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Civil • Geotechnical •
Structural • Environmental •
Hydrogeology •

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REPORT ON

HYDROGEOLOGICAL INVESTIGATION
7409 CENOTE ROAD
OSGOODE WARD
CITY OF OTTAWA
ONTARIO

Submitted to:

Capital Truck Sales
7409 Cenote Road
Metcalfe, ON
K0A 2P0

DATE September 10, 2019

DISTRIBUTION

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September 10, 2019 180138

Capital Truck Sales
7409 Cenote Road
Metcalfe, ON
K0A 2P0

RE: HYDROGEOLOGICAL AND TERRAIN INVESTIGATION
PROPOSED COMMERCIAL ADDITION
CAPITAL TRUCK SALES
7409 CENOTE ROAD
OSGOODE, ONTARIO

Dear Sir/Madam:

This letter presents the results of an evaluation of the water quality and quantity for a water supply well that services the existing commercial development at the subject property. It is currently proposed to construct an addition to the existing garage.

It is understood that the proposed development consists of a 325 square metre addition to the existing commercial building on the site. It is understood that the proposed addition is intended to be used for storage of merchandise. The original septic system design was completed by Morey Houle Chevrier Eng. Ltd in 2000.

The subject property consists of an existing building serviced by a drilled well and a sewage system. A Site Plan drawing, 180138-SP, is provided herein which indicates the location of the existing building and proposed addition and the locations of the existing well and sewage system.

The well in question was constructed by Olympic Drilling Company Ltd. of Metcalfe, Ontario on April 17, 2001. A Ministry of the Environment Well Record for the subject well (TW1) is provided as Attachment A.

This report consists of an evaluation of the water quality and quantity for the existing water supply well to ensure that the water quality and quantity of the subject well are adequate to meet the requirements of the existing and proposed use. The assessment is carried out using the following guidelines; Ministry of the Environment and Climate Change (MOECC) Guideline D-5-5 and the Ontario Drinking Water Standards, Objectives and Guidelines (ODWSOG).

Groundwater Supply Evaluation

The well was constructed to a depth of about 18.3 metres. It is indicated that the overburden encountered at the well consists of about 4.9 metres of soil consisting of sand with sand and stones listed as the secondary material on the well record. The well was drilled into the underlying limestone to a depth of 18.3 metres below the existing ground surface.

A review of five area well records was carried out. The well records indicate that three of the area wells are of depths of 14.6 to 21 metres within limestone. Two of the well records are indicated to be deeper at 58 to 61 metres and encountered limestone followed by sandstone. The overburden thickness reported on the area well records varies from 0 to 4 metres in thickness. The recommended pumping rates were 30 litres per minute or greater on all five well records. The well records for area wells are provided in Attachment A.

Based on this assessment, it is considered that the water supply well at the site is similar in construction to other wells and is obtaining water from the same aquifer.

Water Quantity

In order to establish the water demand for the subject property, the sewage system permit that currently services the site was reviewed. The sewage permit documents are provided as Attachment B. The septic design flows at the time were calculated to be 800 L/day based on the Township of Osgoode Sewerage System Application No. 00-186. The design septic flow is based on the number of fixtures, including two full bathrooms and two additional laundry tubs, for a total of 16 fixture units.

The proposed building addition is intended for storage or merchandise only. The merchandise distributed by Capital Truck Sales in general consists of medium and heavy duty used trucks. The addition will not result in additional employees, office space or warehouse bays. As such, the addition will not result in an increase in the sanitary flow for the site.

The Ontario Ministry of the Environment Well Record provided for the well by the well driller contains the results of well yield testing. The yield test results indicate that the well was pumped for one hour at a pumping rate of about 37.8 litres per minute. During the pumping test, the water level in the well is indicated to have dropped some 5.5 metres. No information was provided on the well record with regards to recovery of water levels after the yield test was carried out. However, using the recommended pump depth of 15 metres on the well record and the reported drawdown, the well still had about 5.2 metres of available drawdown available at the end of the test.

To calculate the water demand for the water supply well, the following was considered.

The sewage design flow consisted of 800 litres per day. Since sewage system design is based on the maximum expected daily use, it is equivalent to the Average Daily Demand (ADD). The ADD is based on an eight hour operation schedule (i.e. full day occurs over an eight hour period and not over 24 hours

City of Ottawa calculates the Maximum Hour Demand (MHD) for a commercial or industrial demand to be 1.8 x ADD

ADD = 800 litres/day x 1 day / 8 hours x 1 hour / 60 minutes

= 1.7 litres/minute

MHD = 1.8 x ADD
= 1.8 x 1.7 litres/minute
= 3.1 litres/minute

Based on the above, the Maximum Hourly Demand for the site based on its proposed use is expected to be about 3.1 litres per minute.

Based on the maximum daily demand of 800 litres and the maximum peak water demand of 3.1 litres per minute, it is considered that the well water quantity, indicated to be capable of a flow rate of up to 37.8 litres per minute is sufficient to meet the daily and peak hourly demand.

The business that is operating at the site has been occupied by the same owner (Capital Truck Sales operated by Steve Carmichael) since the well was constructed in 2001. The owner indicates that there have been no issues with the operation of the well since that time. There have been no reported water shortages.

Based on the above noted information, it is considered that the well supply is adequate to provide the commercial use of the site, including the addition which will not contribute any additional fixtures or employees.

Water Quality

To determine the water quality of the groundwater supply, a groundwater sample was obtained from a fixture inside the building on July 23, 2019. The water sample was subsequently prepared/preserved in the field using appropriate techniques and submitted to Eurofins Environmental Testing in Ottawa, Ontario for the chemical, physical and bacteriological analyses listed in the Ministry of the Environment (MOE) guideline entitled Procedure D-5-5, Technical Guideline for Private Wells: Water Supply Assessment, August 1996. The results of the chemical, physical and bacteriological analyses of the water sample obtained from the test well are provided as Attachment C.

The water quality as determined from the results of the analyses is acceptable. The water meets all the Ontario Drinking Water Standards (ODWS) health and aesthetic parameters tested for at the well except for aesthetic objectives for hardness and total dissolved solids. Sodium is also above the medical advisory limit of 20 mg/l for those on sodium reduced diets, but is within the aesthetic objective of 200 mg/l. Initial bacteriological testing results had the presence of both total and faecal coliforms at levels of 2 counts per 100 ml, respectively, with E. Coli absent.

Hardness

The water is considered to be very hard by water treatment standards. Water with hardness above 80 to 100 milligrams per litre as $CaC0_3$ is often softened for domestic use. The hardness at the well is 533 milligrams per litre. Normally, water is treated through the use of a water softener to reduce hardness. In this case, the hardness provides some potential for scale formation which can reduce the corrosive potential of the water supply. It is strongly recommended that no water treatment to reduce hardness should be used for the water supply. The owner indicated that there is currently no water softener or other water treatment system in use for the water.

Total Dissolved Solids

The total dissolved solids (TDS) were measured at 1130 milligrams per litre, above the ODWS of 500 milligrams per litre. The Ryznar Stability Index (RSI) and Langelier Saturation Index (LSI) were calculated for the sample obtained and gave an RSI value of ~6.4, and LSI of ~0.7, respectively, indicating that the water may have slight tendency to scale. The LSI is above zero but not by much, which indicates that there is only borderline scale potential. The effect of elevated TDS levels on drinking water depends on the individual components, which are principally chlorides, sulphates, calcium, magnesium and bicarbonates. Depending on which parameters are elevated, TDS exceedances can include hardness, taste, mineral deposition or corrosion. In this case, the water samples had high levels of hardness, higher levels of chlorides and sodium. In this case, the effect of elevated TDS is considered to be the potential for scale and the taste could be somewhat impacted by sodium and chloride levels. All of the above noted parameters may be removed by reverse osmosis. However reverse osmosis systems require high water pressure, are relatively costly and increase water demand. They are typically only used to treat water used for drinking and consumption. The water supply for the site is for a commercial user, for sinks and toilets for employees. The site is not for domestic uses (i.e. no cooking or human consumption). Therefore, there are no concerns with making the water palatable for human consumption. The owner also indicated that they have never consumed the water.

Sodium

The sodium level is 178 mg/l, which is above the aesthetic objective and the medical advisory limit of 20 mg/l. The ODWSOG states that *"the local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/l so that this information may be communicated to local physicians for their use with patients on sodium restricted diets."*

In this case, the water is not for domestic use nor intended for human consumption, so treatment to reduce sodium is not required for that purpose.

Bacteriological Water Quality

Initial bacteriological testing results had the presence of both total and faecal coliforms at levels of 2 counts per 100 ml, respectively, with E. Coli absent. The owner carried out a shock chlorination procedure at the well. Kollaard Associates Inc. carried out a subsequent site visit on July 30, 2019. The free chlorine level was checked and was found to be zero. A subsequent water test indicated that faecal coliforms of 0 counts per 100 ml and 1 total coliforms per 100 ml, respectively. Kollaard Associates Inc. has no concerns with the bacteriological quality of the water supply.

The owner has indicated that the water supply at the site is not used for consumption. This means that it is likely that water potability tests (bacteriological water quality) are not carried out on a regular basis. Based on the results of this assessment, Kollaard Associates Inc. recommends the following.

It is recommended that bottled water is supplied for employees for drinking water purposes through a water dispenser (water cooler). All of the water faucets within the building should be labelled "Not intended for human consumption".

Terrain Analysis

The surficial geology map indicates that the site is underlain by Paleozoic bedrock with possible thin veneers of coarse soils up to 3 metres in thickness. The well record for the site indicates that there is about 4.9 metres of soil overlying the bedrock at the site. Test pits were put down at the site as part of a geotechnical investigation in the area of the proposed addition. The test pits encountered about 1.7 to 2.1 metres of soil, consisting of crushed stone, sand, gravel, with traces of concrete, brick, asphalt, ash. The soils were described as fill materials.

In this case, there is no increase in sewage flows at the site. The addition will consist only of additional interior storage space for vehicles. There will be no increase in employees or fixtures as a result of the proposed development. As a result, no application for a sewage permit is being carried out and no changes to the sewage system are proposed. Based on this, no groundwater impact assessment is necessary for the current Site Plan application.

Wellhead Protection

The attached Site Plan shows the location of the existing well and the sewage system. The well is indicated to be located within a grassy area and the well casing extends about 0.43 metres above the ground surface.

Recommendations for wellhead protection include ensuring that potential contaminant sources are at least 15 metres and preferably at least 30 metres or more from the well. Possible contaminant sources include; chemical storage, snow storage, garage and related chemicals, such as antifreeze, gasoline, oils, vehicle/boat/equipment storage, sewer lines, septic systems, animal enclosures, manure or compost piles.

Recommendations for well maintenance include; inspect wellhead annually to ensure that the casing is structurally sound, verify well cap is sealed and that surface water is not pooling around wellhead. The well is located adjacent to the building and is easily accessible for maintenance/repairs.

Based on the results of this evaluation it is considered that the well in question should supply water of adequate quantity and quality for the proposed development with suitable wellhead protection as indicated above. The impact of the use of the well at the proposed development on neighbouring existing wells is expected to be minimal.

We trust this letter provides sufficient information for your purposes. If you have any questions concerning this letter, please do not hesitate to contact our office.

Recommendation

The following recommendation is made in light of information provided by the owner of the business at the site who indicated that water is not consumed and routine bacteriological testing is not carried out.

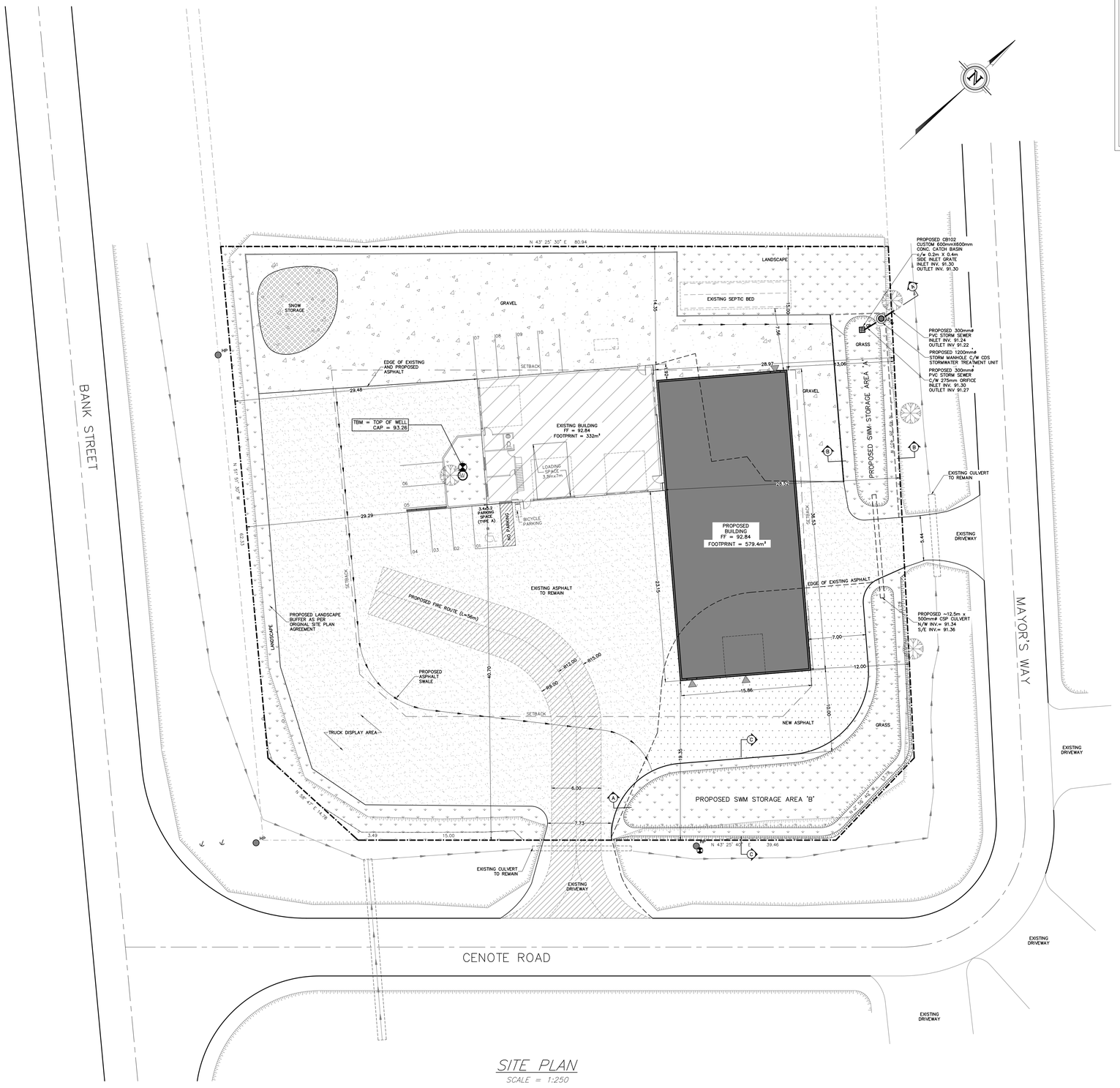
It is recommended that bottled water is supplied for employees for drinking water purposes through a water dispenser (water cooler). All of the water faucets within the building should be labelled “Not intended for human consumption”.

Yours truly,

Kollaard Associates Inc.

Colleen Vermeersch, P. Eng.

Attachments: Figure 1 – Site Plan 180138-SP
Attachment A – Well Record for Supply Well and Area Well Records
Attachment B – Sewage System Permit Documents
Attachment C – Water Quality Testing Results



SITE PLAN
SCALE = 1:250

HATCHING LEGEND:

- GRASS
- GRAVEL
- EXISTING ASPHALT
- NEW ASPHALT
- FIRE ROUTE

LEGEND

- EXISTING ELEVATION
- PROPOSED/EXISTING ELEVATIONS
- PROPOSED ELEVATION
- DRAINAGE SLOPE
- EXISTING DRAINAGE
- CENTRELINE OF ROAD
- EDGE OF ROAD
- TOP OF SLOPE
- PROPERTY LINE
- UTILITY WIRES
- SILT FENCE
- OVERHEAD WIRE
- EXISTING HYDRO POLE
- EXISTING HYDRO GUY WIRE ANCHOR
- EXISTING CONIFEROUS TREE
- EXISTING WELL
- OVERLAND FLOW ROUTE
- BUILDING ENTRANCE LOCATION
- TEMPORARY BENCHMARK

RG (RURAL GENERAL INDUSTRIAL ZONE) PROVISIONS:

ZONING MECHANISMS		REQUIRED	PROVIDED
(a) Minimum lot width (m)		30	57.95
(b) Minimum lot area (m²)		4,000	5,624
(c) Minimum front yard setback (m)		15	19.35
(d) Minimum rear yard setback (m)		15	15
(e) Minimum interior side yard setback (m)	(i) Abutting a RG, RH or RC zone	3	NA
	(ii) Other cases	8	NA
(f) Minimum corner side yard setback (m)		12	SW=29.29/NE=12
(g) Maximum principal building height (m)		15	7.1
(h) Maximum lot coverage (%)		50	16.12%
(i) Outdoor storage		(a) outside storage is not permitted within any required front yard or corner side yard b) outside storage must be screened from abutting residential uses or zones and public streets by an opaque screen at Least 1.8 m in height from finished grade)	

PARKING REQUIREMENTS:

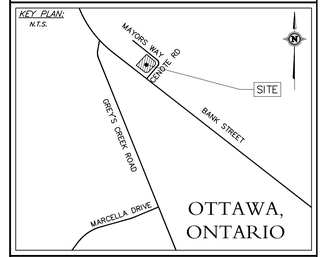
VEHICULAR PARKING REQUIRED	PROVIDED
LIGHT INDUSTRIAL = 0.8/100m² GFA = 7 SPACES	
ACCESSORY OFFICE = 2.4/100m² GFA = 2 SPACES	
TOTAL = 9 SPACES	9 SPACES
ACCESSIBLE PARKING REQUIRED	
1 TYPE A	1 SPACE
LOADING SPACE REQUIRED	
1 PER 350–999m² GFA	1 SPACE
BICYCLE PARKING REQUIRED	
LIGHT INDUSTRIAL = 1 PER 1500m² GFA = 0.58 SPACES	
ACCESSORY OFFICE = 1 PER 250m² GFA = 0.26 SPACE	
TOTAL = 0.84 ~ 1 SPACE	1 SPACE

SITE STATISTICS:

TOTAL LOT AREA		5624.20 m²
BUILDING FOOTPRINT (TOTAL)		907.00 m²
EXISTING		327.60 m²
OFFICE GFA (2 FLOORS @ 31.9m)	63.80 m²	
LIGHT INDUSTRIAL GFA	295.70 m²	
PROPOSED		579.40 m²
LIGHT INDUSTRIAL GFA	579.40 m²	
ASPHALT AREA		2486.18 m²
GRAVEL AREA		1004.65 m²
LANDSCAPED AREA		1226.37 m²

DRAWING NUMBER: 180138–SP

KEY PLAN: N.T.S.



SCALE: 0 1 2 3 4 5 10 15 20
1:250 METRES

GENERAL NOTES:

1. All dimensions are in metres; all elevations are in metres and are geodetic. TBM = Top of existing well cap on site adjacent the existing building. Elevation= 93.26.
2. This is not a legal survey. Boundary information was derived from Plan 4R–15669 "Plan of survey of part W 1/2 Lot 11, Concession 6, Township of Osgoode, Regional Municipality of Ottawa–Carelton" completed by W.J. Johnston Ltd. on May 11, 2000, Project # J–049–00A.
3. Contractor is responsible for location and protection of utilities.
4. All dimensions to be verified on site by contractor prior to construction.
5. Any changes made to this plan must be verified and approved by Kollaard Associates Inc.
6. Client is responsible for acquiring all necessary permits. This drawing is not for construction until a building permit has been granted.
7. The proposed grades have been set and verified for site grading control only. The grade raise at the building location should be verified with regard to subsurface conditions by qualified geotechnical personnel after completion of the excavation.
8. The underside of footing elevation has been set based on the information available and may not have accounted for actual ground water conditions at the exact house location and should be verified by qualified geotechnical personnel upon completion of the excavation.
9. A geotechnical engineer should be retained to provide recommendations with respect to the sub–grade conditions prior to footing installation.
10. All materials and construction to be in accordance with City of Ottawa standards and Ontario Provincial Standards and Specifications; sewer and watermain material types; disinfection, provide minimum 2.4 metres of cover for water services, cathodic protection, City of Ottawa insulation specifications for watermain, pipe bedding, reinstatement of disturbed areas and leakage testing.
11. Reference to Kollaard file #180138 for Storm Water Management Design, Kollaard file #180138 for Servicing Brief Report and Geotechnical Report file #180138.

No.	REVISION	DATE	BY
0	ISSUED FOR SITE PLAN CONTROL APPLICATION	2020/02/25	RR
#	REVISION ITEM / DESCRIPTION	REV. DATE	INT.

Kollaard Associates Engineers
(613) 860–0923
info@kollaard.ca
P.O. BOX 189, 210 PRESCOTT ST.
KEMPTVILLE, ONTARIO
KOG 1JO FAX (613) 258–0475
http://www.kollaard.ca

CLIENT:
CAPITAL TRUCK SALES
7409 CENOTE ROAD
OTTAWA, ONTARIO
KOA 2P0

PROJECT:
PROPOSED ADDITION

LOCATION:
7409 CENOTE ROAD
CITY OF OTTAWA

LICENSED PROFESSIONAL ENGINEER
FEB. 25, 2020
S.E. deWit
100079612
PROVINCE OF ONTARIO

DESIGNED BY:	CHECKED BY:
––	––
DRAWN BY:	APPROVED BY:
––	––

DATE: APRIL 15, 2019
KOLLAARD FILE NUMBER: 180138

DRAWING NUMBER: 180138–SP

DRAWING NAME: SITE PLAN

ARCH D

ATTACHMENT A

MOE WELL RECORD
AND
AREA WELL RECORDS

Ontario Ministry of the Environment

The Ontario Water Resources Act

WATER WELL RECORD

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

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot
Ottawa-Carleton	Osgoode		
Owner's surname First Name	Address	Date completed 17 day 04 month 01 year	
Capital Truck Sales			

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	Sand & ~~Strata~~ Stones		0'	16'
Grey	Limestone	Fracture		16'	22'
Grey	Limestone	Med.		22'	60'

WATER RECORD

Water found at - feet	Kind of water		
30'	☐ Fresh ☐ Salty	☐ Sulphur ☐ Minerals ☐ Gas	
47'	☐ Fresh ☐ Salty	☐ Sulphur ☐ Minerals ☐ Gas	
55'	☐ Fresh ☐ Salty	☐ Sulphur ☐ Minerals ☐ Gas	
	☐ Fresh ☐ Salty	☐ Sulphur ☐ Minerals ☐ Gas	
	☐ Fresh ☐ Salty	☐ Sulphur ☐ Minerals ☐ Gas	

CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
8"	☐ Steel ☐ Galvanized ☐ Concrete ☒ Open hole ☐ Plastic		0'	22'
6"	☒ Steel ☐ Galvanized ☐ Concrete ☐ Open hole ☐ Plastic	.188	+ 2'	22'
6"	☐ Steel ☐ Galvanized ☐ Concrete ☒ Open hole ☐ Plastic		22'	60'

SCREEN

Sizes of opening (Slot No.)	Diameter inches	Length feet
Material and type	Depth at top of screen feet	

PLUGGING & SEALING RECORD

☐ Annular space ☐ Abandonment

Depth set at - feet From	Depth set at - feet To	Material and type (Cement grout, bentonite, etc.)
22'	0'	Cement grout
		6 sacks of high
		early cement

PUMPING TEST

Pumping test method	Pumping rate	Duration of pumping
☒ Pump ☐ Bailer	10 GPM	1 Hours 0 Mins

Static level	Water level end of pumping	Water levels during ☐ Pumping ☐ Recovery			
		15 minutes	30 minutes	45 minutes	60 minutes
15' feet	41' feet	23' feet	29' feet	35' feet	41' feet

If flowing give rate	Pump intake set at	Water at end of test
GPM	50' feet	☒ Clear ☐ Cloudy

Recommended pump type	Recommended pump setting	Recommended pump rate
☐ Shallow ☒ Deep	50' feet	10 GPM

FINAL STATUS OF WELL

☒ Water supply ☐ Observation well ☐ Test hole ☐ Recharge well
☐ Abandoned, insufficient supply ☐ Abandoned, poor quality ☐ Abandoned (Other) ☐ Dewatering
☐ Unfinished ☐ Replacement well

WATER USE

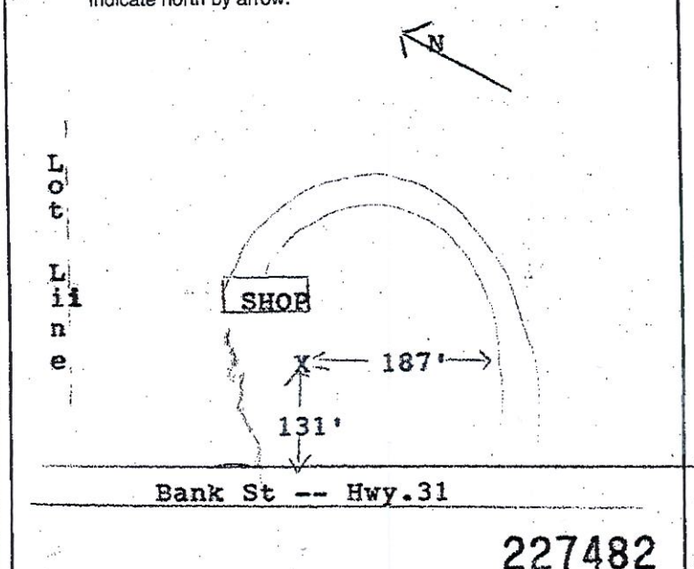
☐ Domestic ☐ Stock ☐ Irrigation ☐ Industrial
☒ Commercial ☐ Municipal ☐ Public supply ☐ Cooling & air conditioning
☐ Not use ☐ Other

METHOD OF CONSTRUCTION

☐ Cable tool ☐ Rotary (conventional) ☐ Rotary (reverse) ☐ Rotary (air) ☒
☐ Air percussion ☐ Boring ☐ Diamond ☐ Jetting
☐ Driving ☐ Digging ☐ Other

LOCATION OF WELL

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



227482

Name of Well Contractor	Well Contractor's Licence No.
OLYMPIC DRILLING CO.LTD.	~~XXXX~~ 4006
Address 2320 Scrivens Rd.Metcalfe Ont.K0A 2P0	
Name of Well Technician Wayne Renwick	Well Technician's Licence No. 327
Signature of Technician/Contractor Wayne Renwick	Submission date day 17 mo 04 01

MINISTRY USE ONLY

3 OWNER'S COPY

316/5a

UTM 18 V 14 5 18 0 6 0 E
18 R 0 1 0 7 6 0 N
Elev. 4 R 0 2 9 5

GROUND WATER BRANCH
NOV 1 1961 15
ONTARIO WATER RESOURCES COMMISSION

No 7268

The Ontario Water Resources Commission

WATER WELL RECORD

Basin 25 — County or District LEEDS & GRENVILLE — Township, Village, Town or City OSGOODE

Con. 6 — Lot 11 — Date completed 18 (day) Sept (month) 1961 (year)

[redacted] dress METCALFE ONT.

Casing and Screen Record

Inside diameter of casing 5 3/5"
Total length of casing 20'
Type of screen
Length of screen
Depth to top of screen
Diameter of finished hole 5 1/4"

Pumping Test

Static level 8'
Test-pumping rate 10 G.P.M.
Pumping level 23'
Duration of test pumping 1 hr
Water clear or cloudy at end of test cloudy
Recommended pumping rate 10 G.P.M.
with pump setting of 40' feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
Hardpan & Boulders	0	13	48	fresh
hard black lime	13	50	48	"

For what purpose(s) is the water to be used? household

Is well on upland, in valley, or on hillside? upland

Drilling or Boring Firm Capital Water Supply

Address 1243 Kilborn Rd

Licence Number

Name of Driller or Borer M. Kavanagh

Address Stittsville Ont

Date Sept 18 1961

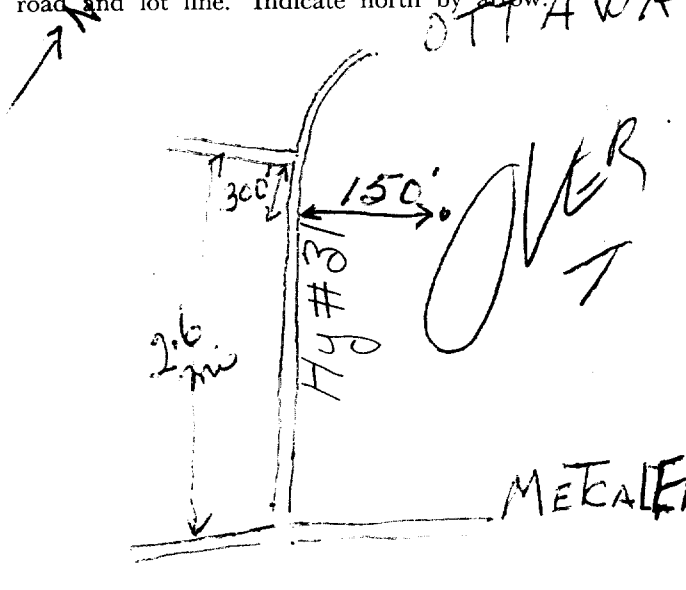
Walter Kavanagh
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M Sets 60-5930

OWRC COPY

Location of Well

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



MINISTRY OF THE ENVIRONMENT
The Ontario Water Resources Act

WATER WELL RECORD

ONTARIO

B

319/4h.

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

11 | 1513452 | MUNICIP. 15009 | CON. Con 06

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Carleton	Osgoode	6	~~12~~ 01

[redacted] R. # 3, Metcalfe, Ont.

DATE COMPLETED: DAY 25 MO. 09 YR. 93

1 2 1513452 18 456337 9010502 4 300 4 26 MAR 17, 1975 247

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
	Limestone			0	180
	Sandstone			180	193

31 0180 15 0193 18

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0193	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
06 64	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	0021
	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	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☒ PUMP 2 ☐ BAILER	0100 GPM	00 HOURS 15 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
016 FEET	025 FEET	1 ☒ PUMPING 2 ☐ RECOVERY	016 FEET	016 FEET	016 FEET	016 FEET

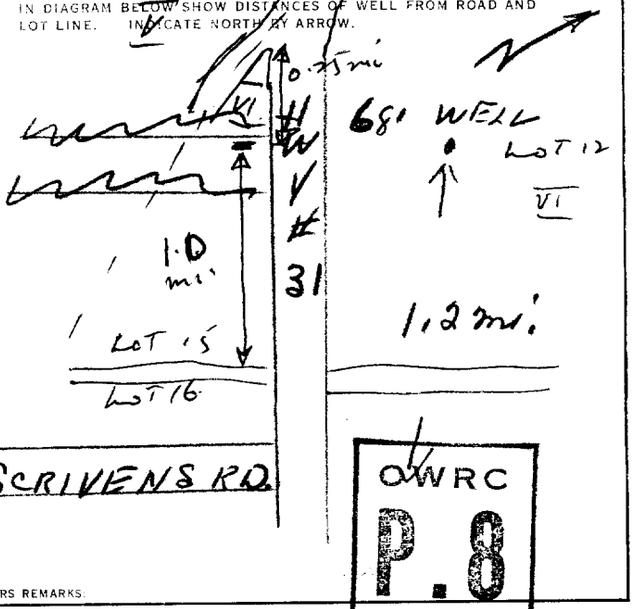
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM	FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☒ SHALLOW ☐ DEEP	035 FEET	0010 GPM

50-53 011.1 GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL

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



DRILLERS REMARKS:

OWRC P.8

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

WATER USE

55-56 05 ☐ 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

57 ☐ 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: McLean Water Supply Ltd. | LICENCE NUMBER: 3504

ADDRESS: 1532 Raven Ave. Ottawa, Ont.

NAME OF DRILLER OR BORER: R. Lasalle | LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: [signature] | SUBMISSION DATE: DAY 25 MO. 9 YR. 93

OFFICE USE ONLY

DATA SOURCE 58: 1 | CONTRACTOR 59-62: 3504 | DATE RECEIVED 63-68: 10 10 73 | 80

DATE OF INSPECTION | INSPECTOR

REMARKS: APL

P R

WI

MINISTRY OF THE ENVIRONMENT COPY

FORM 7 07-091

Ministry of the Environment
Ontario

S.O. 55792

The Ontario Water Resources Act

WATER WELL RECORD

1524252

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

11

MUNICIP 15009 CON. CON 196

COUNTY OR DISTRICT [redacted] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE [redacted] good. CON BLOCK, TRACT, SURVEY, ETC. 6. LOT 11

[redacted] bridge 1989 Corp 700 Hunt Cl. DATE COMPLETED DAY 13 MO 4 YR 89

ELEVATION RC BASIN CODE

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	TO
				0	2
GREY	LIMESTONE	BLACK LIMESTONE LAYERS	MED, HARD	2	70

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
35	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
45	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	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	TO
6 1/4	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE 5 ☐ PLASTIC	.188	0	22
6	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE 5 ☐ PLASTIC		22	70
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE 5 ☐ PLASTIC			

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.)
0	21	CEMENT GROUT.

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER

PUMPING RATE: 8 GPM

DURATION OF PUMPING: 2 HOURS ___ MINS

STATIC LEVEL: 13 FEET

WATER LEVEL END OF PUMPING: 50 FEET

WATER LEVELS DURING: 1 ☐ PUMPING 2 ☐ RECOVERY

15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
50 FEET	50 FEET	50 FEET	50 FEET

IF FLOWING, GIVE RATE: GPM

PUMP INTAKE SET AT: 50 FEET

WATER AT END OF TEST: 1 ☒ CLEAR 2 ☐ CLOUDY

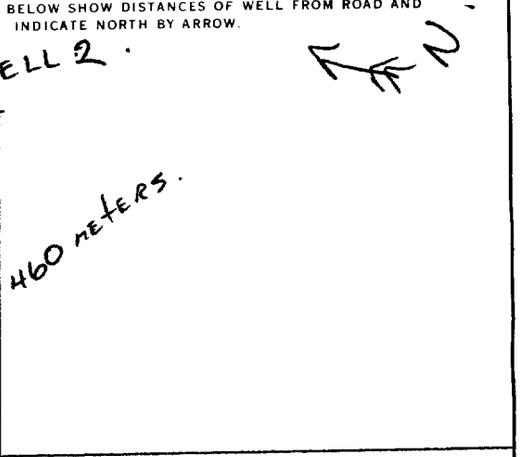
RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP

RECOMMENDED PUMP SETTING: 50 FEET

RECOMMENDED PUMPING RATE: 8 GPM

LOCATION OF WELL

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



59224

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 ☐ DEWATERING

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 CONSTRUCTION: 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: VALLEY DRILLING INC

WELL CONTRACTOR'S LICENCE NUMBER: 5222

ADDRESS: P.O. Box 437 CARP ONT

NAME OF WELL TECHNICIAN: BILL BISSON

WELL TECHNICIAN'S LICENCE NUMBER: T-0190.

SIGNATURE OF TECHNICIAN/CONTRACTOR

SUBMISSION DATE: DAY ___ MO. ___ YR. ___

OFFICE USE ONLY

DATA SOURCE | CONTRACTOR 5222 | DATE RECEIVED JAN 16 1990

DATE OF INSPECTION | INSPECTOR

REMARKS

CSS.fs

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506 (11/86) FORM 9

Ontario Ministry of the Environment

The Ontario Water Resources Act
WATER WELL RECORD

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

11 1532948 Municipality 15009 Con. CON 06

1414586 Ont Ltd.

County or District	Township/Borough/City/Town/Village	Con	block	tract	survey, etc.	Lot
Ottawa Carleton	Osgoode	6				12

[redacted]

Address: Greely, ONT

Date completed: 25 day 06 month 02 year

21 | UTM | Northing | RC | Elevation | RC | Basin Code | ii | iii | iv

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
	Sandy clay			0	14
grey	limestone			14	63

31

32

41 WATER RECORD

Water found at - feet	Kind of water
39	1 [x] Fresh 3 [ ] Sulphur 14; 2 [ ] Salty 4 [x] Minerals 6 [x] Gas
48	1 [x] Fresh 3 [ ] Sulphur 19; 2 [ ] Salty 4 [ ] Minerals 6 [ ] Gas
53	1 [x] Fresh 3 [ ] Sulphur 24; 2 [ ] Salty 4 [ ] Minerals 6 [ ] Gas
	1 [ ] Fresh 3 [ ] Sulphur 29; 2 [ ] Salty 4 [ ] Minerals 6 [ ] Gas
	1 [ ] Fresh 3 [ ] Sulphur 34; 2 [ ] Salty 4 [ ] Minerals 6 [ ] Gas

NOT FOUND

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
6 1/4	1 [x] Steel 2 [ ] Galvanized 3 [ ] Concrete 4 [ ] Open hole 5 [ ] Plastic	188	0	22
6 3/4	1 [ ] Steel 2 [ ] Galvanized 3 [ ] Concrete 4 [x] Open hole 5 [ ] Plastic		0	20
6	1 [ ] Steel 2 [ ] Galvanized 3 [ ] Concrete 4 [x] Open hole 5 [ ] Plastic		20	63

SCREEN

Sizes of opening (Slot No.)	Diameter inches	Length feet
Material and type	Depth at top of screen feet	

61 PLUGGING & SEALING RECORD

[x] Annular space [ ] Abandonment

Depth set at - feet From	Depth set at - feet To	Material and type (Cement grout, bentonite, etc.)
2	22	bentonite

71 PUMPING TEST

Pumping test method: 1 [x] Pump 2 [ ] Bailer

Pumping rate: 35 GPM

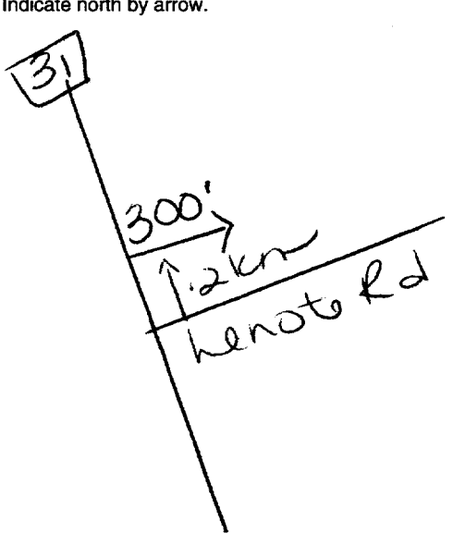
Duration of pumping: 1 Hours ... Mins

Static level	Water level end of pumping	Water levels during: 1 [ ] Pumping 2 [x] Recovery	15 minutes	30 minutes	45 minutes	60 minutes
7 feet	50 feet		7 feet	7 feet	7 feet	7 feet

If flowing give rate	Pump intake set at	Water at end of test	Recommended pump type	Recommended pump setting	Recommended pump rate
GPM	feet	[ ] Clear [x] Cloudy	[ ] Shallow [x] Deep	50 feet	35 GPM

LOCATION OF WELL

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



237919

FINAL STATUS OF WELL

54

1 [x] 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

1 [x] 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 [x] Air percussion
6 [ ] Boring
7 [ ] Diamond
8 [ ] Jetting
9 [ ] Driving
10 [ ] Digging
11 [ ] Other

Name of Well Contractor	Well Contractor's Licence No.
Arrow Drilling Ltd	1119
Address: RR#1 Richmond Ont	
Name of Well Technician: Shannon Purcell	Well Technician's Licence No. 12122
Signature of Technician/Contractor	Submission date: 24 day 07 mo 02 yr

MINISTRY USE ONLY

Data source 58	Contractor 59-62: 1119	Date received 63-68: JUL 30 2002	80
Date of inspection	Inspector		
Remarks			

CSS.ES2

2 - MINISTRY OF THE ENVIRONMENT COPY

0506 (07/00) Front Form 9

Ontario — Ministry of the Environment

A 095980

Measurements recorded in: ☐ Metric ☒ Imperial

We ... (See Back or Print Below) A095980

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
INTERA	ENGINEERING		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
#200-1 Raymond Street	Ottawa	Ont	K1R1A2	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
#6525 Bank Street	Osgoode	W/P12	6

County/District/Municipality	City/Town/Village	Province	Postal Code
Ottawa-Carleton	Greely	Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	458409	5010732	Plan 5R-13045	Part #1

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
	Sand			0'	1'
	Grey & Brown Limestone			1'	165'
	Grey Sandstone			165'	200'

File # 10-203-1

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
40'	0'	Neat Cement Slurry	15.6

Method of Construction

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

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
6"	Steel	.188"	+2'	40'
6"	Open hole		40'	200'

Construction Record - Screen

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

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
194			
Water found at Depth (m/ft)	☐ Gas	Kind of Water: ☐ Fresh ☐ Untested	☐ Other, specify
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'	200'	6"

Results of Well Yield Testing

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

If pumping discontinued, give reason: ☒

Pump intake set at (m/ft): 190'

Pumping rate (l/min / GPM): 20

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (m/ft): 25'4"

If flowing give rate (l/min / GPM): ☒

Recommended pump depth (m/ft): 140'

Recommended pump rate (l/min / GPM): 20

Well production (l/min / GPM): 20+

Disinfected? ☒ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	25'2"		25'4"
1	25'4"	1	25'2"
2	25'4"	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:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
A1 Rock Drilling Co LTD	1119

Business Address (Street Number/Name)	Municipality
RR#1	Richmond

Province	Postal Code	Business E-mail Address
ONT	K0A2Z0	

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
6138382170	GRAHAM RYAN

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
T3484		2010 03 15

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☒ Yes ☐ No	2010 03 03	2010 03 01

Ministry Use Only

Audit No. Z 108289

Received MAR 22 2010

0506E (12/2007) **Ministry's Copy**

ATTACHMENT B

SEWAGE SYSTEM PERMIT DOCUMENTS FOR SUBJECT PROPERTY

Ottawa Septic System Office | Bureau des systèmes septiques d'Ottawa

File Search Reply – Match Found File

Information per applicant

Requester: Stephen Carmichael **Date:** 5 July 2019
Email: capitaltrucksales@rogers.com **Phone:** 613.821.5400

From: Ottawa Septic System Office - Ros
Phone: 613.692.3571 – Press "4" for the Septic office
Email: septic@rvca.ca

Follow up Inquiries Please Reference:	**FS-19-137** **Archive file (s): OG-00-186**	
	Civic Address:	**7409 Cenote Road, Metcalfe K0A 2P0**
	Former Township:	Osgoode
	Property Owner Last Name:	**2295564 Ontario Ltd.**
Lot 11	**Con: 6** **Sublot/Part: 1**	**Plan: 4R15669**
	Septic system designed per the attached records for:	**Real estate feature listing obtained via the internet:**
Bedrooms	**Commercial**	**Commercial**
Bathrooms		
Square feet		

Attachment(s):

Archive file: OG-00-186 (Capital Truck Sales)

✓ Copy of approval
NO Use Permit/Certificate of Completion issued by regulator at time of construction
n/a Tertiary Treatment unit: None installed
Final inspection conducted on 18 July 2001 – Did NOT pass

The foregoing information is given for your convenience only. Supplementary requests are necessary for conformity with other legislation such as flood plain or shoreline works. ***It should be clearly understood that you must satisfy yourself as to whether the premises and the existing or proposed use thereof is or would be in conformity with all applicable regulations.*** *For further information please contact Roz Kee at the number listed above. Thank you for contacting the Ottawa Septic System Office.*

Part 8 Inspector – Adam Dillon

Ottawa Septic System Office | Bureau des systèmes septiques d'Ottawa

Main Phone: 613-692-3571 x 1123
Fax: 613-692-1507
E-mail: septic@rvca.ca
Mailing Address: 3889 Rideau Valley Drive
P.O box 599, Manotick, ON K4M 1A5

Septic Records Search Form (1977 to present)

Complete and fax, mail or e-mail form → **NOTE: NON-REFUNDABLE FEE REQUIRED UPON SUBMISSION**

Form is to be completed in full. Incomplete information may cause delays or inaccurate file searches. Requests that have been processed and returned to clients are considered to be closed.

Rec # 13076-8

Section 1 – Request for Information

Requested by	**Stephen Carmichael**		
Telephone	(613) 821-5400	**Date:** (mm/dd/yyyy)	07/04/2018
File Search Response & Attached Septic Records to be	**E-mailed to:** capitaltrucksales@rogers.com		
	Mailed to:		
	Faxed to:		
Present Owner's Name	**2295564 Ontario Ltd.**		
Applicant's Reference			

Section 2 – File Search Property Information – Reference file and deed

Municipal Address	7409 Cenote Road, RR3, Metcalfe, ON K0A 2P0		
Lot	Part of Parcel 11-7, Section OSG-6	**Concession:**	6 PT W 1/2 11 RP
Subdivision Lot/Parts	Part of West 1/2 of Lot 11	**Plan:**	4R-15669 Part 1
Approximate Date of System Installation and/or Replacement	November/December 2000		
Owner at Time of Installation	**1395173 Ontario Ltd. o/a Capital Truck Sales**		

Section 3 – Payment Information

Payment Type (Check one)	☐ Visa ☐ **Cheque Attached***
Card Number	**Exp. Date:** (mm/yyyy) 11/2019
Cardholder Name	
Receipt Issued to	

*Cheques can be made payable to **Rideau Valley Conservation Authority**

A5600DE -

R.V.C.A. RECEIVED JUL - 4 2019

Ottawa Septic System Office Use ONLY

File Search Request #	
Invoice #	FS-19-137
Date	

Section 4 – Response

☐	Based on the above information, we were unable to locate a record of the related sewage disposal system in our files. We recommend contacting a consulting engineer to conduct an assessment. Please check with the Environment and Health Protection Branch for files dated between January 1960 to June 1977, Phone: 613-580-6744 ext. 23806
☐	To our knowledge there are no outstanding work orders against this system
☒	Outstanding work orders against this system exist - see fax cover for details. FINAL DO NOT PASS

NOTE: Life Expectancy of a sewage system is dependent on past usage and maintenance.

Personal information on this form is collected under the authority of the *Health Protection and Promotion Act S.O. 1983 C 10* and the *Environmental Protection Act R.S.O. 1980 C141* and will be used for the provision of the recording Environmental Health Services. Questions concerning the collection of this information should be directed to the Ottawa Septic System Office, 3889 Rideau Valley Drive, P.O. Box 599, Manotick, ON K4M 1A5. The forgoing information is given for your convenience only. It should be clearly understood that you must satisfy yourself as to whether the premises and existing or proposed use thereof is or would be in conformity with all applicable regulations.

PLEASE SAVE THIS FORM AND ATTACH THE PDF TO AN EMAIL

Ottawa Septic System Office

From: capitaltrucksales@rogers.com
Sent: Thursday, July 04, 2019 1:18 PM
To: Ottawa Septic System Office
Subject: Septic Records Search Form
Attachments: Septic Records Search Form - 4-Jul-19.pdf

Dear Sir or Madam:

Attached please find our completed Septic Records Search Form.

Thank you,

Steve Carmichael
Capital Truck Sales
7409 Cenote Road
Metcalfe, ON K0A 2P0

Shop: 613-821-5400
Toll: 888-248-5691
Cell: 613-299-4505
www.capitaltrucksales.com

Batch # 13076
Entry #: 8

RECEIPT CONFIRMATION

Rideau Valley C. A.
P.O. Box 599
Manotick, Ontario K4M 1A5
Canada
Phone: (613) 692-3571
Fax: (613) 692-0831

DOCUMENT NO.: PY000034509

DATE: 7/4/2019

AMOUNT RECEIVED 150.00 CAD

FROM Stephen Carmichael

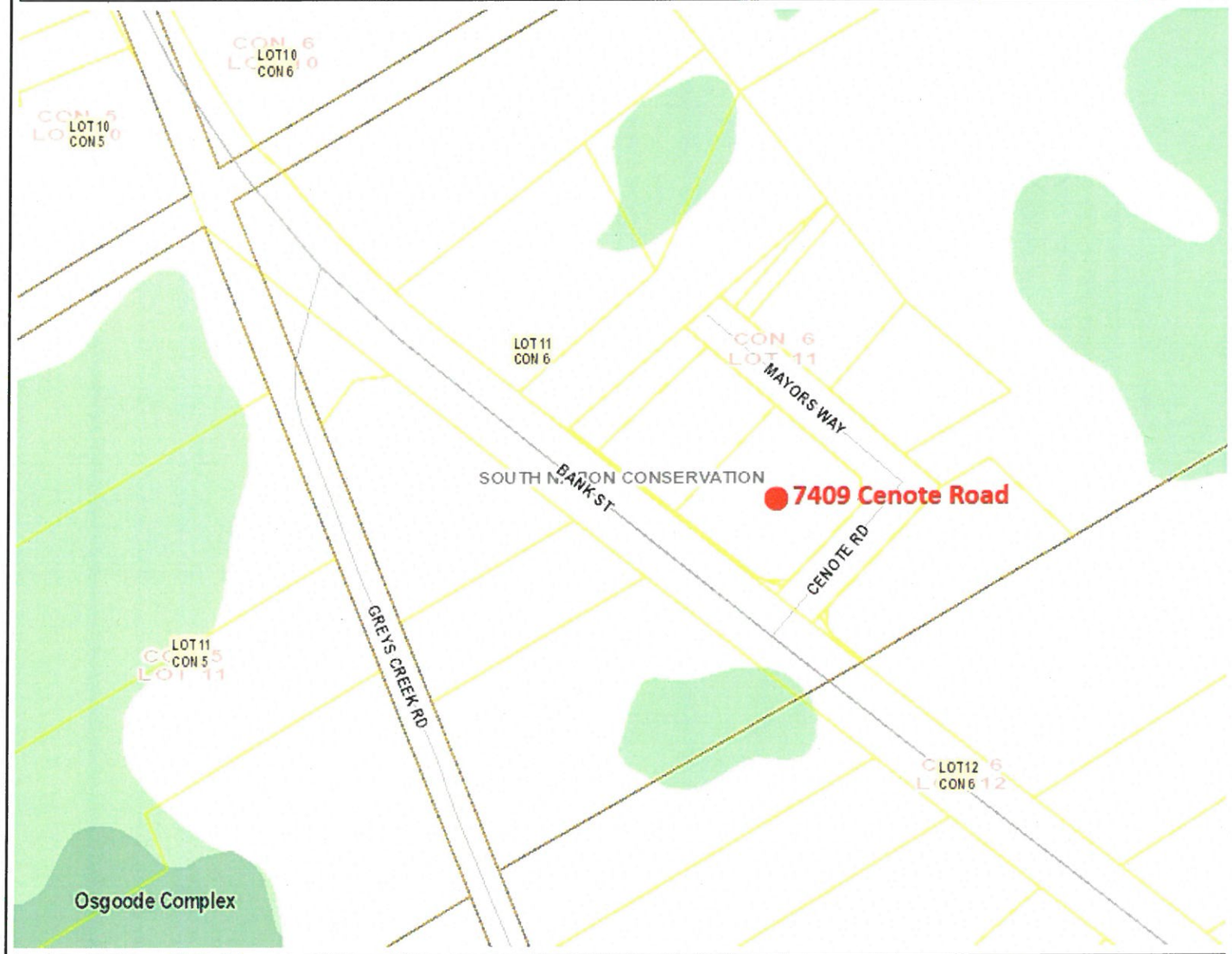
SIGNATURE

PAID BY: VISA **CHECK/RECEIPT NO.:** 000013076-00008 **DATE RECEIVED:** 7/4/2019

	DESCRIPTION	AMOUNT
4300-20-20600	FS-19-137; 7409 Cenote Road, Osgoode, file search	150.00
	SUB-TOTAL:	150.00
	TOTAL:	150.00

RIDEAU VALLEY CONSERVATION AUTHORITY

7409 Cenote Road



Legend

- Parcel Activity
- Parcel - Assesment
- Lot
- Area of Reduced Flood Risk
- Regulation Limit
- 100yr Floodline
  - Floodplain
  - Area of Reduced Flood Risk
  - Area of Shallow Flooding
- Reg Limit Dominant Hazard
  - Floodplain
  - Geo-technical Hazard Limit
  - Meander Belt
  - Spill Line
  - Stable-Toe Slope
  - Top of Slope
  - Unstable-Toe Slope
  - Wetland
- Regulated Wetlands
- RVCA Sub-Watersheds
- RVCA Catchments
- Wetlands
  - Evaluated-Provincial (PSW)
  - non-PSW Wetlands
- Waterbody

Notes

Parcel data is owned by Teranet Enterprises Inc and its suppliers. All rights reserved. May not be reproduced without permission.

162.1 0 81.07 162.1

Meters

1: 3,191.84

Map Projection: WGS_1984_Web_Mercator_Auxiliary_Sphere

Map created: 7/4/2019

Township of Osgoode

NUMBER OF PLUMBING FIXTURES/FIXTURE UNIT COUNT

Fixtures	Number Existing	Number Proposed	Unit Count	
Bathroom				
Bathroom Group (Toilet, sink and tub or shower with flush tank)		2	x 6 =	12
Bathtub with/without overhead shower			x 1.5 =	
Bedpan washer			x 6 =	
Shower stall			x 1.5 =	
Wash basin (1.5" trap)			x 1.5 =	
Watercloset (toilet) with flush tank			x 4 =	
Bidet			x 1 =	
Sauna bath			x 1.5 =	
Kitchen				
Dishwasher			x 1.5 =	
Refrigerator with ice maker			x 1 =	
Kitchen sink with/without shredder				
one compartment			x 1.5 =	
two compartment			x 1.5 =	
three compartment			x 1.5 =	
Other				
Domestic washing machine			x 1.5 =	
Combination of sink & laundry tray		2	x 2 =	4

TOTAL = 16

INSERT TOTAL IN SECTION 5 PAGE 1

Ontario Building Code 1997 7.4.9.3, 8.2.1.3.A, 8.2.1.3.B

Note: (I) It is recommended that sump pumps and water softeners not be connected to the sewage system. Connection of such fixtures to a sewage system may lead to a hydraulic and failure of the said system. The above mentioned fixtures should be discharged separately to an approved Class 2 (leaching pit) sewage system.

(ii) Where laundry waste is not more than 20% of the total daily design sanitary sewage flow, it may discharge to a sewage system.

A. C. Houle

Signature of ~~Owner~~/Agent

Aug. 24/2000

Date

Application No. 00-186

12. **LOT DIAGRAM AND SEWAGE SYSTEM PLAN:** Draw to scale indicating north point and showing:
    a) Locating of sewage system components (e.g. tanks, leaching bed). Locate and show horizontal distances from system to adjacent, existing or proposed buildings, water supplies (including neighbours), existing on-site sewage systems, driveways, property lines, lakes, rivers, water courses, swimming pools, decks existing or proposed.
    b) Lot dimensions, topographic features (e.g. swamps, steep slopes) near system
    c) If any part of proposal conforms to specific standard drawing, give reference number (s)
    d) BENCHMARK AND 3 EXISTING GRADE ELEVATIONS

Refer to Attachments by
Morey Houle Chevrier Eng. Ltd.

INSTALLATION TO BE SUPERVISED AND CERTIFIED BY THE DESIGN ENGINEERING FIRM.

Building Permit Approval for this application is refused for the reasons given in Section 11 Page 1

Inspected and Recommended by	Refused Director	Date

Application approved for a building permit/septic system under Section 1, 2, 8, 10 and 11 of the Ontario Building Code.

Inspected and Recommended by	Refused Director	Date SEPT 1/00

Township of Osgoode
Installation Inspection
SEWAGE SYSTEM

Application No. 00-186

INSPECTION DETAILS:	Time 2:20pm Date Nov 28/00	Weather CLOUDY
REPRESENTING:	The Owner CAPITAL TRUCK SALES	The Installer

1. **Work authorized by the Building Permit has been satisfactorily completed and includes:**
   a) (Septic tank)/holding tank of working capacity of 3600 Litres constructed of ☐ steel ☑ concrete ☐ fibreglass on ☐ site or ☐ prefabricated to serve _____ (no of bedrooms or units).

   Make and Model, if Prefabricated Tank: BOUCHER

   b) Leaching bed of total 40 metres of 3 inch diameter distribution pipe of CARSON

   (type and product description e.g. manufacturer(s) of material of which pipe is made) laid in 3 runs and fed by _____ (gravity, siphon, pump).

   c) Proprietary Aerobic System: (Manufacturer) _____ (Model) _____

   d) Other details _____

2. **Location**
   a) System components installed as shown on application supporting Building Permit
   b) If located other than in (a) use space below for sketch and dimensions from permanent points of reference sufficient to facilitate future location of tank and leaching bed including orientation of pipe runs.

AS PER APPLIC.

3. **The following work remains to be completed:**
   ☑ Backfill System and Complete
   ☑ Stabilize All Sloped Surfaces
   ☑ Finish Grading to Shed Run-off and Divert Water Around Leaching Bed
   ☐ Other _____

SEWAGE SYSTEM PERMIT

Under section 8 of the Building Code, and subject to the provisions of the Act and Regulations Approval is hereby issued to (Owner) CAPITAL TRUCK SALES

for the use and operation of the Class 4 sewage system constructed/installed/enlarged/extended/altered pursuant to the Building Permit issued under the above application number in accordance with the application and Building Permit with any changes indicated above and located on Lot 11 Concession 6 Sub-Lot No. 1 Plan No. 4R1569 in the Township of Osgoode, Regional Municipality of Ottawa-Carleton.

Inspected and Recommended By:	Permit Issued By:	Date Issued:

Note: Section 8(1) of the Building Code Act provides that no change can be made to any building(s) or structure(s) in connection with which this sewage system is used, if the operation of effectiveness of the sewage system will or is likely to be affected by the change, unless a new Building Permit is obtained.

Section 25(1) of the Act provides than an applicant for a permit may appeal a decision to refuse to issue a permit. Written notice of appeal must be forwarded to the Director (who refused to issue the permit) and to the Judge (of an Ontario Court) within 20 days.

WARNING: UNDER NO CIRCUMSTANCES SHOULD A HOMEOWNER ENTER A SEPTIC TANK. NOXIOUS GASES WHICH ARE HEAVIER THAN AIR REMAIN IN THE TANK AFTER THE TOP IS REMOVED, AND HAVE CAUSED DEATH BOTH TO THE ORIGINAL VICTIM AND TO THOSE WHO ATTEMPT TO RESCUE HIM FROM THE TANK.

Township of Osgoode

Building Permit Application Form for a

CLASS 2 - 5 SEWAGE SYSTEM

•8243 Victoria Street•Box 130•Metcalfe, Ontario•K0A 2P0•(613) 821-1107•1-800-363-4610•Fax: (613) 821-4359

Application No. 00-186
Fee Receipt No. 1158
Date Received Sept 1/00

1. Name and Mailing Address (number/street/city/town, etc) of owner	2. Name and address (number, street, city, town, etc) of installer
Capital Truck Sales 1369-2 Greely Lane Greely, Ont. K4T 1A1 Telephone No. 526-2006	N/A Telephone No. Licence No.

3. Propose to ☑ construct ☐ install ☐ alter ☐ extend ☐ enlarge a Class ☐ 1 ☐ 2 ☐ 3 ☑ ~~4~~ ☐ 5 sewage system to serve a ☐ single family dwelling ☐ multi-dwelling ☑ commercial building ☐ industrial building ☐ other _____

4. Street	Lot	Con.	Sub Lot No.	Plan No.	Area of Lot (m2)	Area of House (m2)
7409 Cenote Rd. ~~HWY 31~~	11	6	1	4R15669		

5. State No. of	Bedroom /Motel Units	People	Flush Toilets	Urinals	Washbasins	Showers & ~~Bathtubs~~
			2		2	1

Total Fixture Units 16

6. Water Supply: ☑ ~~Proposed~~ or ☐ Existing | ☐ Dug or Bored well ☑ ~~Drilled well~~ ☐ Municipal ☐ Other _____

Assessment Roll No. 05500100

7. Attach completed sketch on Page 2. List any other attachments.

Figure 1, Table I, Design Brief, Typical Drawing B

8. Relationship to severance (if applicable)
☐ Lot approval pending
☐ Lot approved, under Severance Application No._____

9. Directions to Lot (Highway No., secondary roads, signs to follow, etc.)
HWY 31 to Cenote Road

10. I certify that the above information is complete and correct and that, if approved, the work will conform with Provincial requirements for sewage systems and local Municipal By-laws.

Name and address of agent (if agent is completing this form)
Morey Houle Chevrier Eng. Ltd.
5542 Ann Street, P.O. Box 59
Manotick, Ont. K4M 1A2
Telephone No. 692-8686

Signature of ~~owner~~ or agent (if agent is completing form) A.C. Houle
Date Aug 28/2000

11. Inspector's Report Date: Sept 1/00

Weather	Representing Owner	Leaching Bed design criteria: Depth to rock (m)	Design H.W.T. (m)

Sub-surface conditions encountered

Rock & G.W.T.	Depth (m)	Soil Type

Requirements	Length of Distribution Pipe	Working capacity of ~~septic~~/holding tank
✓	40 metres	3600 litres

☑ Conditions of approval and reasons (e.g. fill, grading, drainage improvements, design sewage flows)
or
☐ Reasons where proposal not acceptable (add additional pages, if required)

INSTALL AS PER PAGE "2"
INSTALL AS PER TYPICAL DRAWING "B"
INSTALL AS PER ENGINEERING DRAWING 002-103
INSTALL AS PER APPENDIX "C"

Ottawa
Building Services Branch

INSPECTION REPORT

Address 6485 BANK ST
CAPITAL TRUCK

Application No. _____
Building Permit No. D 185

Block No. _____ Lot. No. _____ Unit No. _____ Plumbing Permit No. _____

BUILDING

- ☐ **Backfill**
- ☐ **Framing/Superstructure**
- ☐ **Insulation/Vapour Barrier**
- ☐ _____

MECHANICAL

- ☐ **Fire Alarm**
- ☐ **Sprinkler**
- ☐ **Standpipe**
- ☐ **HVAC**
- ☐ _____

PLUMBING

- ☐ **Underground**
- ☐ **Roughing**
- ☐ **Final**
- ☐ SEPTIC FINAL

INSPECTION COMMENTS

Order Issued _____

1. PROVIDE TOPSOIL BED AREA. MANTLE SLOPES MAX 4:1 & PROVIDE MEANS TO STABILIZE MANTEL SLOPES

See Page 2 ☐

☐ **Inspection Passed** ☒ **Inspection did not pass, call for re-inspection** (35

Received by _____ (Print Name) Date WED JULY 18/01

Inspector R MOORE (Print Name) Phone No. 580 2424 32229

DISTRIBUTION LIST: White (Central File) Canary (Inspector) Blue (Recipient)

ATTACHMENT C

RESULTS OF LABORATORY TESTING OF WELL WATER SAMPLE

Certificate of Analysis

Client: Kollaard Associates Inc.
210 Prescott St., Box 189
Kemptville, ON
K0G 1J0
Attention: Ms. Colleen Vermeersch
PO#:
Invoice to: Kollaard Associates Inc.

Report Number: 1913013
Date Submitted: 2019-07-23
Date Reported: 2019-07-30
Project: 180138
COC #: 198969

Dear Colleen Vermeersch:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____
Sarah Horner, Inorganics Technician

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise indicated.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at: http://www.cala.ca/scopes/2602.pdf.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is licensed by the Ontario Ministry of the Environment, Conservation, and Parks (MECP) for specific tests in drinking water (license #2318). A copy of the license is available upon request.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by the Ontario Ministry of Agriculture, Food, and Rural Affairs for specific tests in agricultural soils.

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline values listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official provincial or federal guideline as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

Certificate of Analysis

eurofins | Environment Testing

Client: Kollaard Associates Inc.
210 Prescott St., Box 189
Kemptville, ON
K0G 1J0
Attention: Ms. Colleen Vermeersch
PO#:
Invoice to: Kollaard Associates Inc.

Report Number: 1913013
Date Submitted: 2019-07-23
Date Reported: 2019-07-30
Project: 180138
COC #: 198969

				Lab I.D.	1443061
				Sample Matrix	Water
				Sample Type	
				Sampling Date	2019-07-23
				Sample I.D.	7409 Cenote
Group	**Analyte**	**MRL**	**Units**	**Guideline**	
Anions	Cl	1	mg/L	AO 250	241
	F	0.10	mg/L	MAC 1.5	<0.10
	N-NO2	0.10	mg/L	MAC 1.0	<0.10
	N-NO3	0.10	mg/L	MAC 10.0	3.39
	SO4	1	mg/L	AO 500	306
General Chemistry	Alkalinity as CaCO3	5	mg/L	OG 500	294
	Colour	2	TCU	AO 5	2
	Conductivity	5	uS/cm		1610
	pH	1.00		6.5-8.5	7.77
	S2-	0.01	mg/L	AO 0.05	<0.01
	TDS (COND - CALC)	1	mg/L	AO 500	1130*
	Turbidity	0.1	NTU	AO 5.0	0.4
Hardness	Hardness as CaCO3	1	mg/L	OG 100	533*
Indices/Calc	Ion Balance	0.01			0.96
Metals	Ca	1	mg/L		141
	Fe	0.03	mg/L	AO 0.3	0.05
	K	1	mg/L		8
	Mg	1	mg/L		44
	Mn	0.01	mg/L	AO 0.05	0.01
	Na	2	mg/L	AO 200	178
Subcontract-Inorg	DOC	0.5	mg/L	AO 5	<0.5
	N-NH3	0.01	mg/L		0.06
	Phenols	0.001	mg/L		<0.001
	Tannin & Lignin	0.1	mg/L		<0.1
	Total Kjeldahl Nitrogen	0.1	mg/L		0.2

Guideline = ODWSOG *** = Guideline Exceedence**

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Certificate of Analysis

Client: Kollaard Associates Inc.
210 Prescott St., Box 189
Kemptville, ON
K0G 1J0
Attention: Ms. Colleen Vermeersch
PO#:
Invoice to: Kollaard Associates Inc.

Report Number: 1913013
Date Submitted: 2019-07-23
Date Reported: 2019-07-30
Project: 180138
COC #: 198969

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 369567 **Analysis/Extraction Date** 2019-07-23 **Analyst** AAR **Method** C SM2130B			
Turbidity	<0.1 NTU	103	70-130
Run No 369640 **Analysis/Extraction Date** 2019-07-24 **Analyst** H D **Method** EPA 200.8			
Iron	<0.03 mg/L	98	91-109
Manganese	<0.01 mg/L	99	92.9-107
Run No 369695 **Analysis/Extraction Date** 2019-07-25 **Analyst** H D **Method** M SM3120B-3500C			
Calcium	<1 mg/L	96	90-110
Potassium	<1 mg/L	88	87-113
Magnesium	<1 mg/L	91	76-124
Sodium	<2 mg/L	102	82-118
Run No 369730 **Analysis/Extraction Date** 2019-07-26 **Analyst** K J **Method** C SM2120C			
Colour	<2 TCU	105	90-110
Run No 369765 **Analysis/Extraction Date** 2019-07-25 **Analyst** K J **Method** SM2320,2510,4500H/F			
Alkalinity (CaCO3)	<5 mg/L	100	90-110

Guideline = ODWSOG *** = Guideline Exceedence**

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Certificate of Analysis

Client: Kollaard Associates Inc.
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Kemptville, ON
K0G 1J0
Attention: Ms. Colleen Vermeersch
PO#:
Invoice to: Kollaard Associates Inc.

Report Number: 1913013
Date Submitted: 2019-07-23
Date Reported: 2019-07-30
Project: 180138
COC #: 198969

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Conductivity	<5 uS/cm	98	95-105
F	<0.10 mg/L	95	90-110
pH		100	90-110
Run No 369860 **Analysis/Extraction Date** 2019-07-29 **Analyst** SKH **Method** SM 4110			
N-NO3	<0.10 mg/L	96	90-110
Run No 369868 **Analysis/Extraction Date** 2019-07-25 **Analyst** AET **Method** SUBCONTRACT P-INORG			
DOC	<0.5 mg/L	86	
N-NH3	<0.01 mg/L	98	
Phenols	<0.001 mg/L	104	69-132
Tannin & Lignin	<0.1 mg/L	90	
Total Kjeldahl Nitrogen	<0.1 mg/L	86	81-126
Run No 369933 **Analysis/Extraction Date** 2019-07-30 **Analyst** AET **Method** C SM4500-S2-D			
S2-	<0.01 mg/L	104	80-120
Run No 369940 **Analysis/Extraction Date** 2019-07-30 **Analyst** Z S **Method** C SM4500-NO3-F			
N-NO2	<0.10 mg/L	97	80-120

Guideline = ODWSOG *** = Guideline Exceedence**

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Certificate of Analysis

Client: Kollaard Associates Inc.
210 Prescott St., Box 189
Kemptville, ON
K0G 1J0
Attention: Ms. Colleen Vermeersch
PO#:
Invoice to: Kollaard Associates Inc.

Report Number: 1913013
Date Submitted: 2019-07-23
Date Reported: 2019-07-30
Project: 180138
COC #: 198969

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 369950 **Analysis/Extraction Date** 2019-07-30 **Analyst** SKH **Method** SM 4110			
Chloride	<1 mg/L	100	90-110
SO4	<1 mg/L	96	90-110
Run No 369952 **Analysis/Extraction Date** 2019-07-30 **Analyst** SKH **Method** C SM2340B			
Hardness as CaCO3			
Ion Balance			
TDS (COND - CALC)			

Guideline = ODWSOG *** = Guideline Exceedence**

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Certificate of Analysis

Client: Kollaard Associates Inc.
210 Prescott St., Box 189
Kemptville, ON
K0G 1J0
Attention: Ms. Colleen Vermeersch
PO#:
Invoice to: Kollaard Associates Inc.

Report Number: 1913051
Date Submitted: 2019-07-23
Date Reported: 2019-07-25
Project: 180138
COC #: 198969

Dear Colleen Vermeersch:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____
Steven Tosh, Operations Manager

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise indicated.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at: http://www.cala.ca/scopes/2602.pdf.

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Certificate of Analysis

Client: Kollaard Associates Inc.
210 Prescott St., Box 189
Kemptville, ON
K0G 1J0
Attention: Ms. Colleen Vermeersch
PO#:
Invoice to: Kollaard Associates Inc.

Report Number: 1913051
Date Submitted: 2019-07-23
Date Reported: 2019-07-25
Project: 180138
COC #: 198969

Group	Analyte	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sampling Date / Sample I.D.
					1443112 / Water / / 2019-07-23 / 7409 Cenote
Microbiology	Escherichia Coli	0	ct/100mL	MAC 0	0
	Faecal Coliforms	0	ct/100mL		2
	Heterotrophic Plate Count	0	ct/1mL		0
	Total Coliforms	0	ct/100mL	MAC 0	2*

Guideline = ODWSOG *** = Guideline Exceedence**

Results relate only to the parameters tested on the samples submitted.
Analytical Method: AMBCOLM1
additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Certificate of Analysis

Client: Kollaard Associates Inc.
210 Prescott St., Box 189
Kemptville, ON
K0G 1J0
Attention: Ms. Colleen Vermeersch
PO#: 180138
Invoice to: Kollaard Associates Inc.

Report Number: 1913576
Date Submitted: 2019-07-30
Date Reported: 2019-07-31
Project: 180138
COC #: 198963

Dear Colleen Vermeersch:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____
Steven Tosh, Operations Manager

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise indicated.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at: http://www.cala.ca/scopes/2602.pdf.

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eurofins | Environment Testing

Certificate of Analysis

Client: Kollaard Associates Inc.
210 Prescott St., Box 189
Kemptville, ON
K0G 1J0
Attention: Ms. Colleen Vermeersch
PO#: 180138
Invoice to: Kollaard Associates Inc.

Report Number: 1913576
Date Submitted: 2019-07-30
Date Reported: 2019-07-31
Project: 180138
COC #: 198963

				Lab I.D.	1444323
				Sample Matrix	Water
				Sample Type	
				Sampling Date	2019-07-30
				Sample I.D.	7409 Cenote
Group	**Analyte**	**MRL**	**Units**	**Guideline**	
Microbiology	Faecal Coliforms	0	ct/100mL		0
	Total Coliforms	0	ct/100mL	MAC 0	1*

Guideline = ODWSOG *** = Guideline Exceedence**

Results relate only to the parameters tested on the samples submitted.
Analytical Method: AMBCOLM1
additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Ryznar Stability Index

RSI = 2(pH_s) - pH

RSI << 6 → the scale tendency increases as the index decreases
RSI >> 7 → the calcium carbonate formation probably does not lead to a protective corrosion inhibitor film
RSI >> 8 → mild steel corrosion becomes an increasing problem

Langelier Saturation Index

LSI = pH - pH_s

If LSI is negative → no potential to scale, the water will dissolve $CaCO_3$
If LSI is positive → scale can form and $CaCO_3$ precipitation may occur
If LSI is close to zero → borderline scale potential, water quality or temperature change or evaporation could change the index

where pH measured from sample
pH_s = pH at saturation in calcite or calcium carbonate

$$pH_s = (9.3 + A + B) - (C + D)$$

$$A = \frac{\log_{10}[TDS] - 1}{10}$$

$$B = -13.12 \times \log_{10}(°C + 273) + 34.55$$

$$C = \log_{10}[Ca^{2+} as CaCO_3] - 0.4$$

$$D = \log_{10}[alkalinity as CaCO_3]$$

	TW1-final
pH	7.77
hardness [mg/l as $CaCo_3$]	533
Alkalinity [mg/l as $CaCo_3$]	294
total dissolved solids [mg/l]	1130
temperature (°C)	10
A	0.21
B	2.38
C	2.33
D	2.47
pH_s	7.09
→→ RSI	6.42
→→ LSI	0.68