Hydrogeological Investigation Report

D-4 Study
Proposed Residential Development
Part Lot 16, Concession 4, Former Cavendish Township, County Road 507, Buckhorn, ON

Lorne Hatcher

May 19, 2016

347 Pido Road Unit 29 Peterborough Ontario K9J 6X7 Canada

11111984-01 | Report No 1

1. Executive Summary

This report presents the results of a hydrogeological investigation that was conducted for a proposed single dwelling residential development to be located northeast of County Road 507 and Scotts Road, south of the community of Catchacoma. The property is approximately 18 hectares in size and geographically located on Part Lot 16, Concession 4, Former Cavendish Township (herein referred to as "the Site"). The Site is within the Township of Trent Lakes, Ontario and is within the Mississauga Lake watershed. The lands are currently used for rural residential and agricultural purposes. The proposed development is to be privately serviced for water and sanitary services.

The property is located within 500m of a waste disposal site (WDS) and the hydrogeological investigation was competed in general accordance with MOECC D-4 Land Use On or Near Landfills and Dumps. Based upon the records reviewed the area is generally comprised of shallow topsoil/sand underlain by granite. The waste disposal site is separated by a surface water feature and the WDS did not extend onto the Property. The potential for methane migration and soil settlement is minimal.

In summary, it is GHD's opinion that the proposed development is suitable from a hydrogeological perspective with no risks to health or safety present.

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2. Introduction

This report presents the results of a hydrogeological investigation that was conducted for a proposed single dwelling residential development to be located northeast of County Road 507 and Scotts Road, south of the community of Catchacoma. The property is 18 hectares in size and geographically located on Part Lot 16, Concession 4, Former Cavendish Township (herein referred to as "the Site"). The Site is within the Township of Trent Lakes, Ontario and is within the Mississauga Lake watershed. The lands are currently used for rural residential and agricultural purposes. The proposed development is to be privately serviced for water and sanitary services.

The location of the property relative to the area of potential concern, nearby roads and water courses is illustrated on the Vicinity Plan, Figure 1. More specific ground surface characteristics are illustrated on the Site Plan, Figure 2 and the Plot Plan, Plate 3.

3. Scope of Assessment

The property is located within 500m of a waste disposal site (WDS) and the hydrogeological investigation was competed in general accordance with MOECC D-4 Land Use On or Near Landfills and Dumps.

The following scope of work was performed to accomplish the foregoing purposes:

1. Reviewed available background information relevant to the Site such as geologic, physiographic and water resources reports and maps.
2. Carried out an inventory of available well record data on file with the Ministry of the Environment and Climate Change (MOECC) for the immediate area to evaluate the physical characteristics of the aquifer complexes that underlie the region.
3. A walkover inspection was conducted to review surficial ground characteristics.
4. Prepared a detailed report using engineering analyses of the acquired data outlining our conclusions and recommendations herein.

4. Site Inspection and Information Review

4.1 General

The field program consisted of an inspection of the site and surrounding general area on October 25, 2015 by GHD. The general surficial characteristics of the Site consisted of shallow soils with rock outcrops. The property is predominately wooded and elevated above County Road 507 located to the west. Scotts Road is located south of the Property followed by a surface water feature that is connected to Mississauga Lake located to the east. To the north is the community centre for Catchacoma and to the east is wooded lot.

4.2 Landfills

According to the Municipality of Trent Lakes Waste Management Plan, December 2015, the Cavendish WDS is currently operated as a Transfer Station since 2008 and as a landfill since 1972. The site is operated under Provisional Certificate of Approval Waste Disposal Site No. A 341206, dated August 12, 1980. According to the certificate, the waste disposal site (WDS) is located 3405 Highway 507 on Lot 15, Concession 3 in the Township of Trent Lakes, County of Peterborough.

The landfill is located south of the proposed residential lot and separated by Scotts Road and a surface water feature. The local MOECC office was contacted regarding the Cavendish landfill. Mr. Chris Johnston indicated that the most recent monitoring report is due after the submission of this report and that the WDS is currently undergoing closure. Mr. Johnston indicated that there are not major concerns with the WDS and any potential leachate plume would flow to the south away from the study property.

4.3 Mapping and Surrounding Land Use

The area is presented on the National Topographic System Mapping from Energy, Mines and Resources Canada Map 31 D/9 (published 2001), Vicinity Plan, Plate 1. The location with respect to adjacent roadways and surrounding land uses is presented on the Property Plan, Plate 2. The Property Plan includes a 500m zone around the proposed development and the location of former landfill.

The Property is located on the east side of County Road 507 in the Township of Trent Lakes, County of Peterborough. The adjacent properties observed at the time of the site reconnaissance are described below. Additional details of the site reconnaissance are provided in Section 6.0.

North: Catchacoma Community Centre;

South: Scotts Road, Surface Water Feature and WDS;

East: woodlots; and,

West: woodlots.

4.4 Water Bodies and Areas of Natural Significance

The Site is within the physiographic region known as the Algonquin Highlands (Chapman and Putnam, 1984) with shallow tills and rock ridges. Mississauga Lake is within 1km of the property. A surface water features borders the southern perimeter of the property that is connected to Mississauga Lake. No other major areas of natural significance are located within 250m of the property.

4.5 Aerial Photographs

Digital photographs from the National Air Photo Library were available and reviewed for the years 1934, 1693 and 1987. Recent aerial photographs from 2009, 2011 and 2014 were also reviewed from Google Earth. Copies of the digital photographs are included in Appendix B.

The photographs show that the Property and immediate surrounding area are generally wooded and have remained largely unchanged. Due the scale of the imagery and the relatively small footprint of the Property, specific site details are not able to be defined. The landfill is not seen to be operation in any of the aerial photos 1987 and later. The aerial photo from 2014 presents the Property and surrounding area in general configuration with how they appeared during the site reconnaissance.

4.6 Water Well Records

The hydrogeology of the area is characterized by hilly topography of soils that generally consist of bedrock below the topsoil layer.

Information regarding groundwater characteristics of the immediate area was obtained from an inventory of well records. A total of eight (8) well records were identified within 500 m of the Site for statistical breakdown including eight (8) drilled wells including six (6) bedrock wells. The MOECC well records and their locations are provided in Appendix B.

An inquiry was made in regards to water well information records on file with the Ministry of the Environment (MOE) Environmental Monitoring and Reporting Branch which included wells in the immediate area. The database describes locations and characteristics of water wells found within Ontario in accordance with Regulation 903. It includes such information such as coordinates, construction date, well depth, well use, pump rate, static water level, well status, etc. Also included in this database are detailed stratigraphy information, approximate depth to bedrock, and the approximate depth to the water table.

Lands in the area are privately serviced for water and sewage. Physical and hydraulic data are presented on MOECC well records (Appendix B) and the information indicates the presence of one (1) principal aquifer systems: bedrock tapped by drilled bedrock wells. The data has been summarized in Table 4.5.

Table 4.5: Well Record Summary

Total Number of Wells Inventoried:	8
Dug/Bored Wells:	0 (0%)
Drilled Wells (Overburden):	2 (25%)
Drilled Wells (Bedrock):	6 (75%)

Parameters	Statistical Summary		Statistical Summary		Statistical Summary	
	Dug / Bored Wells		Drilled – Overburden		Drilled – Bedrock	
WELL YIELDS						
Range	0 L/min	0 Igpm	0 L/min	0 Igpm	4.5 to 68.2 L/min	1 to 15 Igpm
Average	0 L/min	0Igpm	0 L/min	0 Igpm	22.7 L/min	5 Igpm
REPORTED YIELDS	Frequency		Frequency		Frequency	
Not Reported	0	0%	2	100%	0	0%
Dry	0	0%	0	0%	0	0%
0 to 1 Igpm	0	0%	0	0%	1	17%
2 to 4 Igpm	0	0%	0	0%	2	33%
5 to 9 Igpm	0	0%	0	0%	2	33%
≥10 Igpm	0	0%	0	0%	1	17%
STATIC WATER LEVELS						
Range	0 m	0 ft	0 m	0 ft	11.6 m	38 ft
Average	0 m	0 ft	0 m	0 ft	11.6 m	38 ft
WATER ENCOUNTERED						
Range	0 m	0 ft	0 m	0 ft	4.3 to 62.5 m	14 to 205 ft
Average	0 m	0 ft	0 m	0 ft	28.6 m	93.7 ft
WELL DEPTH						
Range	0 m	0 ft	1.83 m	6 ft	12.8 to 67.1m	42 to 220 ft
Average	0 m	0 ft	1.83 m	6 ft	79.2 m	131.5 ft

Notes: Data based on MOECC well record information (see Appendix C). L/m represents litres per minute, Igpm indicates Imperial gallons per minute and m is metres

5. Impact Assessment

The use and operation of a WDS was identified in Provisional Certificate of Approval Waste Disposal Site No. A 341206, dated August 12, 1980. As there is a surface water feature located between the site and landfill the potential for impact is negligible. An assessment of the guideline D-4 considerations is presented in the following sections.

5.1 Groundwater and Surface Water Contamination

Regional groundwater is inferred to flow south-east towards Mississauga Lake with the Property up gradient of the flow from the former landfill location. Surface water flow is anticipated to be similar.

GHD observed no signs of stressed vegetation due to leachate or any other evidence of leachate on the Property. Based on the data, the distance from the site, down gradient of site, and the lack of use it is our professional opinion that no impact has occurred due to the WDS.

5.2 Subsurface Run-off

Subsurface run-off from the former WDS is expected to ultimately flow eastwardly towards Mississauga Lake. Subsurface run-off from the WDS would not have flowed through the site and would not have had an impact on the Property.

5.3 Ground Settlement

The WDS did not encroach the Property and no settlement is anticipated at the Property with respect to the former landfill.

5.4 Visual Impact

The WDS is currently closed and visual impact is not anticipated. In general the landfill is not visible from the proposed development as there is a road and swamp that separate the site and landfill.

5.5 Soil Contamination and Hazardous Waste

According to information reviewed there is no indication that the WDS site contains hazardous waste. Based on the information reviewed, it is GHD's opinion that there is a low likelihood of soil contamination and hazardous waste impact to the Property with respect to the landfill.

5.6 Landfill Generated Gases

It is our professional opinion that the likely impact from the landfills gases is insignificant.

6. Conclusions and Recommendations

Based on the results of this assessment, including review of MOE water well database, aerial photographs and GIS maps for the region, the WDS certificate and our hydrogeological report, it is our professional opinion that there is negligible potential for the development to be impacted by the former landfill and no further work is required.

Should questions arise regarding any aspect of our report, please contact our office.

Sincerely,

Steven Gagne, H.B.Sc.

Nyle McIlveen, P.Eng.

7. References

Chapman and Putnam, 1966. The Physiography of Southern Ontario, 2nd Edition. University of Toronto Press.

Chapman and Putnam, 1984. The Physiography of Southern Ontario, 3rd Edition. Ministry of Natural Resources.

City of Toronto, November 2006. Wet Weather Flow Management Guidelines.

Credit Valley Conservation and Toronto and Region Conservation Authority. Low Impact Development Stormwater Management Planning and Design Guide. Version 1.0. 2010.

Freeze, R. Allan and Cherry, John A. 1979. Groundwater.

8. Statement of Limitations

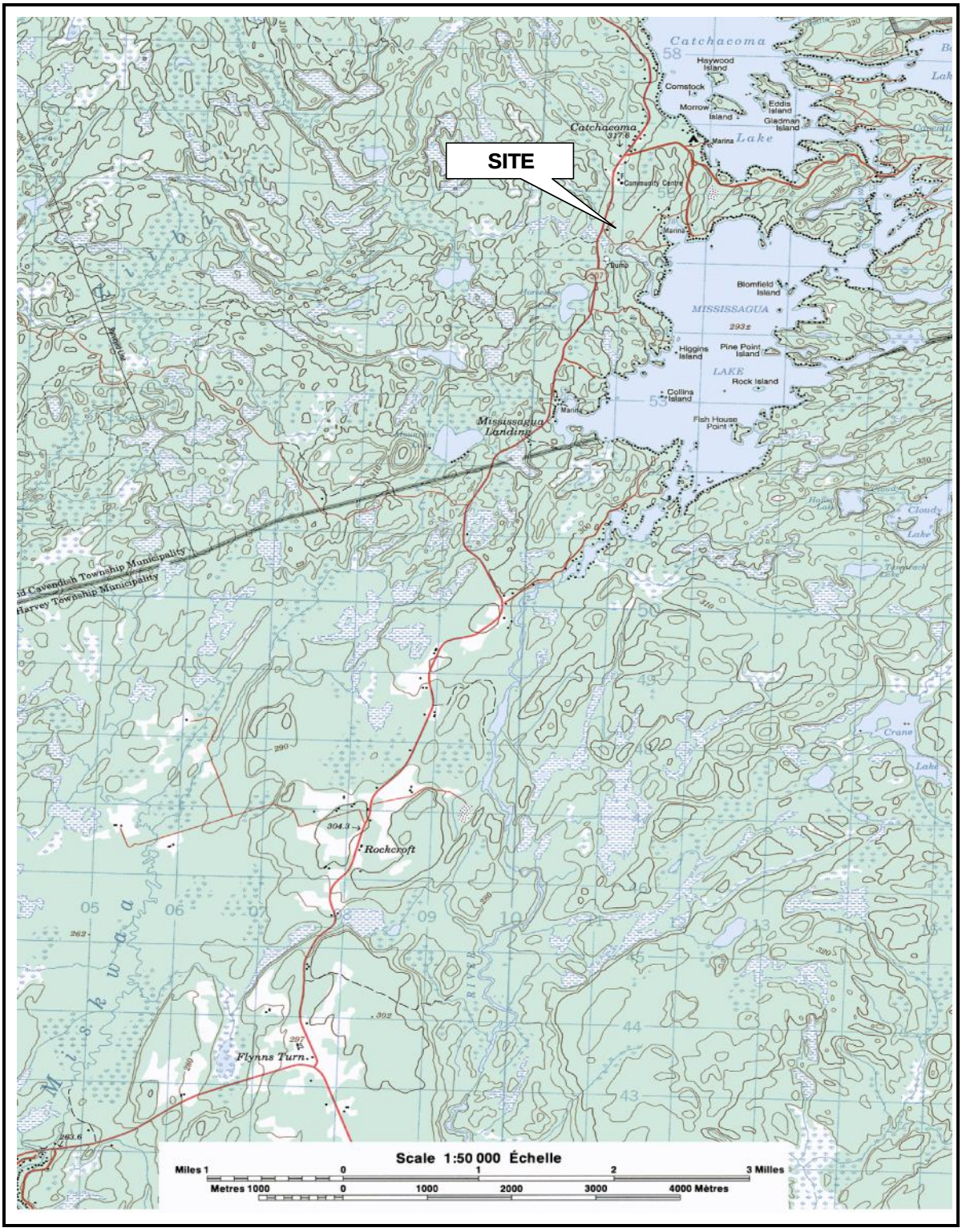
This report is intended solely for Lorne Hatcher in assessing the hydrogeological (D-4) aspects of the property (Part Lot 16, Concession 4, Former Cavendish Township now in the township of Trent Lakes) located on the east side of County Road 507, north of Scotts Road, Buckhorn as depicted on the Site Plan, Plate 2 and is prohibited for use by others without GHD's prior written consent. This report is considered GHD's professional work product and shall remain the sole property of GHD. Any unauthorized reuse, redistribution of or reliance on the report shall be at the Client and recipient's sole risk, without liability to GHD. Client shall defend, indemnify and hold GHD harmless from any liability arising from or related to Client's unauthorized distribution of the report. No portion of this report may be used as a separate entity; it is to be read in its entirety and shall include all supporting drawings and appendices.

The recommendations made in this report are in accordance with our present understanding of the project, the current site use, ground surface elevations and conditions, and are based on the work scope approved by the Client and described in the report. The services were performed in a manner consistent with that level of care and skill ordinarily exercised by members of hydrogeological and geotechnical engineering professions currently practicing under similar conditions in the same locality. No other representations, and no warranties or representations of any kind, either expressed or implied, are made. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties.

All details of design and construction are rarely known at the time of completion of a hydrogeological study. The recommendations and comments made in the study report are based on our subsurface investigation and resulting understanding of the project, as defined at the time of the study. We should be retained to review our recommendations when the drawings and specifications are complete. Without this review, GHD will not be liable for any misunderstanding of our recommendations or their application and adaptation into the final design.

It is important to emphasize that a soil investigation is, in fact, a random sampling of a site and the comments included in this report are based on the results obtained at the test hole locations only. The subsurface conditions confirmed at the test hole locations may vary at other locations. The subsurface conditions can also be significantly modified by the construction activities on site (ex. excavation, dewatering and drainage, blasting, pile driving, etc.). These conditions can also be modified by exposure of soils or bedrock to humidity, dry periods or frost. Soil and groundwater conditions between and beyond the test locations may differ both horizontally and vertically from those encountered at the test locations and conditions may become apparent during construction which could not be detected or anticipated at the time of our assessment. Should any conditions at the site be encountered which differ from those found at the test locations, we request that we be notified immediately in order to permit a reassessment of our recommendations. If changed conditions are identified during construction, no matter how minor, the recommendations in this report shall be considered invalid until sufficient review and written assessment of said conditions by GHD is completed.

Enclosures

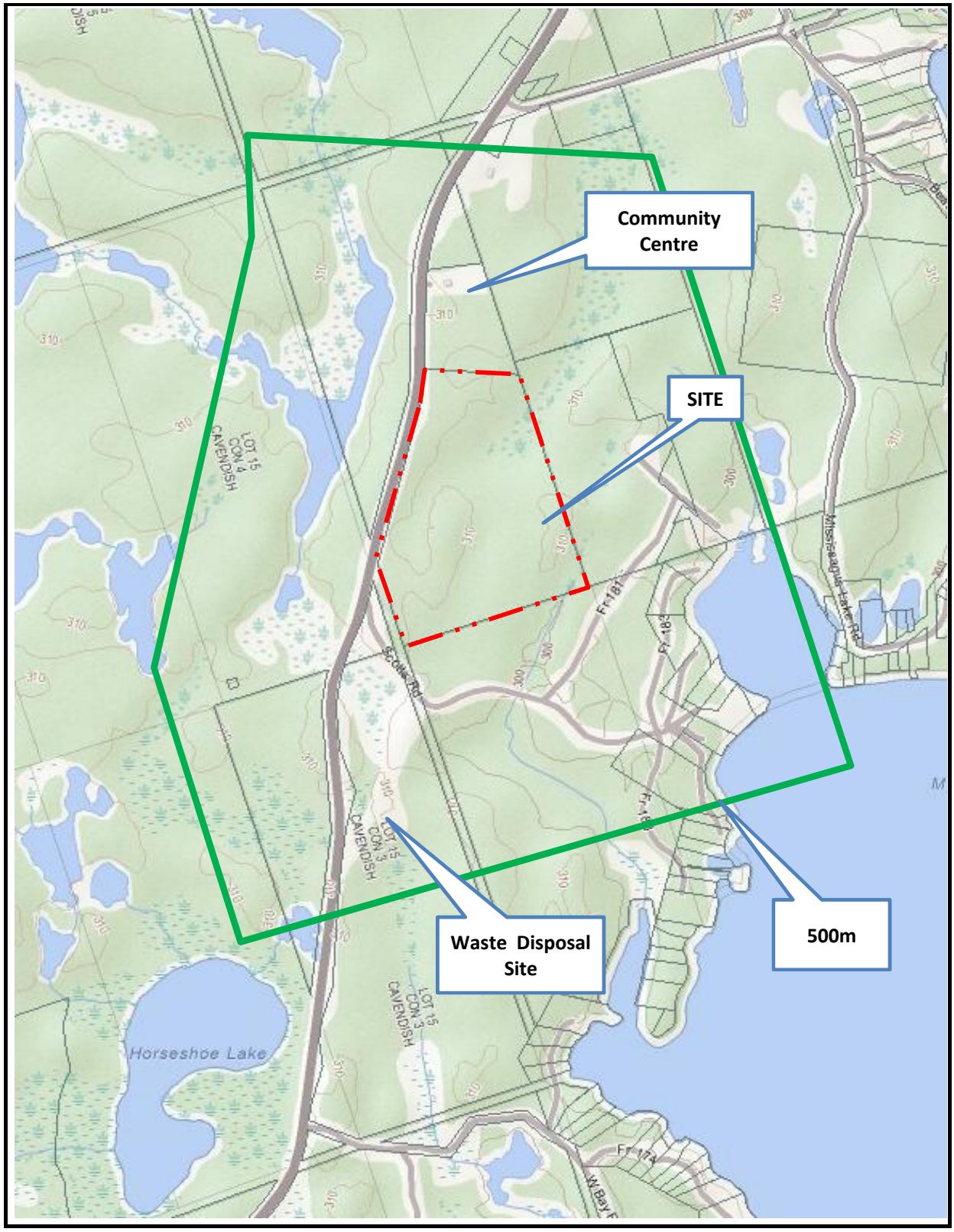


Source: Base map compiled from Centre for Mapping, Natural Resources Canada. Map 31 D/09. Published 2000.

Scale: 1:50,000 Coordinate System NAD 1983 UTM Zone 17	N	GHD	Hatcher CR 507, Buckhorn, ON Hydrogeological Report	11111984-01 June 2016

Vicinity Plan

FIGURE 1



Source: Ministry of Natural Resources and Forestry, Make a Topographic Map, 2015.

Scale:
1 : 12,000
Coordinate System:
NAD 1983 UTM Zone 17

N

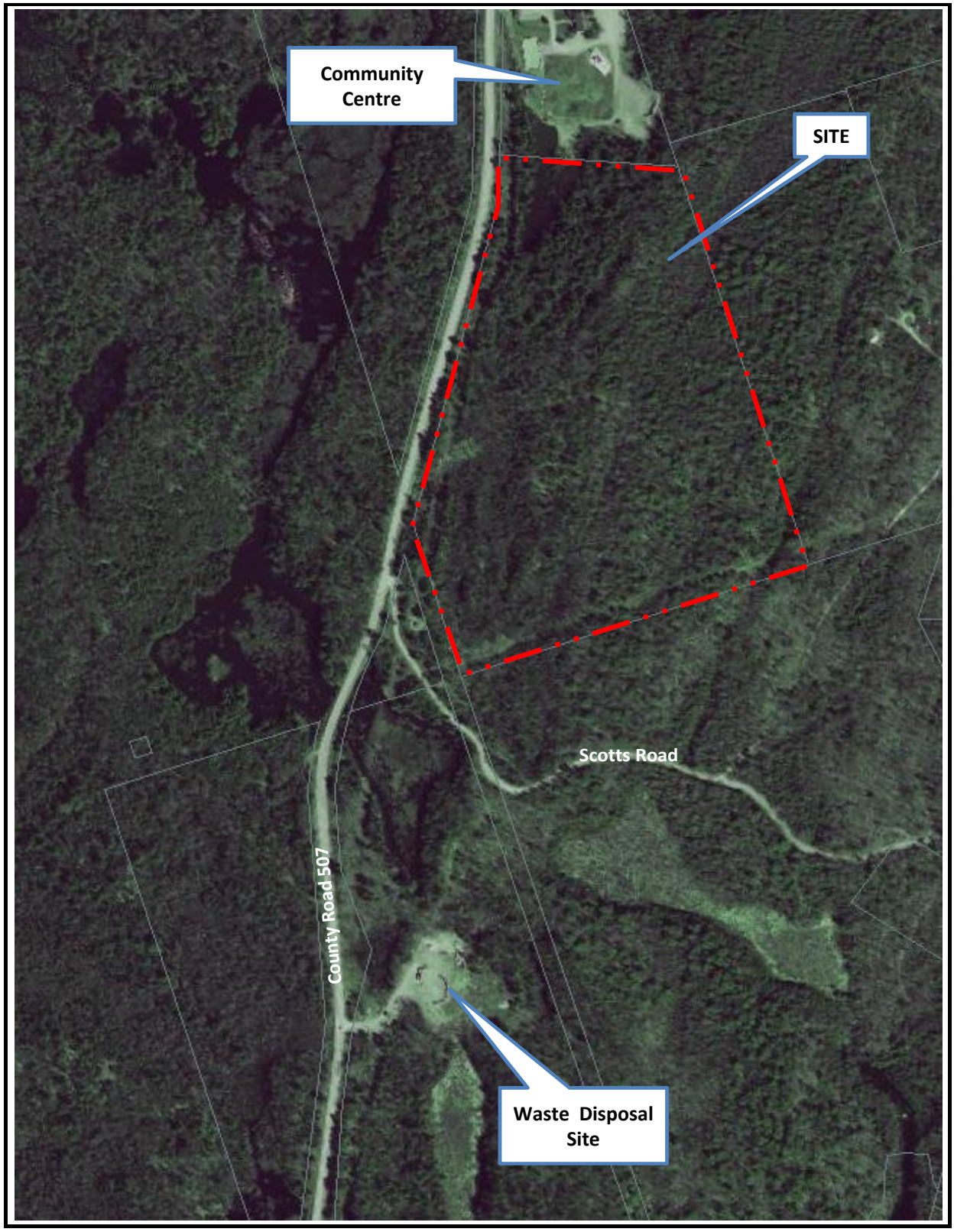
GHD

CR 507, Buckhorn, ON
Hydrogeological Report

Site Plan

11111984-01
June 2016

FIGURE 2



Source: Ministry of Natural Resources and Forestry, Make a Topographic Map, 2015.

Scale:
1 : 6,500
Coordinate System:
NAD 1983 UTM Zone 17

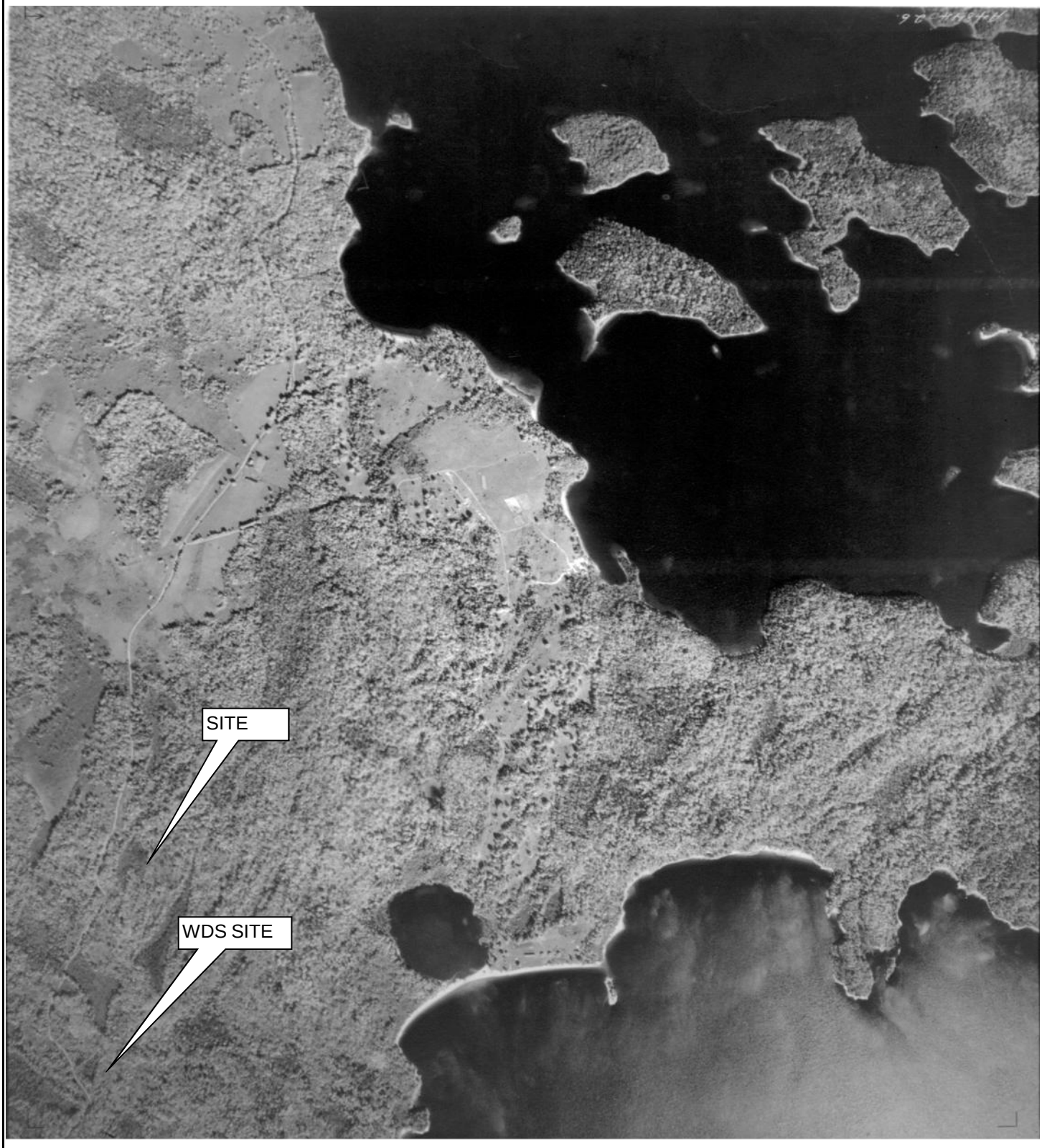
CR 507, Buckhorn, ON
Hydrogeological Report

Plot Plan

11111984-01
June 2016

FIGURE 3

Appendix A
AERIAL PHOTOGRAPHY



AERIAL PHOTOGRAPHY - 1934

Residential Development

County Road 507

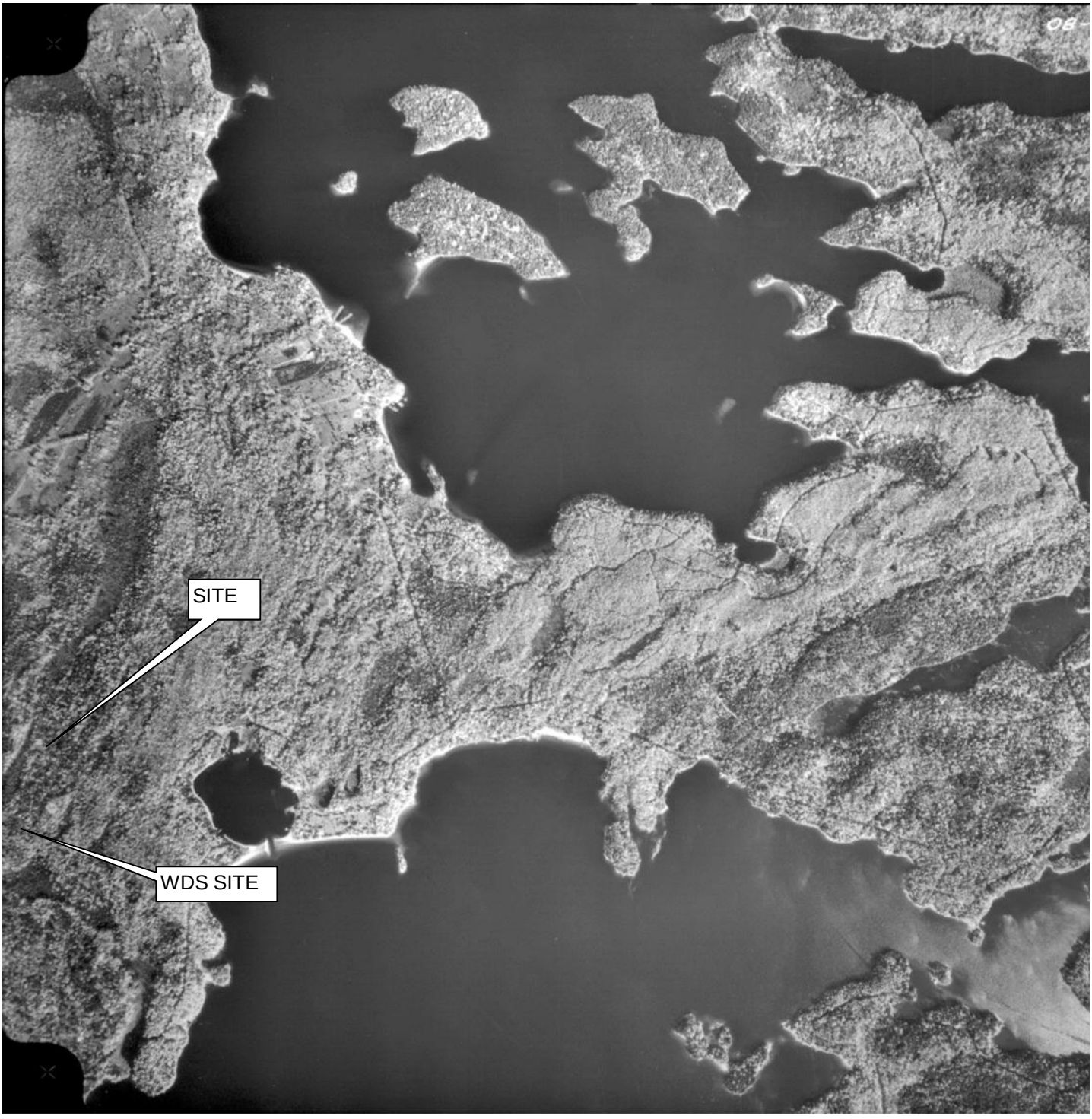
Buckhorn, ON

Scale: 1-20 000

GHD Limited

11111984-01

Source: National Air Photo Library of Natural Resources Canada, dated 1934



AERIAL PHOTOGRAPHY - 1954

Residential Development

County Road 507

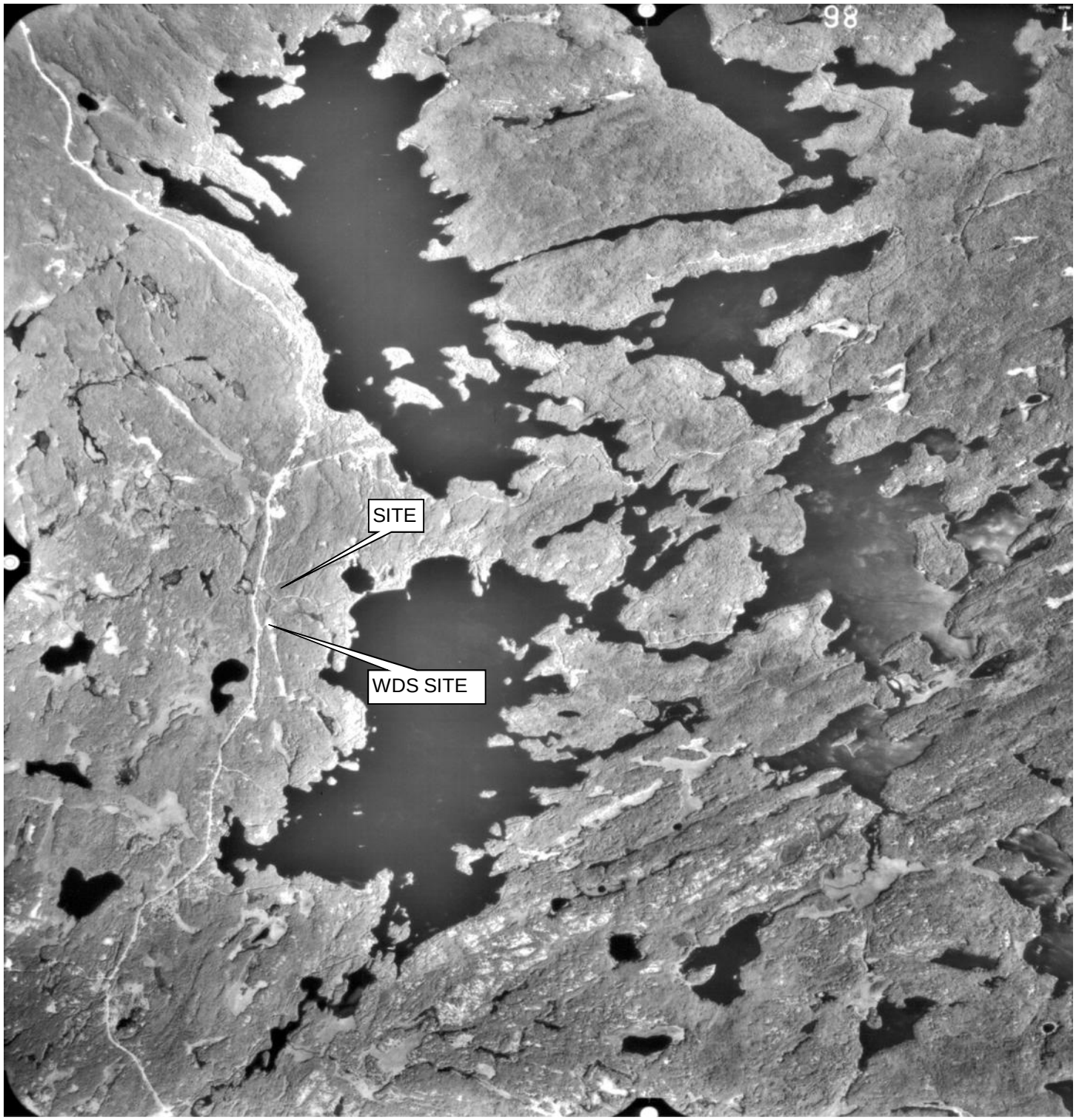
County Road 507

Buckhorn, ON

GHD Limited

11111984-01

Source: National Air Photo Library of Natural Resources Canada, dated 1954



AERIAL PHOTOGRAPHY - 1987

Residential Development

County Road 507

County Road 507

Buckhorn, ON

GHD Limited

11111984-01

Source: National Air Photo Library of Natural Resources Canada, dated 1987

AERIAL PHOTOGRAPHY - 2009

Residential Development

County Road 507

County Road 507

Buckhorn, ON

GHD Limited

11111984-01

Source: Google Earth Historical Imagry, dated August 2009

AERIAL PHOTOGRAPHY - 2011

Residential Development

County Road 507

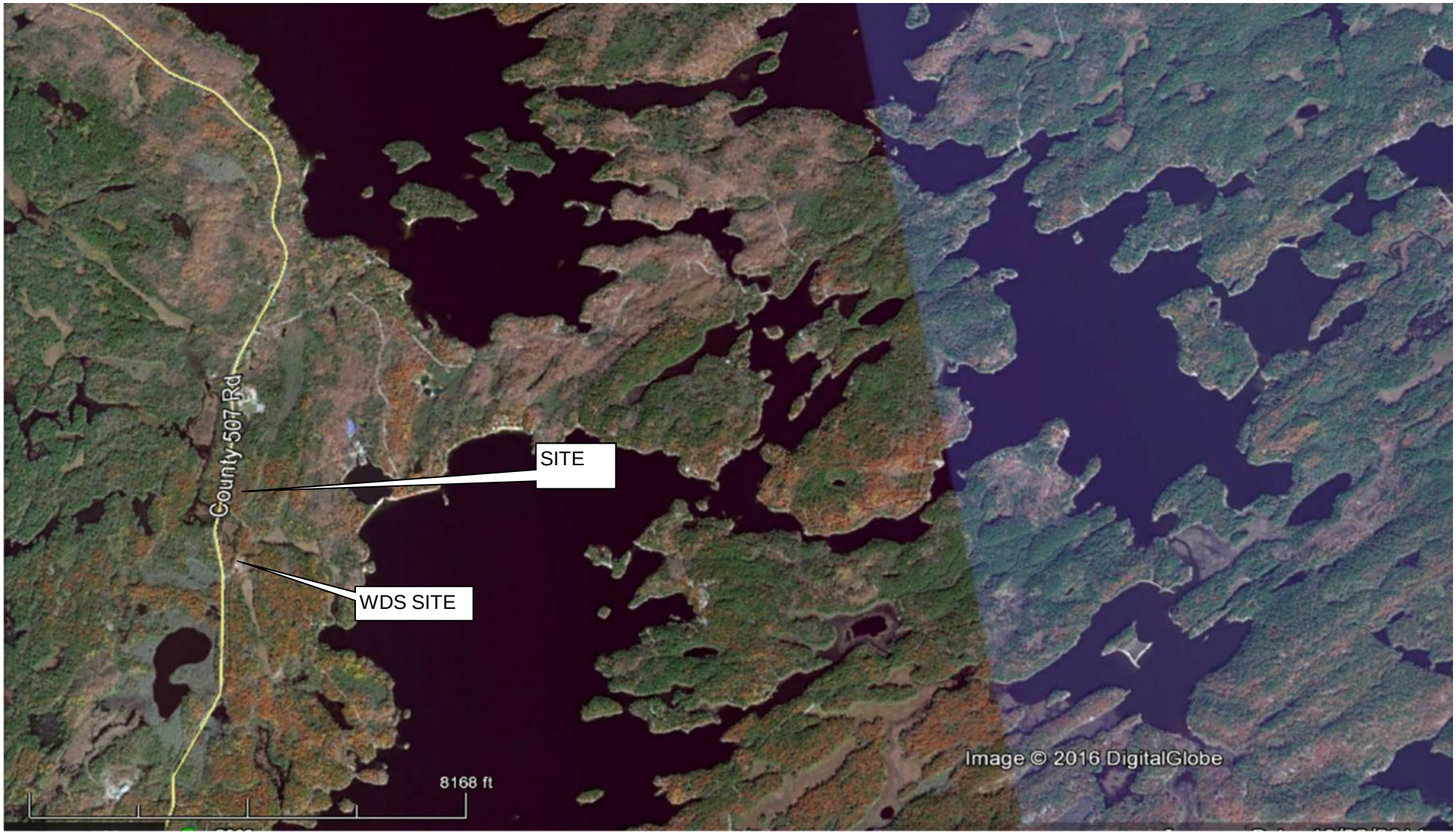
County Road 507

Buckhorn, ON

GHD Limited

11111984-01

Source: Google Earth Historical Imagry, dated July 2011



AERIAL PHOTOGRAPHY - 2014

Residential Development

County Road 507

Buckhorn, ON

Scale: Refer to Scale Bar

Source: Google Earth Historical Imagry, dated October 2014

GHD Limited

11111984-01

Appendix B
WELL RECORDS

MINISTRY OF THE ENVIRONMENT
The Ontario Water Resources Act

WATER WELL RECORD

Ontario

3104W

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 | 5107729 | MUNICIP. 51005 | CON. CON 03

COUNTY OR DISTRICT: PETERBOROUGH | TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: CAVENDISH TWP | CON., BLOCK, TRACT, SURVEY, ETC.: CON 4 111 | LOT 017

[redacted] 11 BAYVIEW AVE - WILLOWDALE | DATE COMPLETED: DAY 28 MO. SEPT YR. 75

UTM: 755300 | ELEVATION: 1000 | BASIC GRID

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
WHITE	LIMESTONE		SOFT	0	25
DoGREY	"		HARD	25	120

31: 0025 | 11585 | 0120 | 21573

32:

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0118	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
02	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	3/16	0	0010'
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

MATERIAL AND TYPE: | DEPTH TO TOP OF SCREEN FEET:

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
10-13	14-17	
18-21	22-25	
26-29	30-33	

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☒ PUMP 2 ☐ BAILER	2½ 0003 GPM	06 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☐ PUMPING 2 ☒ RECOVERY	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
012 FEET	025 FEET		012 FEET	FEET	FEET	FEET

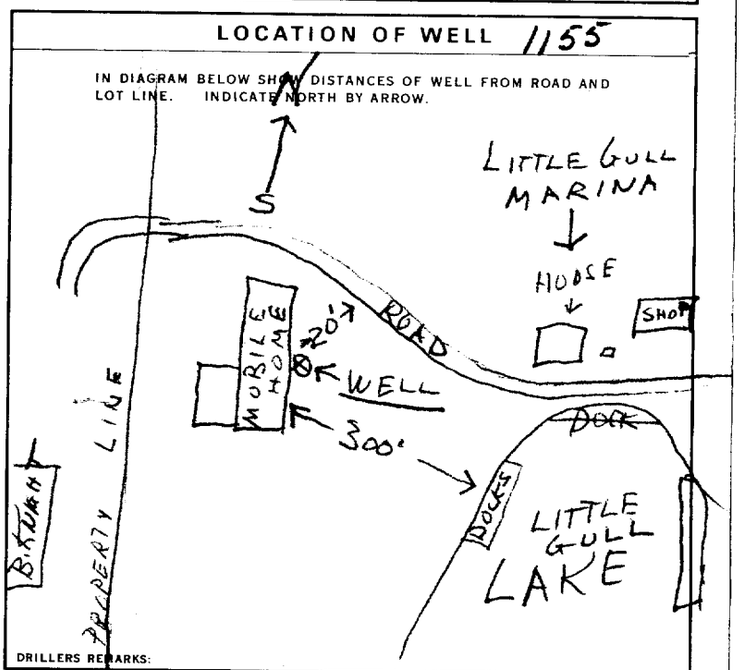
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM	40' FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☒ SHALLOW ☐ DEEP	FEET	0002 GPM

GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL 1155

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS:

FINAL STATUS OF WELL 1

1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED

WATER USE 01

1 ☒ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING ☐ OTHER COTTAGE USE 9 ☐ NOT USED

METHOD OF DRILLING 7

1 ☐ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☐ BORING 7 ☒ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: BRYCE KNIGHT | LICENCE NUMBER: 3217

ADDRESS: SITE 5 RR#1 BUCKHORN

NAME OF DRILLER OR BORER: AS ABOVE | LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: B Knight | SUBMISSION DATE: DAY 18 MO. OCT YR. 75

OFFICE USE ONLY

DATA SOURCE 58: 1 | CONTRACTOR 59-62: 3217 | DATE RECEIVED 63-68: 111275

DATE OF INSPECTION: | INSPECTOR:

REMARKS:

P

WI

MINISTRY OF THE ENVIRONMENT COPY

FORM 7 07-091

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

Ontario

31D9/W

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 | 5107730 | MUNICIP. 51005 | CON. CON 03

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
PETERBOROUGH	CAVENDISH TWP	Con 4	017

[redacted] ES RR #1 BUCKHORN ONT — DATE COMPLETED: DAY 08 MO. 11 ~~NOV~~ YR. 75

55300 5 ELEVATION 1000 6 BASIN CODE 24

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
WHITE	LIMESTONE		SOFT	0	35
GREY	"		MED HARD	35	55

31 0035 11585 0055 21573

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0053	1 ☒ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
02"	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	3/16	0	0010'
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

MATERIAL AND TYPE | DEPTH TO TOP OF SCREEN FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☒ PUMP 2 ☐ BAILER	~~22~~ 0003 GPM	04 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING 15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
015 FEET	028 FEET	015 FEET	FEET	FEET	FEET

1 ☐ PUMPING 2 ☒ RECOVERY

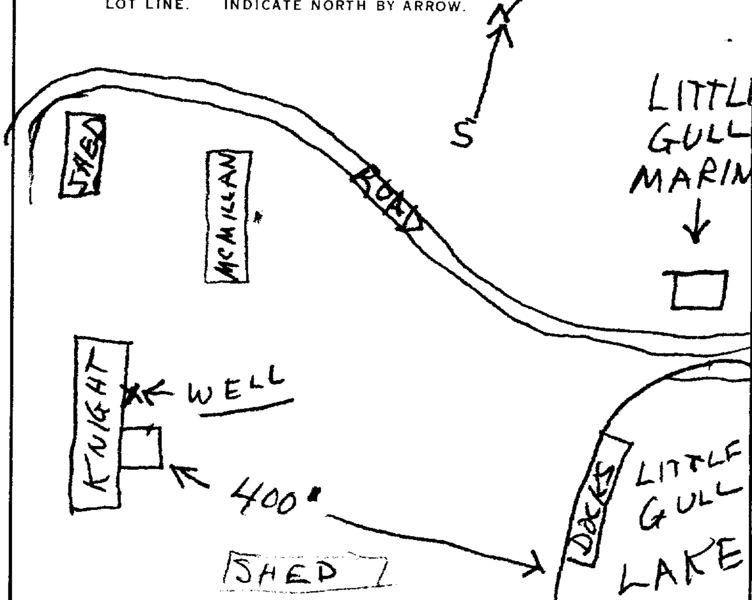
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM	35' FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☒ SHALLOW ☐ DEEP	FEET	0002 GPM

GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL 1155

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS:

FINAL STATUS OF WELL 1	1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED
WATER USE 01	1 ☒ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED
METHOD OF DRILLING 7	1 ☐ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☐ BORING 7 ☒ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR	LICENCE NUMBER
B KNIGHT	3217

ADDRESS

NAME OF DRILLER OR BORER	LICENCE NUMBER
SELF	

SIGNATURE OF CONTRACTOR: B Knight — SUBMISSION DATE: DAY 15 MO. NOV YR. 75

OFFICE USE ONLY

DATA SOURCE	CONTRACTOR	DATE RECEIVED
1	3217	171275

DATE OF INSPECTION | INSPECTOR

REMARKS:

WI

MINISTRY OF THE ENVIRONMENT COPY

FORM 7 07-091

3109.

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

(11) 5110521

MUNICIP. 51005 CON. CON 04

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON BLOCK, TRACT, SURVEY, ETC	
[redacted]	...DENDISH	3 IV	016 #16

DATE COMPLETED DAY 19 MO 03 YR 81

(21) ... 955900 RC. 5 ELEVATION 1000 RC. 6 BASIN CODE 24

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	TO
RED v GREY	GRANITE			0	150

MOE VF-18

(31) 0150721

32

(41) WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0120	1 ☒ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL

(51) CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	TO
06 1/4	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	0012
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

MATERIAL AND TYPE — DEPTH TO TOP OF SCREEN FEET

(61) PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

(71) PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☒ PUMP 2 ☐ BAILER	0001 30/hr GPM	01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
014 FEET	150 FEET	143 FEET	136 FEET	129 FEET	122 FEET

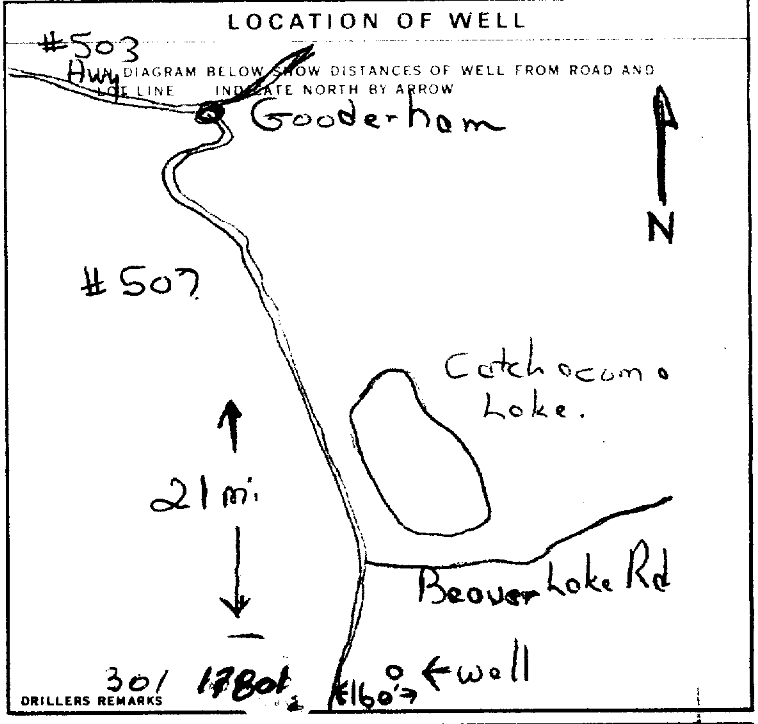
WATER LEVELS DURING: 1 ☐ PUMPING 2 ☒ RECOVERY

IF FLOWING GIVE RATE ____ GPM; PUMP INTAKE SET AT 150 FEET; WATER AT END OF TEST 1 ☐ CLEAR 2 ☒ CLOUDY

RECOMMENDED PUMP TYPE ☐ SHALLOW ☒ DEEP; RECOMMENDED PUMP SETTING 140 FEET; RECOMMENDED PUMPING RATE 0001 GPM

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW



DRILLERS REMARKS 301 1780t 1160'

FINAL STATUS OF WELL 1	1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED
WATER USE 01	1 ☒ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED
METHOD OF DRILLING 5	1 ☐ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☒ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: D DEBLEK DRILLING LTD — LICENCE NUMBER 1748
ADDRESS: Box 96 Gooderham, ONT
NAME OF DRILLER OR BORER: DENNIS DEBLEK — LICENCE NUMBER 1748
SIGNATURE OF CONTRACTOR: [signature] — SUBMISSION DATE DAY 29 MO. 6 YR 82

OFFICE USE ONLY

DATA SOURCE 1 — CONTRACTOR 1748 — DATE RECEIVED 060782
DATE OF INSPECTION — INSPECTOR
REMARKS: CSS.ES

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FORM NO. 0506—4—77 FORM 7

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

5111705

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON.	BLOCK, TRACT, SURVEY, ETC	LOT
[redacted]	CAVENDISH	4	EAST HALF OF	16
[redacted] #4 BUCKHORN ONT.			DATE COMPLETED DAY 6 MO 3 YR 86	

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
DK. BR	TOP SOIL		SOFT	0	1
" "	SILTY CLAY		"	1	3
BLACK	GRANITE		HARD	3	42

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
14	1 ☑ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
6 1/4	1 ☑ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	12
6 1/4	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☑ OPEN HOLE		12	42
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
12	0	GROUTED WELL WITH
		BENTONITE (PACKER CLAY)
		REAMED OUT WELL WITH 8" BIT 0-12 FT.

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☑ PUMP 2 ☐ BAILER	8 GPM	2 HOURS 15 MINS

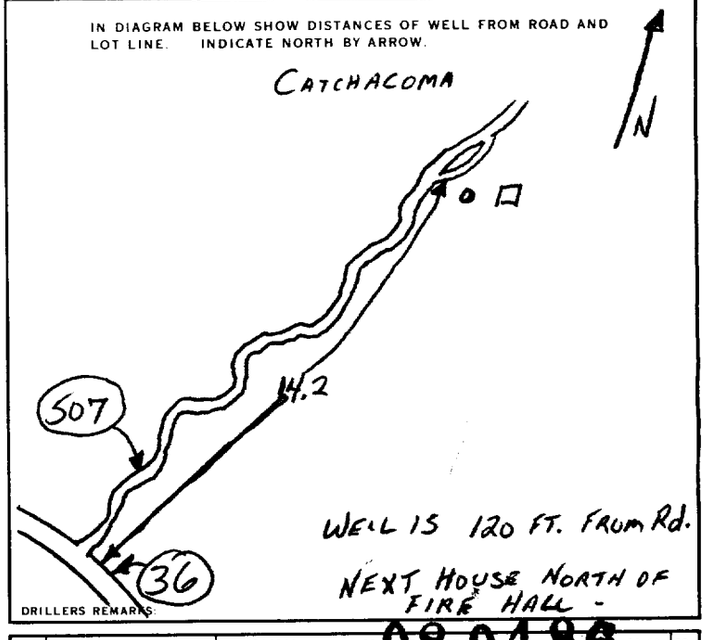
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
7 FEET	22 FEET	1 ☑ PUMPING 2 ☐ RECOVERY	22 FEET	22 FEET	22 FEET	22 FEET

IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
— GPM	28 FEET	1 ☑ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☑ DEEP	37 FEET	5 GPM

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



WELL IS 120 FT. FROM Rd.
NEXT HOUSE NORTH OF FIRE HALL -

DRILLERS REMARKS:

FINAL STATUS OF WELL	1 ☑ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED
WATER USE	1 ☑ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED
METHOD OF DRILLING	1 ☑ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR	LICENCE NUMBER
HERB LANG WELL DRILLING	3367
ADDRESS RR#1 OMEMEE ONT	
NAME OF DRILLER OR BORER	LICENCE NUMBER
HERB LANG	3367
SIGNATURE OF CONTRACTOR: Herb Lang	SUBMISSION DATE DAY 6 MO. 3 YR 86

MINISTRY OF THE ENVIRONMENT COPY

OFFICE USE ONLY

DATA SOURCE	CONTRACTOR	080486
DATE OF INSPECTION	INSPECTOR	
REMARKS		

CSS.ES

FORM NO. 0506—4—77 FORM 7

Ontario **Ministry of Environment and Energy**

The Ontario Water Resources Act
WATER WELL RECORD

Print only in spaces provided.
Mark correct box with a checkmark, where applicable.

11 (1 2) **5119557** Municipality 51005 (10 14) Con. CON (15 22 23 24) 04

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot (25-27)
Peterborough	CAVENDISH TOWNSHIP	Concession 4	16
[redacted]	Address of Well Location: Community Complex Dr, County Rd 507, Buckhorn	Date completed: 3 (day) 9 (month) 33 (year)	

21 (1 2) UTM: Zone (10) Easting (12 17) Northing (18 24) RC (25) Elevation (26) RC (30) Basin Code (31) ii iii iv (47)

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
Brown	Sand	Stones	Loose	0'	10'
Black	Granite		Medium	10'	110'
Blk-White	Granite	Mica	Medium	110'	150'
Black	Granite		Medium	150'	202'

31 (10 14 15 21 32 43 54 65 75 80)
32

41 WATER RECORD

Water found at - feet (10-13)	Kind of water (14)	(19)	(24)	(29)	(34)	(60)
100	1 ☒ Fresh 2 ☐ Salty	3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas				
(15-18)	1 ☐ Fresh 2 ☐ Salty	3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas				
(20-23)	1 ☐ Fresh 2 ☐ Salty	3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas				
(25-28)	1 ☐ Fresh 2 ☐ Salty	3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas				
(30-33)	1 ☐ Fresh 2 ☐ Salty	3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas				

51 CASING & OPEN HOLE RECORD

Inside diam inches (10-11)	Material (12)	Wall thickness inches	Depth - feet From	Depth - feet To (13-16)
6 1/4	1 ☒ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	.188	0'	22'
(17-18)	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☒ Open hole 5 ☐ Plastic (19)		20'	202 (20-23)
(24-25)	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic (26)			(27-30)

SCREEN

Sizes of opening (Slot No.) (31-33)	Diameter inches (34-38)	Length feet (39-40)
Material and type	Depth at top of screen feet (41-44)	(30)

61 PLUGGING & SEALING RECORD

☐ Annular space ☐ Abandonment

Depth set at - feet From (13-16)	To (14-17)	Material and type (Cement grout, bentonite, etc.)
0	20	Bensea Grout
(18-21)	(22-25)	
(26-29)	(30-33)	(80)

71 PUMPING TEST

Pumping test method (10): 1 ☐ Pump 2 ☒ Bailer — AIR
Pumping rate (11-14): 5 GPM
Duration of pumping (15-16): 1 Hours (17-18): 0 Mins

Static level (19-21)	Water level end of pumping (22-24)	Water levels during (25): 1 ☐ Pumping 2 ☒ Recovery			
6 feet	200 feet	15 minutes (26-28): 150 feet	30 minutes (29-31): 100 feet	45 minutes (32-34): 50 feet	60 minutes (35-37): 6 feet
If flowing give rate (38-41) GPM		Pump intake set at: 190 feet		Water at end of test (42): ☒ Clear ☐ Cloudy	
Recommended pump type: ☐ Shallow ☒ Deep		Recommended pump setting (43-45): 190 feet		Recommended pump rate (46-49): 5 GPM	

(50-53)

FINAL STATUS OF WELL (54)

1 ☒ Water supply
2 ☐ Observation well
3 ☐ Test hole
4 ☐ Recharge well
5 ☐ Abandoned, insufficient supply
6 ☐ Abandoned, poor quality
7 ☐ Abandoned (Other)
8 ☐ Dewatering
9 ☐ Unfinished
10 ☐ Replacement well

WATER USE (55-56)

ICE SKATING RINK

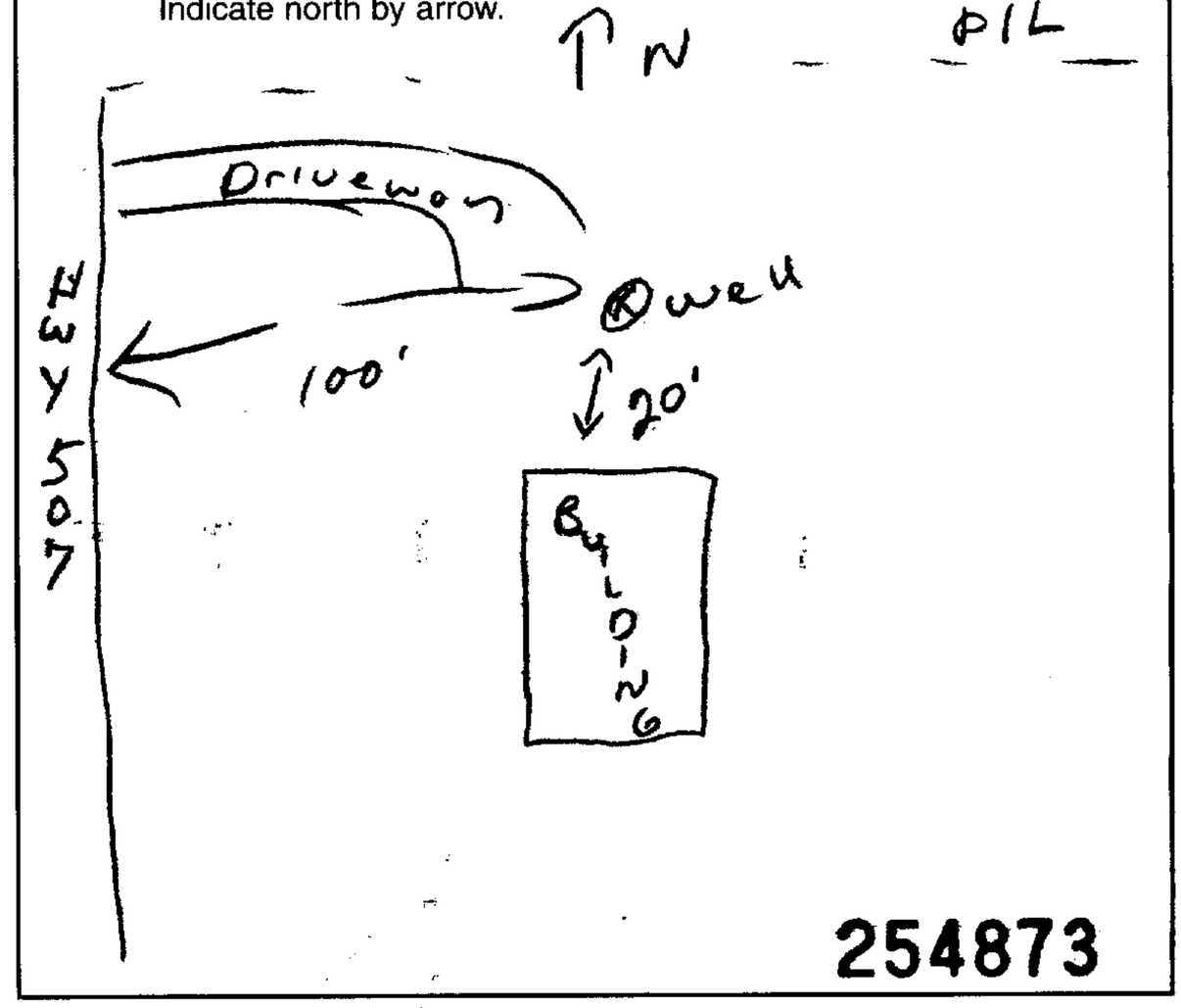
1 ☐ Domestic
2 ☐ Stock
3 ☐ Irrigation
4 ☐ Industrial
5 ☐ Commercial
6 ☐ Municipal
7 ☐ Public supply
8 ☐ Cooling & air conditioning
9 ☐ Not use
10 ☐ Other

METHOD OF CONSTRUCTION (57)

1 ☐ Cable tool
2 ☐ Rotary (conventional)
3 ☐ Rotary (reverse)
4 ☐ Rotary (air)
5 ☒ Air percussion
6 ☐ Boring
7 ☐ Diamond
8 ☐ Jetting
9 ☐ Driving
10 ☐ Digging
11 ☐ Other

LOCATION OF WELL

In diagram below show distances of well from road and lot line.
Indicate north by arrow.



254873

Name of Well Contractor	Well Contractor's Licence No.
Titus Well Drilling	5020
Address: Booderham	
Name of Well Technician: Carm Titus	Well Technician's Licence No.: T0412
Signature of Technician/Contractor	Submission date: day 30 mo 9 yr 3

MINISTRY USE ONLY

Data source (58)	Contractor (59-62)	Date received (63-68) (80)
	5020	SEP 10 2003
Date of inspection	Inspector	
Remarks		

CONFIRMED

2 - MINISTRY OF ENVIRONMENT AND ENERGY COPY

0506 (06/02) Front Form 9

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 (1 2)

5114209

MUNICIP. 51005 (10 14)

CON. CON 04 (15 22 23 24)

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON BLOCK, TRACT, SURVEY, ETC	LOT (25-27)
PETERBOROUGH	CAVANDISH	CONC. 4	16

[redacted] SS

CAVANDISH COMMUNITY CENTRE, BOX 265

DATE COMPLETED (48-53) DAY 10 MO 11 YR 89

21 (1 2) UTM ZONE (10) EASTING (12-17) NORTHING (18-24) RC (25) ELEVATION (26) RC (30) BASIN CODE (31) II III IV (47)

BUCKHORN, ONTARIO K0C 1J0

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
BROWN	FILL	ROCKS		0	14
GREY	GRANITE			14	80
RED	GRANITE			80	200
BLACK	GRANITE			200	207
RED	GRANITE			207	220

31

32 (1 2 10 14 15 21 32 43 54 65 75 80)

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
(10-13) 205	(14) 1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
(15-18)	(19) 1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
(20-23)	(24) 1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
(25-28)	(29) 1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
(30-33)	(34) (80) 1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
(10-11) 6 1/4"	(12) 1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE 5 ☐ PLASTIC	.188	0	(13-16) 22
(17-18)	(19) 1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE 5 ☐ PLASTIC			(20-23)
(24-25)	(26) 1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE 5 ☐ PLASTIC			(27-30)

SCREEN

SIZE(S) OF OPENING (SLOT NO.) (31-33)	DIAMETER (34-38) INCHES	LENGTH (39-40) FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN (41-44) FEET	(80)

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT LEAD PACKER, ETC.)
(10-13)	(14-17)	
(18-21)	(22-25)	
(26-29)	(30-33)	(80)

PUMPING TEST

71 X

PUMPING TEST METHOD (10)	PUMPING RATE (11-14)	DURATION OF PUMPING (15-16 HOURS, 17-18 MINS)
1 ☒ PUMP 2 ☐ BAILER	15 GPM	1 HOURS 10 MINS

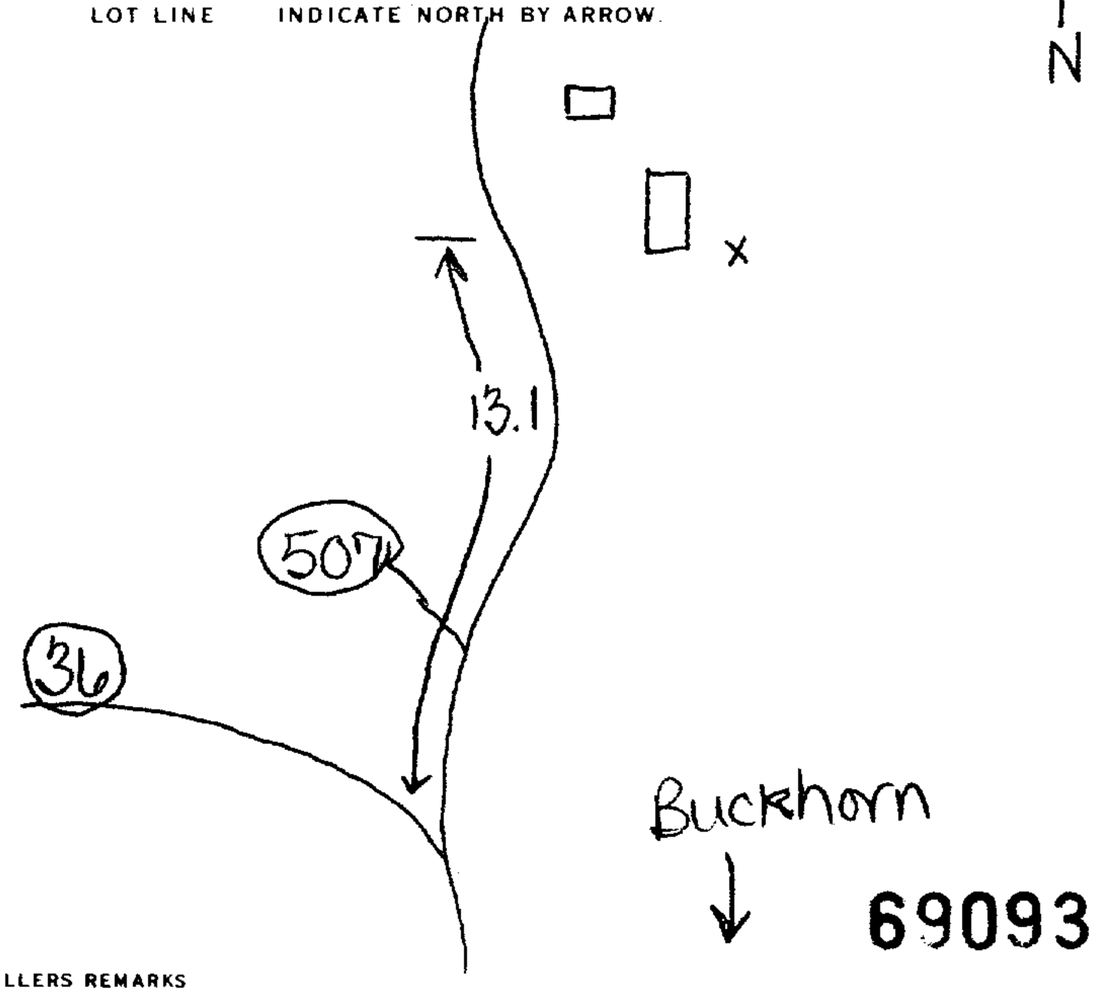
STATIC LEVEL (19-21)	WATER LEVEL END OF PUMPING (22-24)	(25) WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY			
		15 MINUTES (26-28)	30 MINUTES (29-31)	45 MINUTES (32-34)	60 MINUTES (35-37)
38 FEET	180 FEET	60 FEET	90 FEET	120 FEET	180 FEET

IF FLOWING, GIVE RATE (38-41)	PUMP INTAKE SET AT	WATER AT END OF TEST (42)
GPM	FEET	1 ☒ CLEAR 2 ☐ CLOUDY
RECOMMENDED PUMP TYPE	**RECOMMENDED PUMP SETTING (43-45)**	**RECOMMENDED PUMPING RATE (46-49)**
☐ SHALLOW ☒ DEEP	180 FEET	15 GPM

(50-53)

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS

FINAL STATUS OF WELL (54)

1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED ☐ DEWATERING

WATER USE (55-56)

1 ☐ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☒ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED

METHOD OF CONSTRUCTION (57)

1 ☐ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☒ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING ☐ DIGGING ☐ OTHER

CONTRACTOR

NAME OF WELL CONTRACTOR: FAULKNER WELL DRILLING CO. LTD.

WELL CONTRACTOR'S LICENCE NUMBER: 2104

ADDRESS: 789 Erskine Avenue, Peterborough

NAME OF WELL TECHNICIAN: ROBERT McLEAN

WELL TECHNICIAN'S LICENCE NUMBER: T013

SIGNATURE OF TECHNICIAN/CONTRACTOR: Ian Faulkner

SUBMISSION DATE: DAY 10 MO 11 YR 89

OFFICE USE ONLY

DATA SOURCE (58)

CONTRACTOR (59-62): 2104

DATE RECEIVED (63-68): NOV 17 1989 (80)

DATE OF INSPECTION

INSPECTOR

REMARKS

CSS.ES

Ontario Ministry of the Environment

Measurements recorded in: [x] Metric [ ] Imperial

Well Tag No. (Place Sticker and/or Print Below) **A 089053** A089053

679 / A089053

Well Record

Regulation 903 Ontario Water Resources Act

Page ______ of ______

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	[ ] Well Constructed by Well Owner
TOWNSHIP OF GALWAY CAVENDISH AND HARVEY			

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
		ON		

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Catchacoma Landfill			

County/District/Municipality	City/Town/Village	Province	Postal Code
	Catchacoma	Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	17	710707	4935157		WKQ-001857 A 0 - A 02

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
BRN	ORGANICS	SAND.	LOOSE.	0	1.83

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0	0.3	CONCRETE.	
0.3	0.6	BENTONITE.	
0.6	1.83	SAND.	

Method of Construction

[ ] Cable Tool [ ] Diamond [ ] Rotary (Conventional) [ ] Jetting [ ] Rotary (Reverse) [ ] Driving [ ] Boring [ ] Digging [ ] Air percussion [x] Other, specify Direct Push

Well Use

[ ] Public [ ] Commercial [ ] Not used [ ] Domestic [ ] Municipal [ ] Dewatering [ ] Livestock [x] Test Hole [x] Monitoring [ ] Irrigation [ ] Cooling & Air Conditioning [ ] Industrial [ ] Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To
3.45	PLASTIC	.356	0	0.6

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	To
~~3.56~~ 4.71	PLASTIC	10	0.6	1.83

Status of Well

[ ] Water Supply [ ] Replacement Well [x] Test Hole [ ] Recharge Well [ ] Dewatering Well [x] Observation and/or Monitoring Hole [ ] Alteration (Construction) [ ] Abandoned, Insufficient Supply [ ] Abandoned, Poor Water Quality [ ] Abandoned, other, specify [ ] Other, specify

Water Details

Water found at Depth ____ (m/ft) Kind of Water: [ ] Fresh [ ] Untested [ ] Gas [ ] Other, specify

Water found at Depth ____ (m/ft) Kind of Water: [ ] Fresh [ ] Untested [ ] Gas [ ] Other, specify

Water found at Depth ____ (m/ft) Kind of Water: [ ] Fresh [ ] Untested [ ] Gas [ ] Other, specify

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	1.83	5.71

Results of Well Yield Testing

After test of well yield, water was: [ ] Clear and sand free [ ] Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping ____ hrs + ____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min / GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min / GPM)

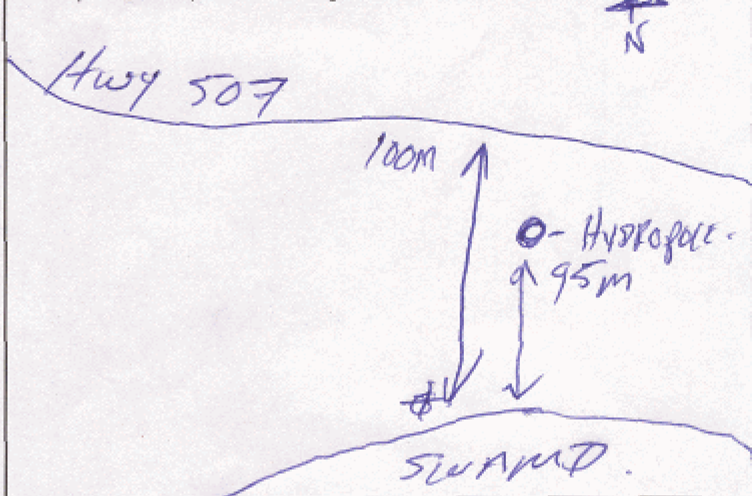
Well production (l/min / GPM)

Disinfected? [ ] Yes [ ] No

Draw Down Time (min)	Water Level (m/ft)	Recovery Time (min)	Water Level (m/ft)
Static Level			
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	
40		40	
50		50	
60		60	

Map of Well Location

Please provide a map below following instructions on the back.



Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Strata Soil Sampling Inc.	7241

Business Address (Street Number/Name)	Municipality
147-2 West Beaver Creek Road	Richmond Hill

Province	Postal Code	Business E-mail Address
Ontario	L4B 1C6	wrecords@stratasoil.com

Bus.Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
905-764-9304	Robinson Travis

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3154		20091105

Comments: General contractor: [redacted]

Well owner's information package delivered [ ] Yes [x] No

Date Package Delivered YYYY MM DD

Date Work Completed 2009 06 30

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2

Ontario Ministry of the Environment

Measurements recorded in: ☑ Metric ☐ Imperial

A 092407 (and/or Print Below) A092407

6797

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
	TOWNSHIP OF GALWAY CAVENDISH AND HARVEY.		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
		ON		

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Catchacoma Landfill			

County/District/Municipality	City/Town/Village	Province	Postal Code
	Catchacoma	Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 8 3	17	708389955080			WKQ-001857 A 0 - A 02

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
BRN	ORGANICS	SAND	SOFT.	0	1.83

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0	0.3	CONCRETE.	
0.3	0.6	BENTONITE.	
0.6	1.83	SAND.	

Method of Construction

☐ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☐ Air percussion
☒ Other, specify Direct Push

Well Use

☐ Public ☐ Commercial ☐ Not used
☐ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☒ Test Hole ☒ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
3.45	PLASTIC	.356	0	0.6

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To
4.71	PLASTIC	10	0.6	1.83

Status of Well

☐ Water Supply
☐ Replacement Well
☒ Test Hole
☐ Recharge Well
☐ Dewatering Well
☒ Observation and/or Monitoring Hole
☐ Alteration (Construction)
☐ Abandoned, Insufficient Supply
☐ Abandoned, Poor Water Quality
☐ Abandoned, other, specify
☐ Other, specify

Water Details

Water found at Depth (m/ft)	Gas	Kind of Water: Fresh	Untested	Other, specify
	☐	☐	☐	
	☐	☐	☐	
	☐	☐	☐	

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0	1.83	5.7

Results of Well Yield Testing

After test of well yield, water was:
☐ Clear and sand free
☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping ____ hrs + ____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min / GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min / GPM)

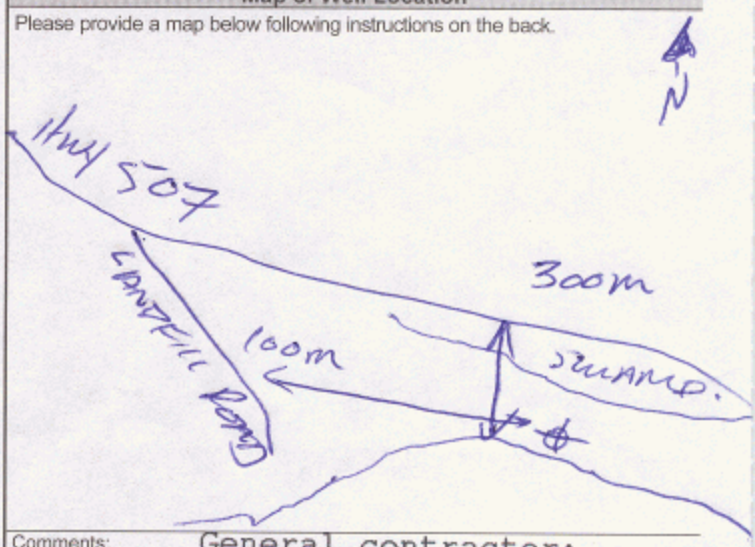
Well production (l/min / GPM)

Disinfected? ☐ Yes ☐ No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level				
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	

Map of Well Location

Please provide a map below following instructions on the back.



Comments: General contractor: [redacted]

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Strata Soil Sampling Inc.	7241

Business Address (Street Number/Name)	Municipality
147-2 West Beaver Creek Road	Richmond Hill

Province	Postal Code	Business E-mail Address
Ontario	L4B 1C6	wrecords@stratasoil.com

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
905+764-9304	Queen Lewis

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3159		2009/10/05

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☐ Yes ☒ No		2009/10/30

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