



**WESTKAN BUSINESS PARK
BLOCKS 10 & 12 PLAN 4M-1511
CANNAGENETICS – PROPOSED CANNABIS PRODUCTION FACILITY**

**SERVICING OPTIONS
AND
CONCEPTUAL STORMWATER MANAGEMENT REPORT**

July 8, 2020

Report Ref # R-2020-082
Novatech Project No: 118179

1.0 BACKGROUND

This Servicing Options and Conceptual Stormwater Management Report has been prepared in support of a proposed Official Plan and Zoning By-law amendment for Blocks 10 & 12 on registered plan 4M-1511 in the WestKan Business Park. The property is located on the northeast corner of Russ Bradley Road and Huisson Road, approximately 350m west of Carp Road. The owner intends to re-designate and re-zone the property to allow 'Cannabis Production Facility' as a permitted use.

Detailed servicing and stormwater management reports would be completed as part of the future Site Plan Approval process.

2.0 EXISTING CONDITIONS

The subject site is approximately 4.2-hectares (10.4 acres) in area. The previous use of the site was agricultural. The site is currently surrounded by the WestKan Business Park, with the Carp Airport to the west.

The site generally drains south to north with approximate 3m of elevation drop. Drainage from the site sheet flows in a north/northeasterly direction across adjacent undeveloped blocks towards the roadside ditch along Carp Road. A portion of the site drains to the existing tributary that runs through the west side of the property. The tributary and the roadside ditch flow north before eventually discharging to the Carp River.

A Geotechnical Investigation report prepared for the site (GemTec, July 7, 2020) includes the soil conditions and groundwater elevations. The report indicates that the soil profile encountered at the borehole locations consist of topsoil underlain primarily by sandy silt. Groundwater was noted to be 0.1m to 0.9m below ground surface, subject to seasonal fluctuations.

Refer to the **Figure 1 – Existing Conditions Plan** which provides an aerial view of the site and indicates the existing site location and features.

3.0 PROPOSED DEVELOPMENT

The proposed development is a cannabis production facility. The facility will include one production building located near the southeast corner of the property with the option for future expansion to include additional buildings. Site access is proposed from Russ Bradley Road.

The attached conceptual **Site Plan** was prepared by CannaGenetics for the purposes of OPA and rezoning.

4.0 SITE GRADING AND DRAINAGE

The proposed drainage for the site would be generally consistent with the West Capital Airpark Stormwater Site Management Brief Business Park (Phase 1) (Novatech February 2014). The majority of the site is intended to drain northeast to the proposed ditch along the proposed Taxiway to the east, eventually discharging to the Carp roadside ditch. A small portion would continue to drain to the existing ditch north-south ditch (known as the Northeast Tributary) along the west side of the property.

The Geotechnical Investigation (Gemtec) did not include recommendations on grade raise restriction for the proposed site. A supplementary geotechnical investigation was suggested by Gemtec to provide site-specific recommendations including suitability of existing soil, foundation design, grade raise restrictions, and pavement structure.

The conceptual drainage is shown on **Figure 2 – Conceptual Drainage Plan**. Details would be provided with the application for Site Plan approval.

5.0 SITE SERVICING

5.1 Existing Services

There are no existing services on the subject site. A 300mm diameter watermain runs along the east side of Huisson Road and the south side of Russ Bradley Road, and is for fire protection purposes only.

5.2 Proposed Servicing

This site is located outside of the City of Ottawa urban boundary. Municipal services are not proposed or anticipated in the vicinity of the subject site.

Sanitary Sewage System

A private sewage system, designed and constructed in conformance with regulatory requirements, would service the proposed development.

The detailed design of the septic system would be coordinated at the time of application for Site Plan Approval. If the theoretical design flow is less than 10,000L/day the private sewage system would be regulated by the Ontario Building Code. The proposed septic system would require a

permit from the Ottawa Septic System Office. A system with a design flow in excess of 10,000L/day needs to meet Reasonable Use criteria and requires an Environmental Compliance Approval (ECA) from the Ministry of Conservation, Energy and Parks (MECP). A septic system permit or ECA, as applicable, will be required prior to construction of the system.

For preliminary design purposes, the proposed septic system will be limited to 10,000L/day. A preliminary estimate of 1,500L/day was determined for the employees of the facility. The remaining allowable 8,500L/day would be permitted for the discharge of production water at the facility. The land area required for a septic system with a capacity of 10,000/day is approximately 1,700m². Refer to the Septic System Considerations memo (Novatech, July 8, 2020) for preliminary septic system sizing information.

Water Supply System

A Hydrogeological Investigation report [Gemtec, June 18, 2020] has been prepared to evaluate the well water quality and quantity of the recently drilled well.

Fire Protection

The existing 300mm diameter watermain along Huisson and Russ Bradley Road is a private watermain which is connected to the Carp municipal water system and is owned, operated and maintained by a common elements condominium. The nearest fire hydrant is approximately 30m from the site on the south side of Russ Bradley Road. Per Novatech's Hydraulic Network Analysis (R-2013-172, November 2014) there is approximately 63L/s of available fire flow.

Building specific fire protection requirements would be evaluated at the time of Site Plan Application. If fire flow requirement exceeds the available flow provided by the existing watermain, then onsite storage of water for fire fighting may be required.

6.0 STORMWATER MANAGEMENT

The stormwater management criteria for the proposed development was outlined in the West Capital Airpark Stormwater Site Management Brief Business Park (Phase 1) (Novatech February 2014.) The site-specific criteria would be confirmed with the City of Ottawa and the Mississippi Valley Conservation Authority (MVCA) prior to the Site Plan application stage, and are expected to be:

- Stormwater Quantity: Measures such as rooftop storage, infiltration trenches, reduced lot grading, and/or grassed perimeter swales will be implemented to maintain flow and volume of runoff similar to pre-development conditions.
- Stormwater Quality: Implementation of lot level and conveyance Best Management Practices to provide an enhanced level of treatment corresponding to 70% long-term removal of suspended solids. It is anticipated that water quality control could be provided by means of an oil and grit separator (OGS) unit before runoff enters the off-site ditches.
- Erosion and sediment control measures would be implemented prior to, during, and after construction.

- Any existing stormwater runoff from adjacent sites that crosses the property must be considered by the proposed design.
- Existing flow patterns would generally be maintained with most of the site draining to the proposed Taxiway ditch east of the site and a small portion draining to the ditch that runs through the west side of the site. Where possible, infiltration and onsite storage would be considered at the time of Site Plan Application to minimize the post-development runoff flow rate and volume.

Details would be provided with the application for Site Plan approval.

NOVATECH

Prepared by:



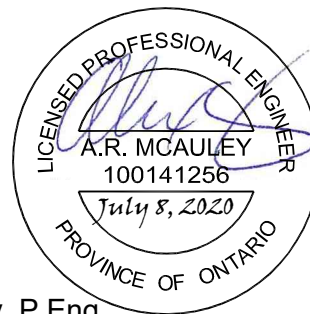
Aden Rongve, B. Eng.
Engineering Intern
Land Development Engineering

Reviewed by:



Susan Gordon, P.Eng., MBA
Director
Land Development

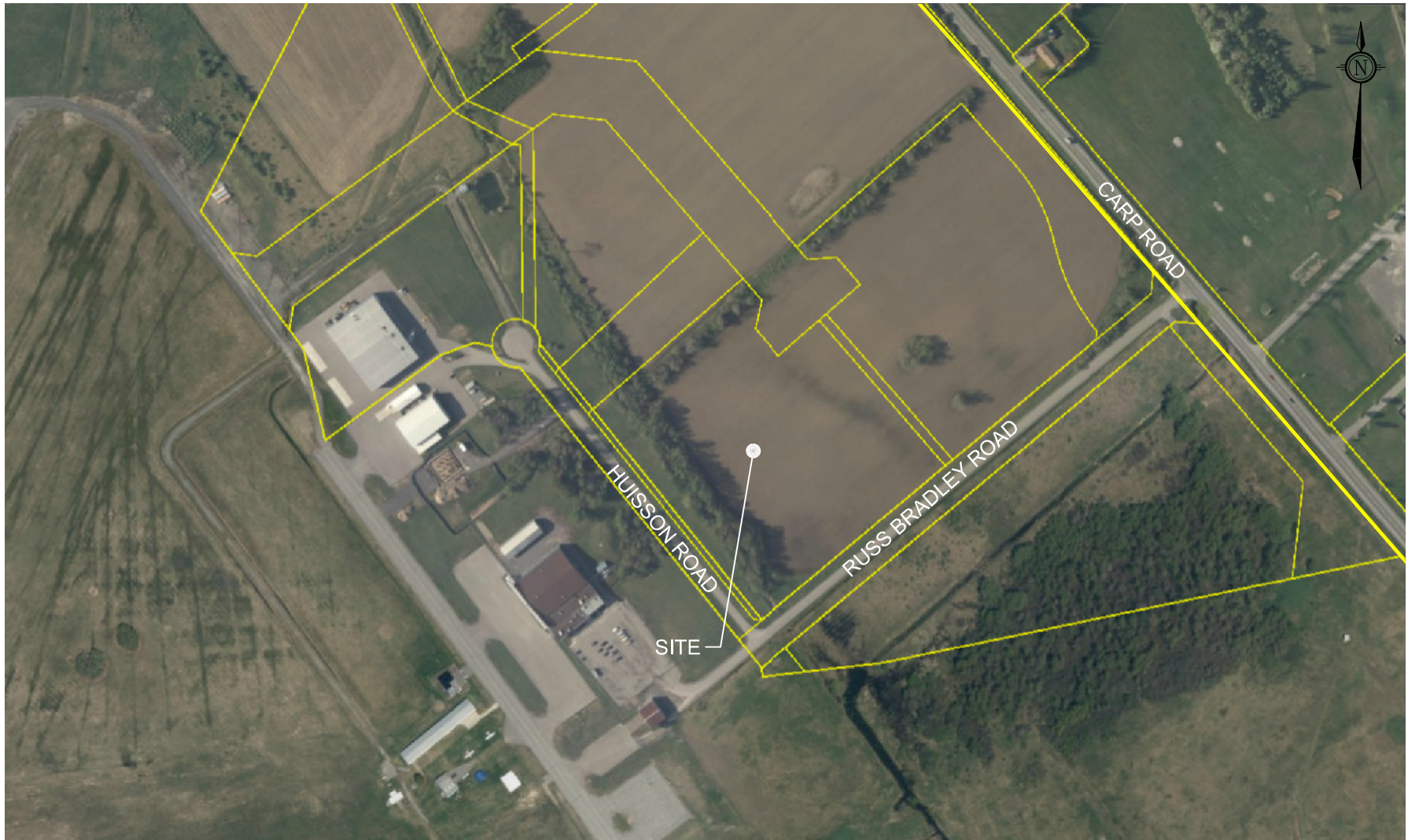
Reviewed by:



Alex McAuley, P.Eng.,
Project Manager
Land Development Engineering

Attachments:

- Figure 1 - Existing Conditions Plan (Novatech, July 8, 2020)
- Figure 2 - Conceptual Drainage Plan (Novatech, July 8, 2020)
- Site Plan (conceptual by Cannagenetics, Feb 13, 2019)
- Septic Systems Considerations Memo (Novatech, July 8, 2020)



Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6

Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

BLOCKS 10 & 12 WESTKAN BUSINESS PARK

EXISTING CONDITIONS

SCALE 1 : 5000

DATE JUL 8/20	JOB 118179	FIGURE FIG1
------------------	---------------	----------------



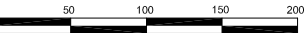
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6

Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

-  EXISTING TRIBUTARY
-  EXISTING ROADSIDE DITCH
-  PROPOSED TAXIWAY DITCH
-  PROPOSED OVERLAND FLOW DIRECTION FOR SITE
-  STORM DRAINAGE BOUNDARY

BLOCKS 10 & 12 WESTKAN BUSINESS PARK

CONCEPTUAL DRAINAGE PLAN

SCALE 1 : 5000 

DATE JUL 8/20	JOB 118179	FIGURE FIG2
------------------	---------------	----------------

MEMORANDUM

DATE: MARCH 7, 2019
REVISED: JULY 8, 2020
TO: ADAM THOMPSON, NOVATECH
FROM: ALEX MCAULEY, P.ENG
RE: CANAGENETICS INC. – WESTKAN BUSINESS PARK
SEPTIC SYSTEM CONSIDERATIONS

NOVATECH FILE # 118179

CC:

As discussed, Novatech has prepared a memo based on our discussion of Septic Demands email with Cannagenetics.

Assumptions

- Due to the elevated ground water table, a fully raised septic system is anticipated.
- Imported sand for the septic system will have a Percolation Rate of 8 min/cm.
- The underlying soil has a Percolation Rate of 50 min/cm.
- It is assumed that all process/production discharge is suitable for onsite disposal within the proposed septic system.
- Septic System flow allowance is 10,000L/day per lot.
- There will be up to 20 employees daily.
- There will be 280 reservoirs (50 USgal, or 189L) within the facility for fertilising and irrigation, with a combined total volume of approximately 53,000L.
- The reservoirs will be drained periodically (approximately once every 4 weeks, released over a period of time) to the septic system.

Considerations

- For preliminary design purposes, the proposed septic system will be limited to 10,000 L/day.
- The flows have been divided into two main categories, employee usage and production/process.
 - The theoretical design flow is based on 20 employees 1,500L/day (75L/day/employee).
 - Process and Production discharge, which includes the draining of reservoirs, would be limited to 8,500L/day (10,000L/day limit minus 1,500L/day for employee usage).
- Based on a total reservoir volume of 53,000L, and a maximum discharge of 8,500L/day, draining of the reservoirs would need to be completed over a minimum of 7 days to not overload the septic system.
- Recommend flow monitoring after construction to confirm the flow numbers based on actual usage.
- Any water not suitable for the proposed septic system (ie not equivalent to domestic sewage) would be required to be hauled offsite for disposal at a licensed facility.
- Minimum setbacks required per the Ontario Building Code (OBC) based on a 1.5m raised absorption trench tile field are:
 - Tile to property lines: 6.0m
 - Tile to buildings: 8.0m
 - Tile to any well: 18.0m
 - Building to the septic tank: 1.5m
- Mounding calculations will be required and may increase the above noted setback requirements.

Refer to attached Septic System Design Flows Sheet (Dated March 7, 2019) for preliminary calculations.

SEPTIC SYSTEM DESIGN FLOWS			
Activity			Flow/Unit (L/day) [1]
Proposed Production Facility			
	Qty	Multiplier	
Employees	20	75 L/day	1,500
Process Water	1	8,500 L/day	8,500
		Site TOTAL [2]	10,000
Septic Sizing Options (Conventional System)			
	Flow	Pipe length	Tank Size
	Q (L/day)	(m)	(L)
Absorption Trench (OBC 8.7.3)		$=(Q*8)\div 200$	$=Q*3$
Phase 1	10,000	400	30,000
Percolation Rate [3]	T	8	=min/cm
Loading Rate Calculations			
	Flow	Loading Rate	Area Req'd
	Q (L/day)	L/m ² /day	(m ²)
Contact Area Required	10,000	6	1,667
	Length (m)	Width (m)	Area (m ²)
Contact Area Provided (Preliminary Dimensions)	50	34	1,700

Notes:

[1] Flows per OBC Table 8.2.1.3B and per MOECC guidelines

[2] Max allowable flow is based on a maximum 10,000L/day to fall below the limit where Reasonable Use would apply.

[3] Percolation Rate is assumed to be 8 for imported septic sand, and 50 for the underlying soil due to ground water.

[4] Assumptions:

- 20 employees per day
- 8,500L/day of discharged production water