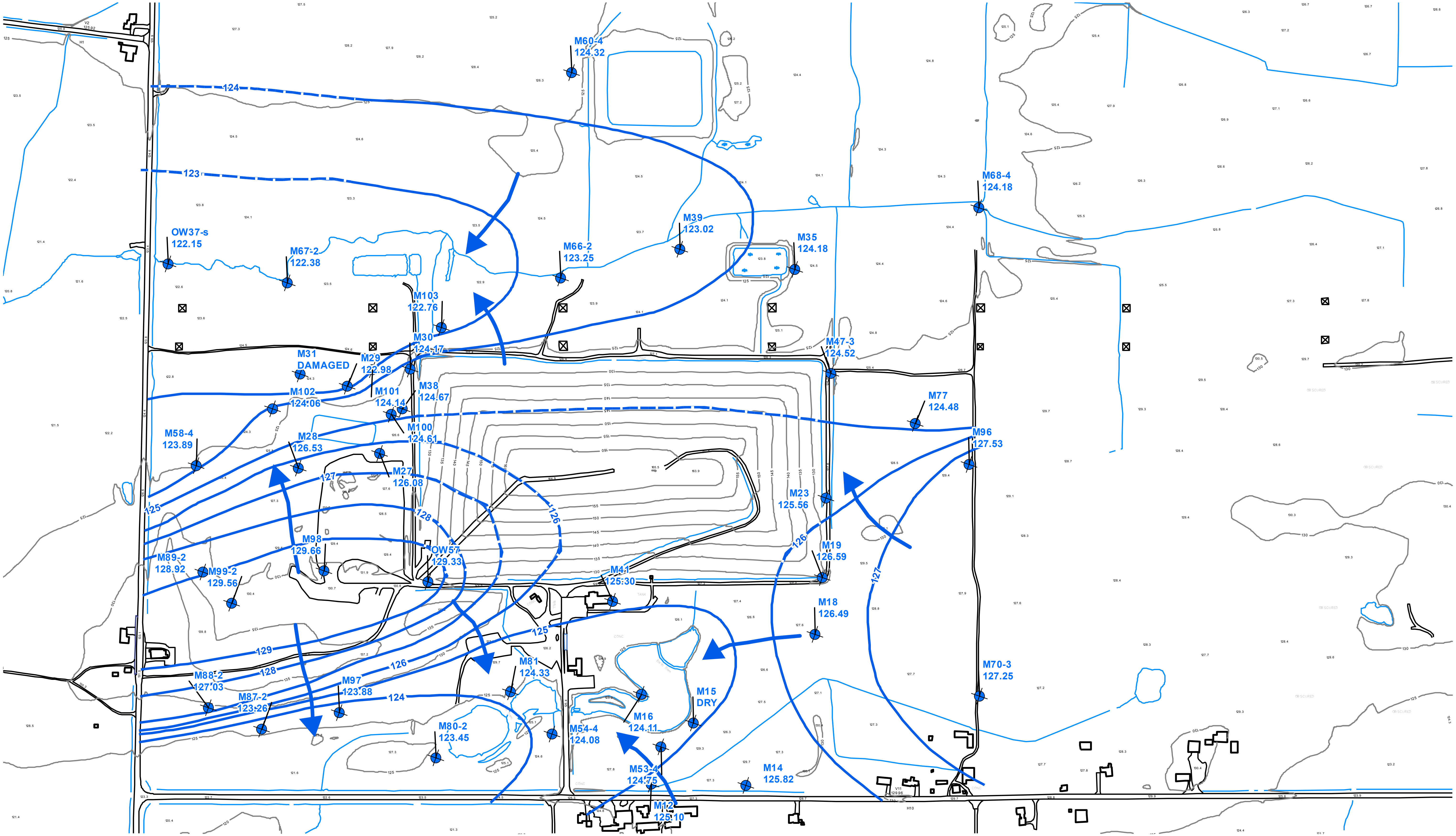

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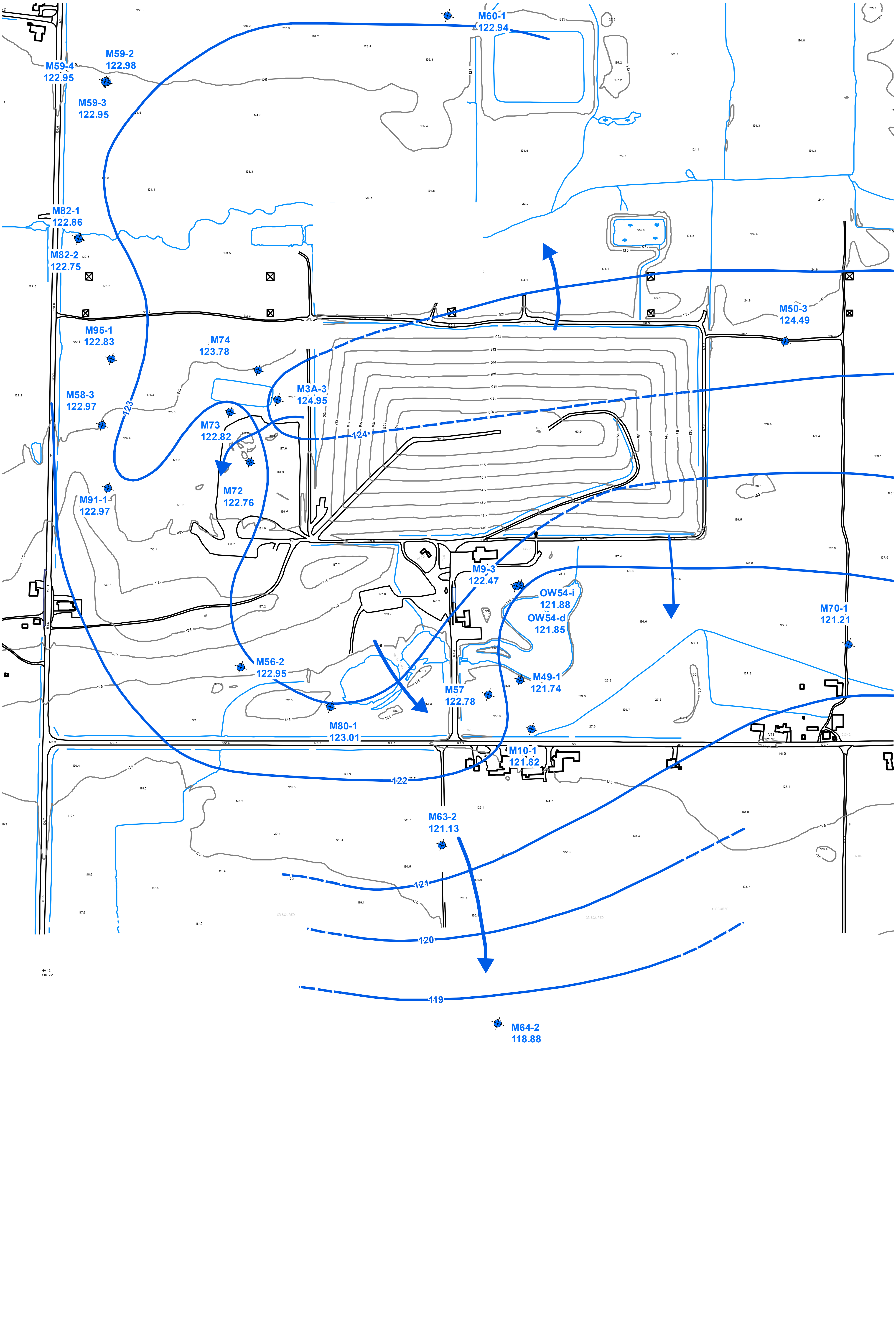
M58-4 Shallow Groundwater Zone Elevation Monitor
Topographic Contour Lines
Surface Water
Hydro Tower
Potentiometric Surface (masl)
Inferred Groundwater Flow Direction

Project : K-B8578-00-04
Data Source: WM Canada, WESA, HPA Ltd. Base Mapping 2009
Date: March 2011

0 12.5 25 50 75 100
Meters

Prepared by:
WESA Geomatics
Units:
UTM NAD 83 Zone 18
Scale: 1:5000

Figure 2b:
Shallow Groundwater Flow Zone Potentiometric Surface - October 25, 2010



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2010 ANNUAL MONITORING REPORT

M58-3 Intermediate Groundwater Zone Elevation Monitor
Topographic Contour Lines
Potentiometric Surface (masl)
Inferred Groundwater Flow Direction
Hydro Tower
Surface Water

Project : K-B8578-00-04
Data Source: WM Canada, WESA, HPA Ltd. Base Mapping 2009
Date: March 2011

30 15 0 30 60
Meters

Prepared by:
WESA Geomatics

Units:
UTM NAD 83 Zone 18

Scale: 1:5000

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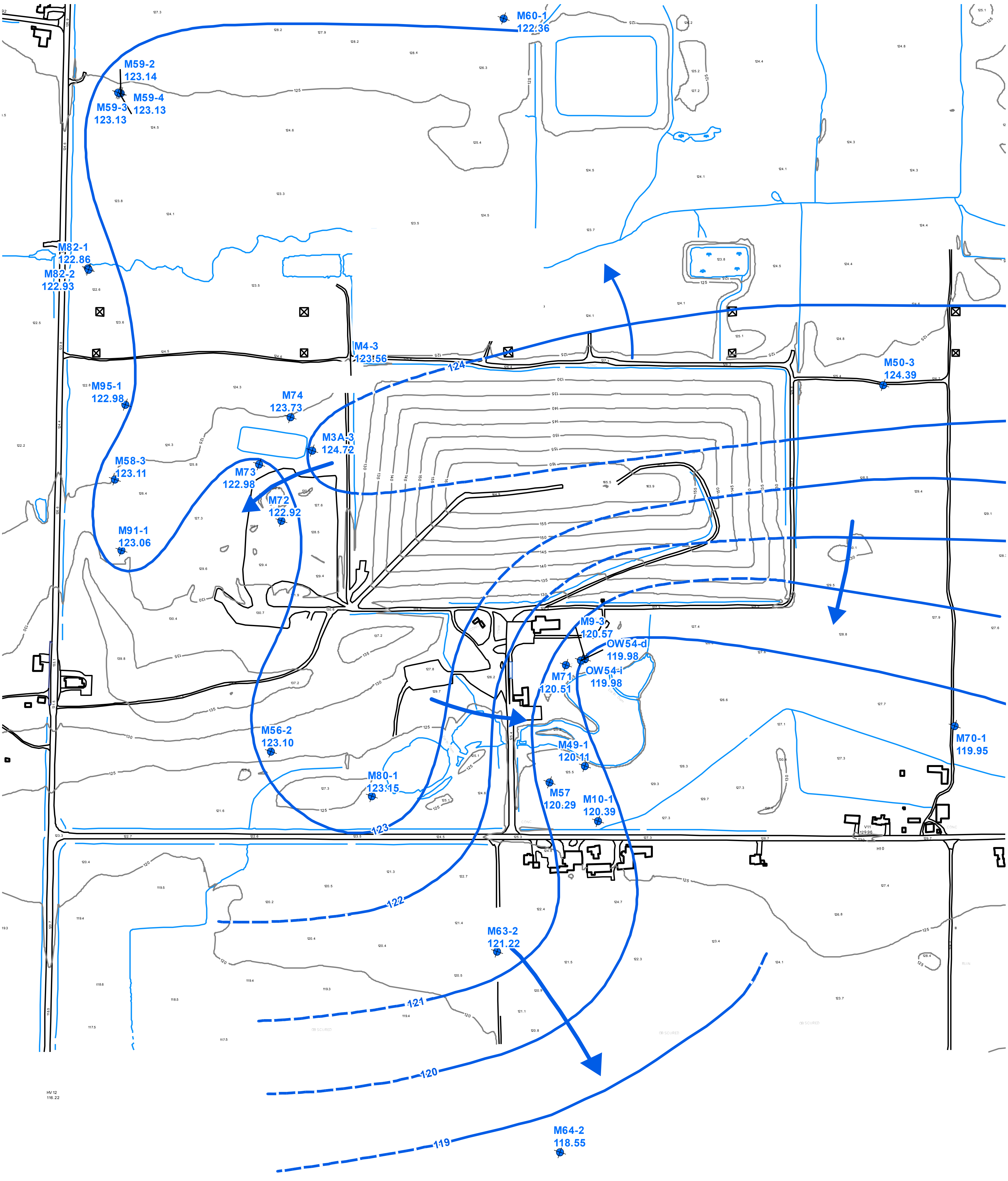
WM
WASTE MANAGEMENT

Figure 3a:
Intermediate Bedrock Groundwater Flow Zone Potentiometric Surface - April 28, 2010



WASTE MANAGEMENT
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Figure 3b:
Intermediate Bedrock Groundwater Flow Zone Potentiometric Surface - October 25, 2010

M58-3 Intermediate Groundwater Zone Elevation Monitor
Topographic Contour Lines
Potentiometric Surface (masl)
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20 10 0 20 40
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