

German Mills Meadow and Natural Habitat (Former Sabiston Landfill) Site - Status Update

General Committee February 3, 2014

Asset Management Department

AGENDA

- Site Information**
- Previous Council Resolution**
- Evaluation of Water Quality Impacts**
- Applicable Regulatory Requirements**
- Why Additional Monitoring Required**
- Groundwater Well Installation**
- Next Steps**
- Recommendations**

Site Information

- **Located South of John Street, West of Leslie Street**
- **Landfill is 10 hectares; East Fill Area is 16 hectares**
- **Existing Monitoring Program includes:**
 - Gas monitoring at North, West, and South boundaries
 - Surface water monitoring - German Mills Creek (7 stations)
 - Groundwater monitoring
 - o 10 locations with 10 wells
 - o 2 piezometers adjacent to the creek

Previous Council Resolution

- **June 26, 2012 - Council approved the following motion**
 - Resolution (6): “ That the following paragraph be referred to staff for a report to the General Committee in Fall, 2012 on an implementation plan and the impact of same on wildlife and vegetation:
 - That a Leachate Collection System be installed to intercept discharge to German Mills Creek and protect the Creek from contamination and where possible, this System should be installed and operated in a manner that minimizes disruption to existing wildlife and vegetation”
- **November 20, 2012 – Markham staff report indicated the preferred alternative of leachate management is the establishment of a contamination attenuation zone (CAZ)**

Previous Council Resolution (Cont'd)

- **Nov 20, 2012 - Council approved the following recommendation:**
 - Resolution (4): That the funding available in account 750-101-5399-7028 “Settlers Park Landfill Site Management” of \$367,776 be re-allocated to fund the additional rehabilitation works identified in the report;
- **Rehabilitation works identified in the report:**
 - Backup generator and motor
 - Installation of additional groundwater monitoring wells (19 wells at 8 locations) to delineate the CAZ – **later reduced to 11 wells at 8 locations**
 - Groundwater plume delineation study
 - Monitoring works by Tervita Corporation
 - Installation of signage

Evaluation of Water Quality Impacts

- **Water quality samples collected since 2003**
- **Compared water quality samples**
 - Background / up-gradient of the landfill (OW-7)
 - Within the landfill and east-fill (OW-10, OW2-18, OW3-18)
 - Adjacent to German Mills Creek (OW5-6, OW6-6, OW-8)
 - Down-gradient of the landfill (OW-9, OW-11 and OW-12)
- **Results of monitoring program**
 - Landfill still producing leachate
 - Groundwater quality down-gradient has higher concentrations of leachate contaminants compared to background/up-gradient levels

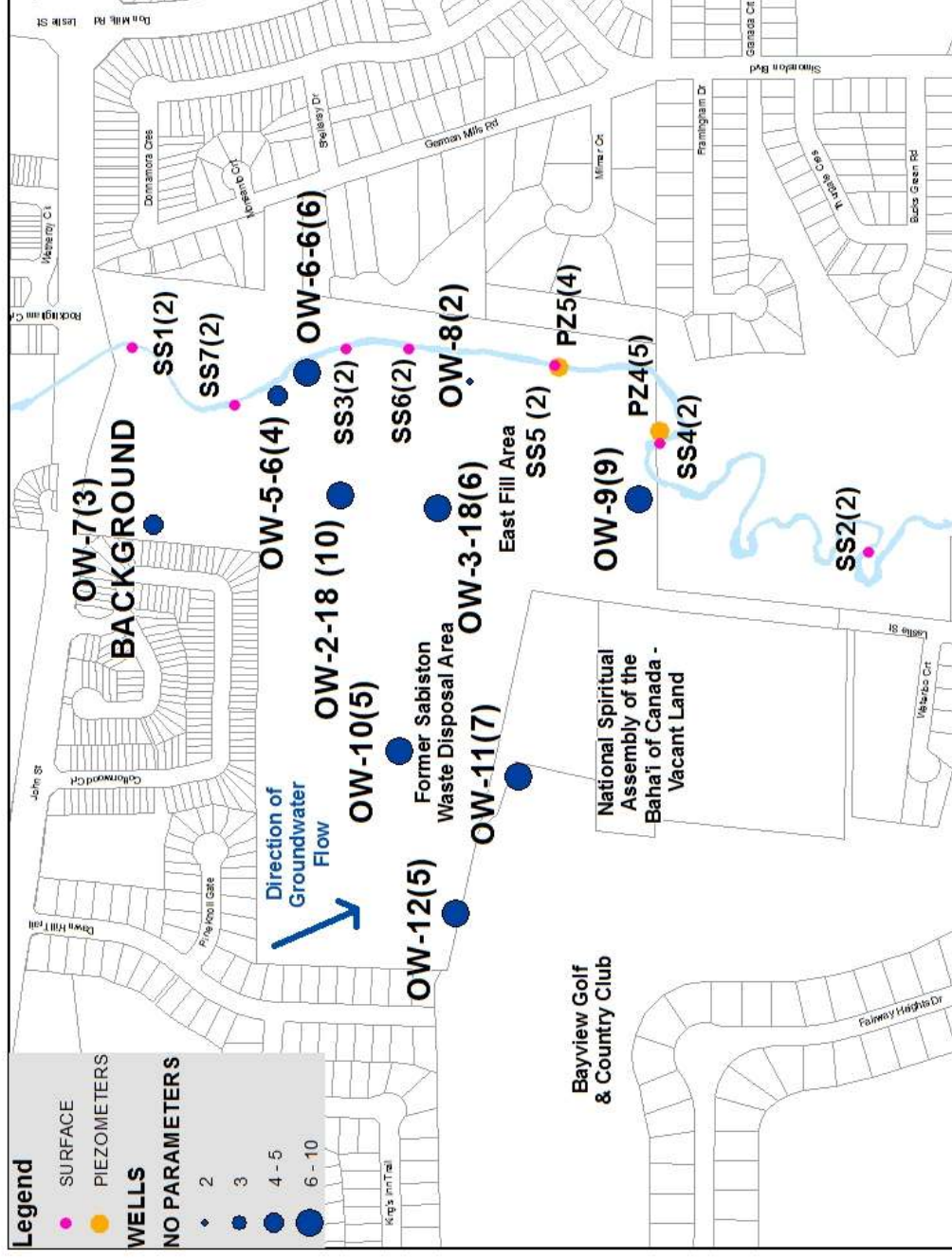
Evaluation of Water Quality Impacts (cont'd)

- **Results of monitoring program**
 - Contaminants exceeding the Ontario Drinking Water Quality Standard (ODWQS) and the background levels at down-gradient wells
 - o arsenic, chloride, total dissolved solids (TDS) , iron, sodium, dissolved organic compounds (DOC), vinyl chloride, tri-chloroethene (TCE) and di-chloroethene (DCE)
 - Unknown how far the groundwater impacts have migrated down-gradient of the Site or deeper into the aquifer

Evaluation of Water Quality Impacts (Cont'd)

Figure shows direction of groundwater flow, and size of the “blue dot” showing number of parameters that exceeded the ODWQS or PWQOs Standards

OW-10(5) = 5 parameters



Applicable Regulatory Requirements

- **The water quality monitoring/management program at the Former Sabiston Landfill Site is designed to ensure the City remains in compliance with the following regulatory requirements:**
 - Ontario Water Resources Act (OWRA) and Safe Drinking Water Act (SDWA)
 - o Ontario Drinking Water Quality Standards (ODWQS)
 - o Provincial Water Quality Objectives (PWQOs)
 - Ontario Environmental Protection Act (OEPA)
 - o O. Reg. 153/04 – Soil, Groundwater and Sediment Site Condition Standards (SCS)
 - o O. Reg. 232/98 – Landfill Standards Guideline
 - Reasonable Use Concept (RUC) Policy – Ministry of the Environment
 - Canadian Fisheries Act

Why Additional Monitoring Required

DUE DILIGENCE:

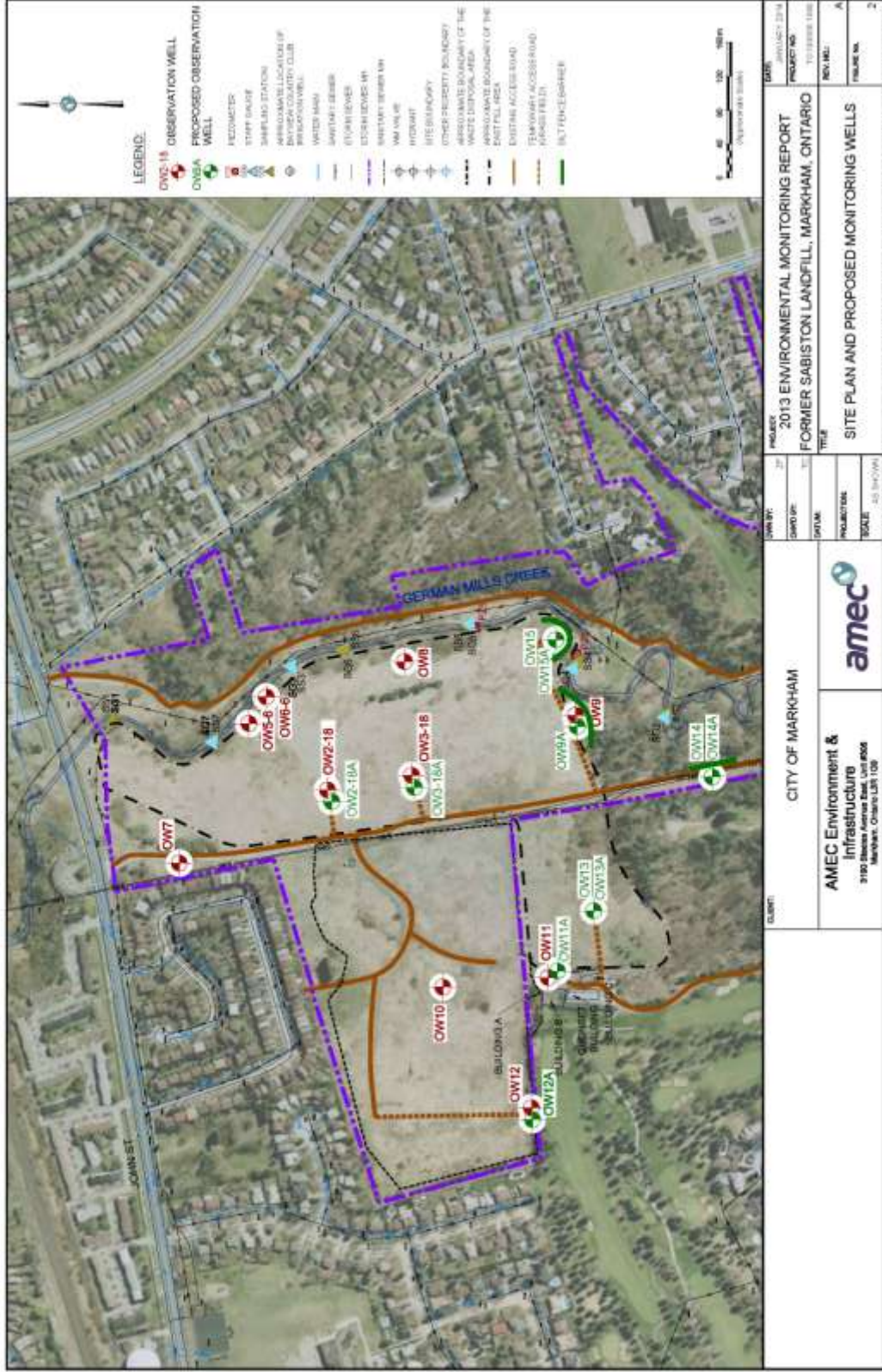
- Typical process in brownfield site management – continues until the boundaries of the contamination plume are identified
- Gaps in existing monitoring: depth and location (down-gradient)
- Determine full extent of leachate impacts to the aquifer and to the down-gradient receptors
- Evaluate risk to down-gradient receivers and assess if mitigation measures are required
- Continue to meet applicable regulatory requirements

Groundwater Well Installation

- **Installation of 11 new monitoring wells at 8 locations**
 - Assess groundwater conditions down-gradient and in the aquifer
 - Installation period: 2 to 3 weeks
 - Affected area is only the path to the well and the well size (1 m²)
 - Noise similar to construction activities
- **Ministry of Natural Resources (MNR) “Letter of Advice” has been received: deadline to complete is April 1, 2014**
- **Toronto and Region Conservation Authority (TRCA) permit has been received**

Groundwater Well Installation (Cont'd)

(Location Map)



Groundwater Well Installation (Cont'd)

- **Installation work will be monitored by AMEC & a Biologist from Dillon Consulting in accordance with the established Environmental Monitoring Management Plan (EMMP)**
- **Sensitive to protection of the natural habitat:**
 - Proposed locations are in grassed areas (no trees or shrubs clearing)
 - Installation to take place outside of ground bird nesting period
 - Consideration to sensitive bird species: Eastern Meadowlark and Bobolink
 - Ensure grass seed mix is suitable, properly laid and germinates
 - Work will be completed in accordance with requirements of the Toronto and Region Conservation Authority (TRCA) and Ministry of Natural Resources (MNR)
 - Installation of wells will have no significant impact on the surrounding natural environment

Groundwater Well Installation (Cont'd)



Next Steps

- **Communication to public**
- **Complete additional well installations prior to Permit expiry - April 1, 2014**
- **Report results of additional monitoring after one-year installation to Council and Liaison Committee**

Recommendations

- **THAT the presentation entitled “German Mills Meadow and Natural Habitat (Former Sabiston Landfill) Site - Status Update” be received for information**