



Project No. 131-15683-00

May 31, 2013

Mr. Bruno Giordano
Vicdom Sand & Gravel (Ontario) Ltd.
P.O. Box 1359
Uxbridge, Ontario
L9P 1N6

**Re: Groundwater Water Table Elevation
Proposed Utica Pit – Utica**

Dear Sirs:

We are pleased to submit this letter to provide the anticipated high water table elevation for the groundwater table at the proposed Utica Pit. A Site Plan for the property located at 3900 Lake Ridge Road is presented in Figure 1.

A. Summary of Wells

On April 24, 2013, two wells were located on the property. One well designated as DW-1 is used for domestic consumption and is located approximately 4.9 metres (m) west of the northwest corner of the house. The well casing is six inches in diameter, which is indicative of a drilled well. A Ministry of the Environment (MOE) water well record identifies the well as #4605678 per the attached summary. Based on the summary the well is 42.7 m deep and encountered the following soil units

SOIL TYPE	DEPTH (m bgs)
Brown Clay	0 – 1.5
Brown to Yellow Gravel and Sand	1.5 – 29.0
Yellow to Blue Clay	29.0 – 39.6
Brown Sand	39.6 – 42.7 (Base of Well)

NOTES: 1) 'm bgs' indicates metres below ground surface

Water was detected during drilling in December 1973 at a depth of about 29 m below ground surface (mbgs) and a well screen was installed from 41.4 m to 42.7 m bgs.

The second well designated as MW13-1 was installed on the northern edge of the property about 120 m west of the paved portion of Lake Ridge Road. An MOE water well record identifies the well as #7187320 per the attached summary. The summary corresponds to Well Tag No.

A006365, which is detailed in the attached well record. Based on the well record the well is 40 m deep and encountered the following soil units.

SOIL TYPE	DEPTH (m bgs)
Sand and Gravel	0 - 40 (Base of Well)

NOTES: 1) 'm bgs' indicates metres below ground surface

The well screen was installed from 37 m to 40 m bgs.

B. Water Table Elevation

The elevations of the two wells were surveyed to a datum located at the base of the second hydro pole west of Lake Ridge Road along the northern property boundary. Based on elevation contours provided by Skelton Brumwell & Associates, the elevation of the base of the hydro pole is about 346 m asl.

The groundwater depth and elevation for each well is provided below. It is noted that the water level likely represents the high water table level as the level was measured during the spring on April 24, 2013, shortly after the spring snowmelt and a period of precipitation.

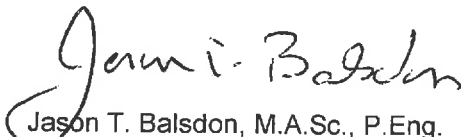
WELL DESIGNATION	TOP OF CASING (m asl)	DEPTH TO WATER TABLE (mbgs)	WATER TABLE ELEVATION (m asl)
DW-1	346.48	25.41	321.07
MW13-1	347.21	25.49	321.72

NOTES: 1) 'm asl' indicates metres above sea level
2) 'm bgs' indicates metres below ground surface

It is noted that the depth to water table will vary across the property owing to differences in the elevation of the water table and of ground surface. Based on a maximum water table elevation of 321.72 m asl and a 1.5 m separation between the high water table and the base on an above water table pit, the base of the pit could be located at an elevation of about 323.22 m asl.

We trust that this letter provides sufficient information for your requirements. If you have any questions, please call us.

Yours truly,
GENIVAR Inc.


Jason T. Balsdon, M.A.Sc., P.Eng.
Director, Environment

JTB:nah



LEGEND

MW13-1

WELL LOCATION AND DESIGNATION



MAP SOURCE:
PETER L. BRUMWELL, CONCEPT PLAN, PROJECT NUMBER 12-2850,
FEBRUARY 2015.

SITE PLAN

HYDROGEOLOGICAL ASSESSMENT
PROPOSED UTICA PIT
For Vicdom Sand & Gravel (Ontario) Ltd.

DATE: MAY 2015	SCALE: 1:3000
PROJECT: 131-15683-00 105	FILE NO.: 131-15683-00 105-01-SP
FIGURE 1	



Well ID Number: 4605678

Well Audit Number: none

Well Tag Number: none

*This table contains information from the original well record and any subsequent updates.***Well Location**

<i>Address of Well Location</i>	<i>Township</i>	<i>Lot</i>	<i>Concession</i>
not available	Uxbridge Township (Uxbridge)	015	CON 08
<i>County/District/Municipality</i>	<i>City/Town/Village</i>	<i>Province</i>	<i>Postal Code</i>
DURHAM		ON	n/a
<i>UTM Coordinates</i>	<i>Municipal Plan and Sublot Number</i>	<i>Other</i>	
NAD83 — Zone 17			
Easting: 654514.9			
Northing: 4880573			

Overburden and Bedrock Materials Interval

<i>General Colour</i>	<i>Most Common Material</i>	<i>Other Materials</i>	<i>General Description</i>	<i>Depth</i>	
				<i>From</i>	<i>To</i>
BRWN	CLAY	STNS		0 ft	5 ft
BRWN	GRVL			5 ft	43 ft
YLLW	GRVL	BLDR		43 ft	55 ft
YLLW	GRVL			55 ft	63 ft
BRWN	SAND			63 ft	95 ft
YLLW	CLAY			95 ft	120 ft
BLUE	CLAY			120 ft	130 ft
BRWN	SAND			130 ft	140 ft

Annular Space/Abandonment Sealing Record Results of Well Yield Testing

<i>Depth</i>	<i>Type of Sealant Used</i>	<i>Volume</i>	<i>Draw Down</i>	<i>Recovery</i>
<i>From To</i>	<i>(Material and Type)</i>	<i>Placed</i>	<i>After test of well yield, water was</i>	<i>Time Water (min) level</i>
			CLEAR	
			<i>If pumping discontinued, give reason</i>	SWL95 ft
				1
			<i>Pump intake set at</i>	2
				3
			<i>Pumping Rate</i>	4
			9 GPM	
			<i>Duration of Pumping</i>	5
			4 h:0 m	10
			<i>Final water level</i>	15
			115 ft	15 95 ft
			<i>If flowing give rate</i>	20
				25
			<i>Recommended pump depth</i>	30
			120 ft	30 95 ft
			<i>Recommended pump rate</i>	40
			7 GPM	
			<i>Well Production</i>	45
			BAILER	45 95 ft
			<i>Disinfected?</i>	50
				60
				60 95 ft

Method of Construction Well Use
 Table Tool Domestic

Status of Well

Water Supply

Construction Record - Casing

<i>Inside Diameter</i>	<i>Open Hole OR material</i>	<i>Depth</i>	<i>Volume</i>	<i>Duration of Pumping</i>	<i>Final water level</i>	<i>Recovery</i>
		<i>From To</i>				
6 inch	STEEL		136 ft	4 h:0 m	10	
					15	15 95 ft
					20	

Construction Record - Screen

<i>Outside Diameter</i>	<i>Material</i>	<i>Depth</i>	<i>Volume</i>	<i>Recommended pump depth</i>	<i>Recommended pump rate</i>	<i>Recovery</i>
		<i>From To</i>				
6 inch		136 ft	140 ft	120 ft	30	30 95 ft
					40	
					45	45 95 ft

Well Contractor and Well Technician Information

<i>Well Contractor's Licence Number</i>	4743	
		60 95 ft

Water Details

<i>Water Found at Depth Kind</i>	<i>Hole Diameter</i>
	<i>Depth Diameter</i>
130 ft Fresh	<i>From To</i>

Audit Number: none

Date Well Completed: December 12, 1973

Date Well Record Received by MOE: January 04, 1974

Well ID Number: 7187320

Well Audit Number: Z107919

Well Tag Number: A006365

*This table contains information from the original well record and any subsequent updates.***Well Location**

Address of Well Location	Township	Lot	Concession
not available	Uxbridge Township (Uxbridge)	015	CON 08
County/District/Municipality	City/Town/Village	Province	Postal Code
DURHAM		ON	n/a
UTM Coordinates	Municipal Plan and Sublot Number	Other	
NAD83 — Zone 17			
Easting: 654430			
Northing: 4880627			

Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth
				From To

Annular Space/Abandonment Sealing Record Results of Well Yield Testing

Depth	Type of Sealant Used	Volume	Draw Down	Recovery
From To	(Material and Type)	Placed	Time Water (min) level	Time Water (min) level

Method of Construction Well Use

If pumping discontinued, give reason

SWL

1

2

3

4

5

10

15

20

25

30

40

45

50

60

Status of Well**Construction Record - Casing**

Inside Diameter	Open Hole OR material	Depth
		From To

Duration of Pumping

Final water level

If flowing give rate

Recommended pump depth

Recommended pump rate

Well Production

Disinfected?

Construction Record - Screen

Outside Diameter	Material	Depth
		From To

Well Contractor and Well Technician Information

Well Contractor's Licence Number 1508

Water Details

Water Found at Depth Kind

Hole Diameter

Depth	Diameter
From To	

Audit Number: Z107919**Date Well Completed:** August 12, 2012**Date Well Record Received by MOE:** September 19, 2012

