January 22, 2018
MTE File No.: C39540-300

Mr. Pete Waters
Rockwater Group
256 King St. North
Waterloo, ON N2J 2Y9

Dear Mr. Waters:

Re: Results of Infiltration Testing
233 Janefield Avenue, Guelph, Ontario

INTRODUCTION

This letter presents the results of infiltration testing completed on 233 Janefield Avenue, Guelph, ON (hereby referred to as the "Site"). Infiltration tests were carried out at the Site by MTE Consultants Inc. (MTE) staff on January 15, 2018.

Infiltration testing was undertaken at two proposed infiltration gallery locations on-Site, identified as Infiltration Gallery Location 1 (IG1) and Infiltration Gallery Location 2 (IG2), as shown on Figure 1 (attached). Infiltration testing at IG1 and IG2 was completed in approximately the centre of each proposed infiltration gallery location.

FIELD PROGRAM

MTE staff conducted on-Site infiltration testing on January 15, 2018. Infiltration rates were estimated using a Engineering Technologies Canada Ltd. (ETCL) Constant Head Well Permeameter Test.

Testing Methodology

ETCL Constant Head Well Permeameter Test

To perform the permeameter test a Riverside/Bucket auger was used to auger a 80 mm diameter hole to the depth at which permeameter testing would be completed. The permeameter was subsequently filled with water and placed in the augered hole where the rate of fall (water exiting the permeameter) over time was recorded.

Infiltration testing was conducted at the design bottom elevation of each proposed infiltration gallery. At each testing location an excavator was used to initially dig a test trench to the proposed elevation, at which time a Riverside/Bucket auger was used to auger a 80 mm diameter hole, approximately 0.3 m deep, in which permeameter testing was conducted. In each location a minimum of two holes were augured with a minimum of two permeater tests being performed in each hole to ensure repeatability.

RESULTS

Permeameter testing at IG1 was carried out at an approximate elevation of 322.8 metres above mean sea level (mAMSL). The soil encountered at IG1's permeameter test elevation was noted to consist of fine sand, which is in agreement with borehole logs from nearby locations. Permeameter testing at IG2 was carried out at an approximate elevation of 321.0 and 320.6 mAMSL. The soil encountered at IG2's permeameter test elevations was noted to consist of medium sand with occasional cobbles, which is in agreement with borehole logs from nearby locations.

Calculations of field saturated hydraulic conductivities using the permeameter were completed through the use of equations and values provided in the ETCL manual. This was in turn was converted into an infiltration rate using the supplementary guideline to the Ontario Building Code Ontario Ministry of Municipal Affairs and Housing (OMMAH, 1997). A summary of the infiltration rates determined by MTE using the permeameter is provided in Table 1.

TABLE 1 – SUMMARY OF CALCULATED INFILTRATION RATES USING THE PERMEAMETER TEST

Test Location	Test Elevation (mAMSL)	Soil Type	Infiltration Rate (mm/hr)
IG1	322.8	Fine Sand	136
IG2	320.6 - 321.0	Medium Sand	229

CONCLUSION

Infiltration tests were carried out in IG1 and IG2 at 233 Janefield Avenue on January 15, 2018. Infiltration rates were estimated based on results gathered from the ETCL Constant Head Well Permeameter Test.

Overall, infiltration rates were found to vary between IG1 and IG2 with IG1 having an infiltration rate of 136 mm/hr while IG2 was found to have an infiltration rate of 229 mm/hr. IG1 was found to have a moderate infiltration rate while IG2 is considered to have a high infiltration rate. Infiltration rates at IG2 may be higher in locations with increased gravel and cobble content.

We trust that this letter answers questions related to infiltration rates at this location should you have any more questions please do not hesitate to contact us.

Yours truly,

MTE CONSULTANTS INC.

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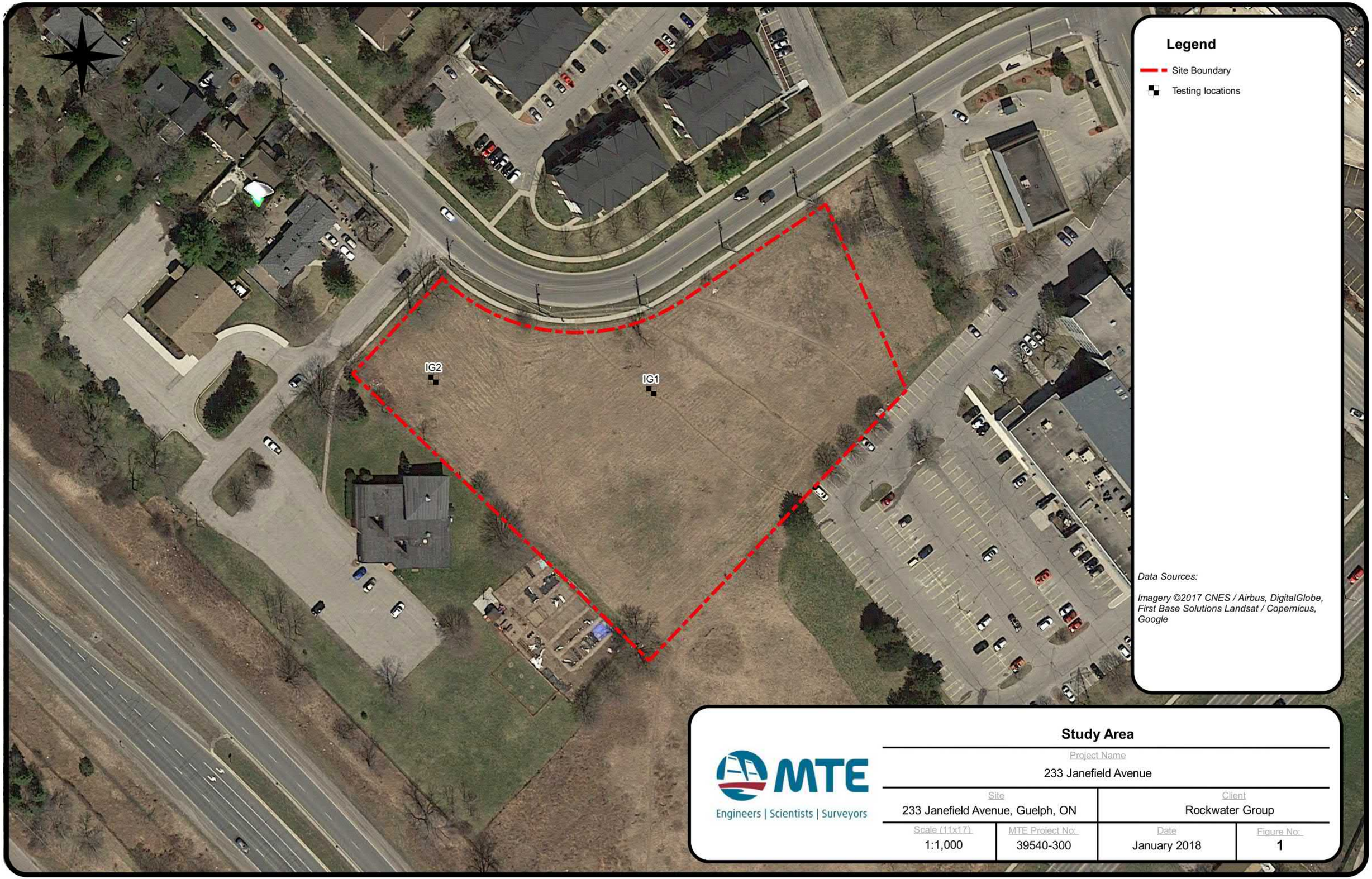
PAG:scp
Attach.
M:\39540\300\39540-300 Infiltration Rates Memo.docx

FIGURES



Legend

- Site Boundary
- Testing locations

Data Sources:

Imagery ©2017 CNES / Airbus, DigitalGlobe, First Base Solutions Landsat / Copernicus, Google

Project No: Q:/39540/300/Site Map.qgs

Site Location

January 22, 2018 - 09:27 - Plotted By: fcummings

MTE
Engineers | Scientists | Surveyors

Study Area

Project Name			
233 Janefield Avenue			
Site		Client	
233 Janefield Avenue, Guelph, ON		Rockwater Group	
Scale (11x17)	MTE Project No:	Date	Figure No:
1:1,000	39540-300	January 2018	1