



December 16, 2015

Robert Kelly  
Chief Building Official  
Township of Puslinch  
RR 3, 7404 Wellington Road 34  
Guelph, Ontario  
N1H 6H9

**Re: Proposed Spencer Pit  
Part of Lots 14-16, Lots 17 and 18, Concession B, Township of Guelph-Eramosa**

Dear Mr. Kelly,

Further to your letter dated June 20, 2014, we are pleased to provide the attached response from our hydrogeologist. Based on his recommendations, we have revised the rehabilitation plan, revised the monitoring recommendations and added notes on the operational plan to require a minimum of 1m of overburden over the bedrock in refuelling areas (NOTE 25), recycling areas (NOTE 10) and scrap storage areas (NOTE 24)

We trust that the information provided adequately addresses your concerns. If you have any questions, please do not hesitate to contact the undersigned.

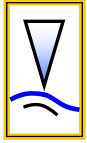
Sincerely,

HARRINGTON McAVAN LTD.

A handwritten signature in black ink, appearing to read 'Glenn D. Harrington'.

Glenn D. Harrington, OALA, FCSLA  
Principal

Enclosures - 2  
GDH/sh



December 14, 2015

Glenn Harrington  
Harrington McAvan Ltd..  
6882 14th Avenue,  
Markham, Ontario  
L6B 1A8

Dear Mr. Harrington:

**RE: Hydrogeologic Assessment Peer Review Comments, June 20, 2014  
GM BluePlan on behalf of the Township of Puslinch.**

This letter provides additional information and discussion in response to review comments provided by GM BluePlan Engineering Limited on behalf of the Township of Puslinch in a letter dated June 20, 2014 regarding the proposed Spencer Pit.

The review provided the following recommendations:

- *To complete a door-to-door survey at properties to the north and west of the site that have frontage along Hespeler Road/Hwy 124 and any dwellings identified within 120 m of the Site. This information should be used to update the area well search and identify the potential for unregistered shallow/dug wells in the area.*
- *To update the groundwater elevation and supporting mapping by:*
  - *Confirming geodetic elevation (as opposed to an assumed elevation at ground surface),*
  - *Updated contours based on elevations presented for BH3,*
  - *Inclusion of known surface water level elevations and surface water features,*
  - *Presentation of high groundwater elevation data and bedrock surface elevation at each borehole (data point).*
- *To update mitigative measures to include consideration of operations in areas where bedrock exposed through extraction processes.*
- *To update the water level monitoring program to include data collection over the operational period of the pit.*

With regard to the door to door survey, we concur with the GM BluePlan conclusion that *it is reasonable to expect that the proposed aggregate operation will not impact local bedrock water supply wells*. By extension, as the proposed extraction is above water table, because water table at the site is within the bedrock, and, no downgradient residences exist (or could be expected in the future), impacts to any water wells (bedrock or overburden) in the wider area would also not be expected. A door to door survey is not typically required for above water table extraction applications, and in this setting is not justified. The comments indicate that if a Permit To Take Water (PTTW) is required the door to door survey would likely be necessary. Therefore we recommend that a note be added to the Site Plan that upon License approval a door to door water well survey should be completed as required by MOECC as part of any Permit To Take Water application at the site.

A geodetic survey of the monitoring locations was completed in July 2014 relative to an MTO elevation monument (station 0011916u87F) located at the site. The updated elevations are as follows:

Location	Ground Surface Elevation (mASL)	Top of Well Elevation (mASL)	Bedrock Elevation (mASL)	Maximum Water Level Elevation (mASL)	Bedrock Surface to Maximum Water Level (m)
BH1	318.18	319.10	312.24	311.30	0.93
BH2	313.77	314.73	303.40	301.76	1.65
BH3	307.93	308.88	303.97	300.20	3.76
Barn Well	315.99	316.99	306.84	304.05	2.80

In addition, groundwater level monitoring has continued at the site. In June 2015 dataloggers were installed at each location and programmed to collect measurements at 4 hour intervals. The updated monitoring results are summarized on the attached table and hydrograph.

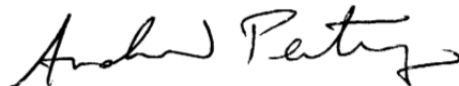
An updated high water table contour map, representative of May 2014 conditions, is also attached for reference. As requested the updated water table map includes surface water elevations for the creek at the railway crossing (301 mASL), wetland within the river valley floor (294.5 mASL), east and west ponds within the Carmeuse Quarry (292 and 301 mASL respectively – see report page 5, last paragraph). We note that surface water elevations at the river east of the quarry ponds will not affect conditions at the site to any significant degree. High water table elevations as compared to bedrock elevations, are provided in the table above. The overall water table pattern is similar to the original interpretation, however the maximum water table elevations are higher based on the continued monitoring and revised reference elevations. Appropriate adjustments to the proposed maximum extraction elevations have been made on the Site Plan.

Mitigative measures related to bedrock exposure are included within the appropriate Site Plan notes.

In response to comments received by both GRCA and local residents the groundwater monitoring program now includes routine water level measurements, both manually and using dataloggers (already installed), for the life of the pit. Datalogger measurements will be obtained at a 4 hour interval and manual measurements obtained on a quarterly basis. Annual monitoring reports will be provided to MNRF, GRCA and the Township.

If you have any questions, or require further information, please do not hesitate to contact us.

Sincerely,

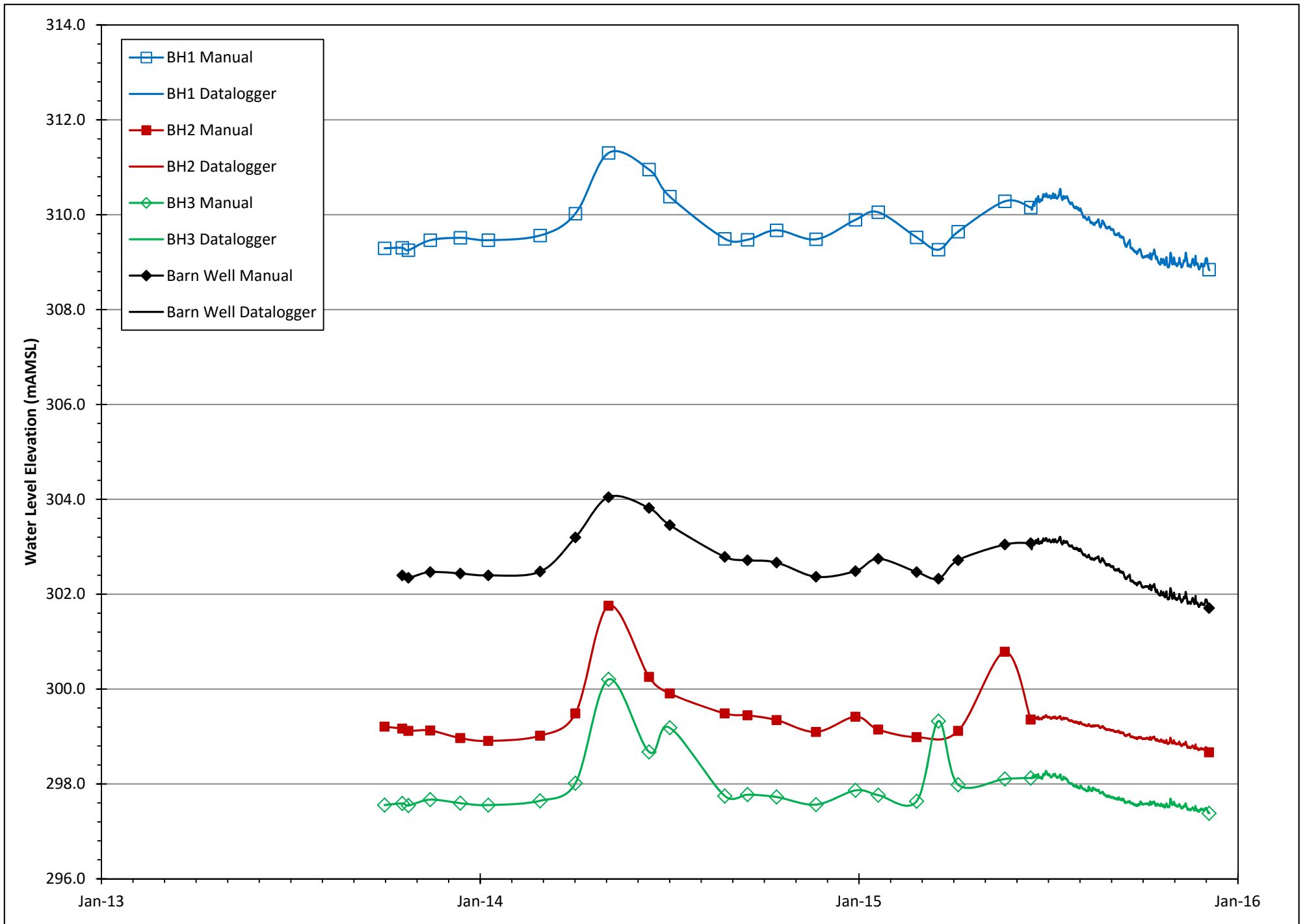


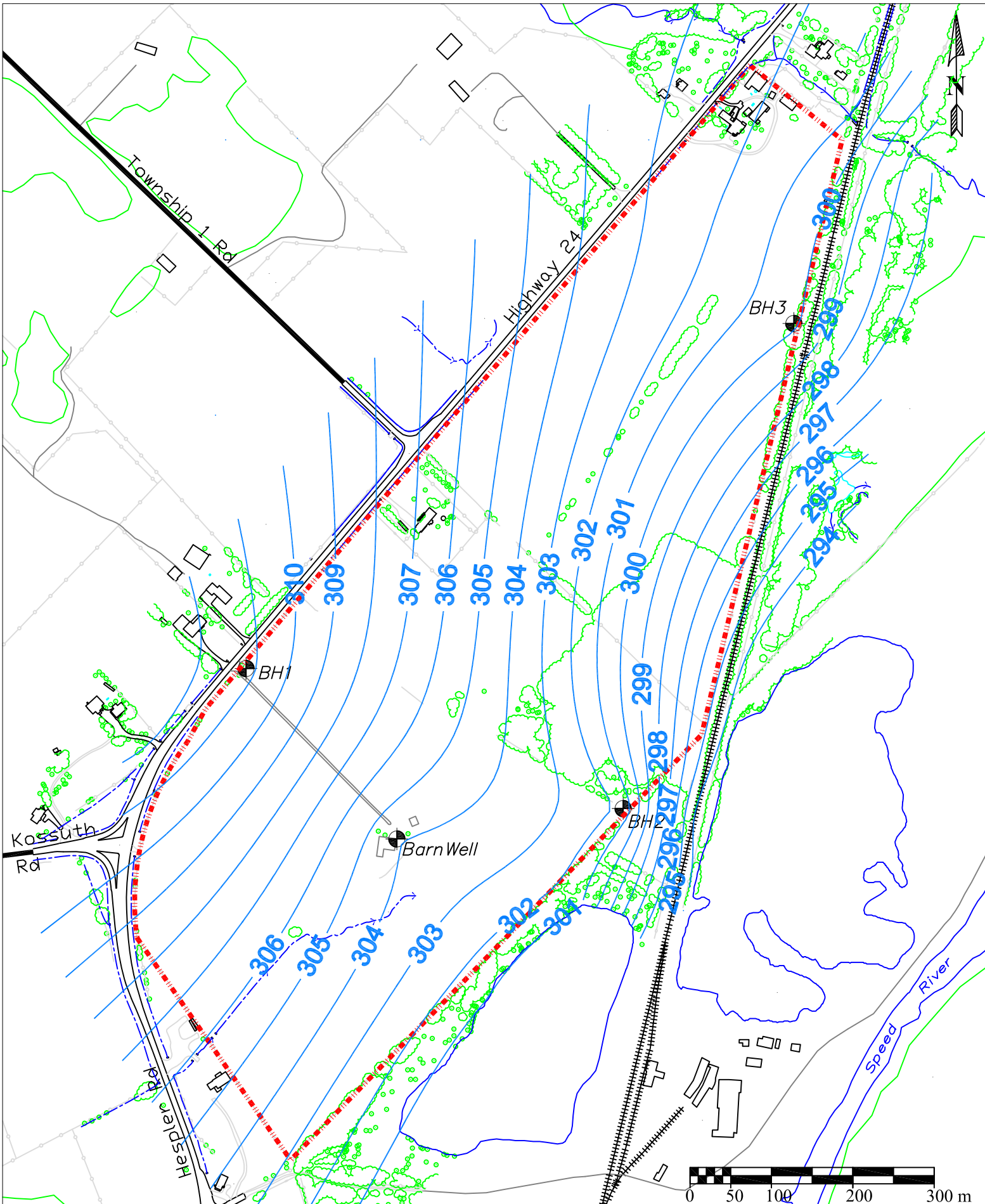
Andrew Pentney, P.Geol.  
Hydrogeologist

Attached: Manual Water Level Monitoring Summary  
Water Level Monitoring Hydrograph Update  
Updated High Water Table Contours

Date	Water Level Elevation (mASL)			
	BH1	BH2	BH3	Barn Well
1-Oct-13	309.29	299.21	297.55	#N/A
18-Oct-13	309.30	299.17	297.59	302.40
24-Oct-13	309.25	299.12	297.54	302.35
14-Nov-13	309.46	299.13	297.67	302.47
13-Dec-13	309.51	298.97	297.59	302.44
9-Jan-14	309.46	298.91	297.55	302.40
28-Feb-14	309.56	299.02	297.64	302.48
3-Apr-14	310.02	299.49	298.01	303.20
5-May-14	311.30	301.76	300.20	304.05
13-Jun-14	310.95	300.26	298.67	303.82
3-Jul-14	310.38	299.91	299.18	303.46
25-Aug-14	309.49	299.49	297.74	302.79
16-Sep-14	309.47	299.45	297.77	302.72
14-Oct-14	309.67	299.35	297.72	302.67
21-Nov-14	309.48	299.10	297.56	302.37
29-Dec-14	309.89	299.42	297.86	302.49
20-Jan-15	310.05	299.15	297.76	302.75
26-Feb-15	309.52	298.99	297.63	302.47
19-Mar-15	309.26	#N/A	299.32	302.33
7-Apr-15	309.64	299.12	297.98	302.72
22-May-15	310.28	300.79	298.10	303.05
16-Jun-15	310.15	299.36	298.12	303.08
5-Dec-15	308.84	298.67	297.38	301.71

notes:  
mASL = metres above mean sea level

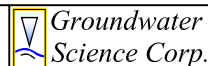




— projected water table contour (mAMSL)

modified from: OBM mapping  
 UNDER LICENSE, WITHOUT PREJUDICE OR ENDORSEMENT,  
 FROM THE QUEEN'S PRINTER OF ONTARIO

December 2015  
 Scale: as shown



### Updated Water Table Contours

Tri City Lands Ltd.  
 Proposed Spencer Pit