ENVIRONMENTAL ASSESSMENT REGISTRATION

Septage Treatment Facility Stephenville

Prepared for:
Department of Environment
Environmental Assessment Division
P.O. Box 8700
St. John's, NL
A1B 4J6

Prepared By:
Enviro Green Septic Pumping Ltd.
141 Carolina Ave.
Stephenville, NL
A2N 2S5

September 9, 2016

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1.0 Name of Project

Septage Treatment Facility

2.0 Proponent

2.1 Owner/Operator Information

Enviro Green Septic Pumping Ltd.
141 Carolina Ave.
Stephenville, NL
A2N 2S5
Contact: Shawn Boyd, Owner
Office: 709-643-5500
Cell: 709-214-7212
Email: dianeb1966@hotmail.com

2.2 Primary Contact for purposes of this Registration

Name: Justin House, P.Eng.
Official Title: Engineer & Project Manager for Enviro Green S.P. Ltd
Phone: 709-643-4948
Email: houseshousesnl@gmail.com

3.0 The Project

3.1 Nature of the Project

This proposal outlines the details of construction of a septage waste treatment facility in Stephenville, NL. The facility will consist of a septage receiving station, Sludge Treatment Beds and conventional effluent disposal field. The facility will be used to treat septic waste from Stephenville & west to Cape St. George primarily. Should the need arise to service other areas, there is ability to expand the facility.

3.2 Need for the Project

Although technology and environmental science has allowed many municipalities and local service districts around Newfoundland to progress to a central sewage treatment facility, there are still many areas throughout Port Au Port Peninsula, Bay St. George and South area who rely on disposal of their residential waste to a septic tank and disposal field. Numbers show that there are approximately 30,000 residences in this area that utilize a home septic system along the West Coast of NL. Enviro Green would like to service homes from the Town of Kippens and west. Factors such as cost of pumping and lack of education lead to homeowners avoiding the proper frequency of maintaining their septic tanks which leads to system failure and possible environmental issues. There is no septic waste treatment facility on the west coast of the island. All septic waste has to be trucked to a holding facility and then mass hauled to a facility on the Avalon Peninsula. With Enviro Green's local facility creating lower pump costs coupled with proper education through simple ads on radio and online, home owners will become better informed and perform better maintenance.

4.0 Project Details

4.1 Location

The facility will be located adjacent to the Town of Stephenville's sewer treatment beds in an industrial area on the outskirts of the Town. This location was chosen since the Town of Stephenville already has a very similar approved treatment facility there. Enviro Green has an agreement in place with the Stephenville Airport Authority on intention to purchase the land once approval for project is given from Government Authorities.

Figure 1 – Proposed Enviro Green Facility Location

4.2 Septage Treatment Process

Enviro Green will be using Abydoz Environmental Ltd. as a subcontractor for the project, and their expertise and technology will play a large role in the project. The treatment process will begin with pumping from haul truck through a screening facility. The non-organic waste that will be bagged and disposed of as per governing regulations. The sludge will move to a holding chamber, then onto the treatement beds. Abydoz has prepared a technical submission that outlines the proposed facility including how the treatment process will work. Please refer to Appendix A for this document.

4.3 Physical features of the Project

Access to the site will be achieved along the same publically maintained gravel road that the Town of Stephenville uses to access their facility. As outlined in the Abydoz document in Appendix A, Preliminary drawing C-1, the facility will consist of a septage receiving station, sludge cells, settling tanks, wetland bed and effluent disposal bed.

4.4 Construction

4.4.1 Construction Duration

The project will take 4-6 months once systems associated with the facility are ordered. It is Enviro Green's goal to have the facility in operation by the summer of 2017.

4.4.2 Environmental Impacts of Construction

The construction of the facility will entail surficial grubbing of grass/alders, excavation, ditching, backfilling, stone placement, liner installation and plant bedding. These activities will not affect any surface or subsurface water bodies. Envirogreen however will take all necessary precautions to ensure there is no harm to the Environment.

4.4.3 Pollution Risks related to Construction

As with any construction project in a natural environment, there are risks of pollution. Enviro Green will ensure construction methods strictly follow any and all conditions set forth by approval/permit for the project. Potential risks from the construction of the facility are:

- Sediment migration
- Windblown construction debris
- Dust
- Spill from equipment or equipment fueling
- Exhaust from equipment
- Noise from construction activities

4.4.4 Mitigation & Contingency Plans

Enviro Green will be using a sister company, Boyd & Bungay Construction Ltd., to perform the construction of the facility. Boyd & Bungay are fully C.O.R. certified, and have an impeccable record for safety and contingency planning. Some details on how the potential risks and impacts will be addressed:

- Sediment migration will be controlled by construction of shallow ditching of the site perimeter. The ditches will have a common outfall that will allow surface runoff to escape the site, however, the ditches will have intermittent hay bales as organic filters, and the outfall will have a combination of silt fencing and hay bales.
- There will be a dumpster located on site throughout the construction of the facility. All workers will be instructed to discard any waste directly to the dumpster when it is generated and ensure dumpster covers are closed at all times. The site will be kept in an orderly fashion at all times.
- Should weather patterns create excessive dust conditions, Boyd & Bungay will use their water tanker to spray the work area down.
- Boyd & Bungay Construction Ltd. has an Environmental Safety Plan and a Spill Response Plan that have been approved for projects such as the cleanup of a leaking oil well head in an ocean environment for the Pollution Prevention Division of the Department of Environment, as well

as work related to the Muskrat Falls project for Emera NL. The company is very familiar with risks related to construction in a natural environment.

- Exhaust from equipment cannot be avoided, however, Boyd & Bungay's equipment is modern and serviced regularly. Workers are always instructed not to let equipment idle if not in use, and always use "eco" modes on equipment where practicle.
- The noise from construction will be mainly from equipment in operation, and Boyd & Bungay Construction's equipment will have factory exhaust systems. Enviro Green does not foresee requirement for activities such as blasting or busting of rock.

4.4.5 Potential Environmental & Human Conflicts

Water Habitat

The facility location will not affect any surface water habitats as the closest water body is a pond 150m away from the site. The natural grade of the area is in the opposite direction from the proposed site.

Wildlife

Although the proposed site is on the outskirts of Town, there is no evidence of wildlife in the area. Construction activities will not affect wildlife as the area.

Airport

Since the land for the facility is being purchased from the Airport Authority, they obviously understand the intended use and have no issues related to the facility.

Forest

The proposed site does not have forest. It consists mainly of grass, gravel or alders.

Human Activities

There is no evidence of any human activity in the area, other than the users of the Stephenville facility. The construction will not prohibit any existing access or activities in the area.

4.5 Facility Operation

4.5.1 Possible Pollution Sources

Potential pollution sources during operation of the facility are:

- Non-organic waste
- Treated Effluent
- Dewatered and Biodegraded Solids
- Odours
- Noise Pollution
- Health & Safety

4.5.2 Pollution Mitigation

Enviro Green will have their Environmental Safety Plan in place for operation of the facility and will reduce the possibility of pollution sources as follows:

- Non-organic waste will be captured in the primary screening facility and bagged for disposal in an approved landfill site. The bags will be color coded and marked to ensure it can be easily identified as septic related waste.
- The treated effluent from the sludge beds along with any surface rainwater will funneled through two settling tanks. Sludge from the settling tanks will periodically be pumped back into the treatment beds as a recycle exercise. The liquid effluent from the settling tanks will then enter the wetland treatment beds which will provide more evapotranspiration. Finally, the effluent will then enter a filter rock bed where it will disperse naturally into the ground or evaporate into the air, similar to a conventional septic system disposal field. Enviro Green will construct access to the pipes between the wetland bed and the rock bed to allow periodic testing of effluent to ensure the facility is meeting or exceeding all Department of Environment guidelines for disposal of wastewater.
- The dewatered and biodegraded solids that will be produced from the bio-solids that are received by this facility will be removed on a 5-7 year period. This material will be stable and dry and can be disposed of as per the Environmental Protection Act and associated regulations and approvals, or can be mixed with topsoil and used for non-consumptive use. The plants in the system are not required to be harvested and will decompose.
- Odours produced by the facility will only occur when a haul truck is emptying a load through the system. Fortunately, the location is remote, and prevailing winds will carry any odors away from the Town.
- There will be very little noise created by the operation of the facility other than when the haul truck is on site emptying its contents and the screening/bagging system is running.
- All employees related to the operation of the facility will be versed in Enviro Green's Environmental Safety Plan as well as general Safe Work Practices. Since some employees will be handling inorganic solids, although bagged, disease control shots will be required as a precaution.

4.5.3 Potential Environmental & Human Conflicts

Ground Water

As already discussed, Enviro Green will monitor effluent to ensure the system is working properly and final effluent meets or exceeds Government guidelines.

Water Habitat

The facility location will not affect any surface water habitats as the closest water body is a pond 150m away from the site. The natural grade of the area is in the opposite direction from the proposed site.

Wildlife

Although the proposed site is on the outskirts of Town, there is no evidence of wildlife in the area. Operational activities will not affect wildlife as the area.

Airport

Since the land for the facility is being purchased from the Airport Authority, they obviously understand the intended use and have no issues related to the operation of the facility.

Forest

The proposed site does not have forest. It consists mainly of grass, gravel or alders.

Human Activities

There is no evidence of any human activity in the area, other than the users of the Stephenville facility. The construction will not prohibit any existing access or activities in the area. The site will be secured with a chain link fence system and only Enviro Green, other Haul Companies or Government Authorities will be allowed to access the facility.

5.0 Occupations

5.1 Construction

There will be approximately 8-10 people employed through the duration of the project from Enviro Green, Boyd & Bungay Construction, and Abydoz Environmental Inc. Enviro Green will manage all aspects of the construction.

5.2 Operation

Enviro Green will be owner and operator of the facility once constructed. Abydoz will be sub-contracted to provide plant and other related system maintenance when required. The facility will also be accessible to other licensed septic haulers in the area but accompanied by Enviro Green trained employees when accessing and using the facility. The operation will employ upwards of 5-6 people not including possible other haulers

6.0 Required Project Approvals

The first approval that is required is from the Department of Environment as the others cannot be obtained without it. Here is the sequence of the approvals required for the project:

Permit, approval or authorization	**Issuer**
Certificate of Approval – Enviro Green Septage Waste Treatment Facility Project	Department of Environment & Conservation
Airport Planning Zone	Transport Canada
Business Operation Permit	Town of Stephenville

7.0 Schedule

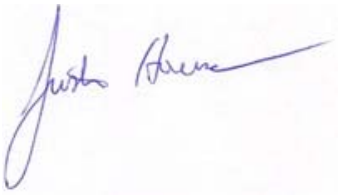
Preliminary engineering and planning is already underway as can be seen by the Abydoz document in Appendix A. If approvals are obtained in a timely fashion, the facility is planned to be in operation by summer of 2017.

8.0 Funding

At this time Enviro Green will be the sole finance source for the project. There are environmental related project sources of funding, but Enviro Green cannot pursue them until Department of Environment gives approval for the project.

9.0 Summary

Enviro Green wants to help educate septic owners and hopefully encourage better maintenance of systems, and at the same time, construct an environmentally friendly treatement facility that is needed to service the west coast of the island. This will result in a safer and cleaner environment to our area with the waste being disposed of in a controlled manner. Existing costs related to residential septic pumping are forcing home owners to put off proper septic maintenance. Enviro Green is striving to provide education and a less costly option for septic system owners by having this treatment facility in the area.



Justin House, P.Eng.
Approved Septic Designer 104694
Enviro Green Septic Pumping Ltd.

Encl.

APPENDIX A

ABYDOZ TECHNICAL INFORMATION

Envirogreen Septage Treatment - Preliminary Sizing and Description

Abydoz Environmental Ltd.
January 21, 2015

Introduction

Abydoz Environmental Inc. (Abydoz) is a Canadian based wastewater treatment firm that concentrates on the engineering and construction of Engineered Wetland Systems.

Abydoz has designed and constructed over 35 engineered wetland wastewater treatment facilities throughout Atlantic Canada over 15 years. The Abydoz system has a proven capability of treating wastewater from a variety of sources including municipal, residential, commercial, and industrial (see Figures 1-3 for typical system configurations).

Figure 1: Abydoz system in Glenwood, NL, serving a population of 1,800 (Commissioned, 2007)

Abydoz operates out of its head office in Newfoundland, with field offices established as required. Abydoz projects have won numerous awards based on the high performance results of its engineered wetland technology, including the 2015 Project of the Year award from the Atlantic Canada Water and Wastewater Association.

Figure 2: Abydoz system in Stephenville, NL, serving a population of 8,000 (commissioned, 2010)

Abydoz is presenting the following preliminary sizing, and costing of engineered wetlands for the treatment of wastewater at the Gander Airport.

System Parameters

Abydoz has used the anticipated influent flows and parameters of the system provided by Envirogreen. The system sizing consists of an assumed maximum septage flowrate of 800 m^3/year. The pumping season has been set at 6 months of the year, and pumping 5 days a week. This results in an average daily volume of 4.4 m^3, or 3 truckloads a week (based on a truck volume of 13.6 m^3, or 3000 UKGal). Additionally to account for a high volume day, a peak flowrate of the system has been set at 8 truckloads per week, resulting in a total volume of 109 m^3. The projected flow rates as supplied by Envirogreen can be seen in Table 1.

Table 1: System flow rates

Project Phase	Annual Pumped Volume (m^3)	Daily Volume (m^3)[1]	Truckloads Per Week[2]
Phase 1	796	4.4	3

[1] Daily volume is for a 6 month pumping season, flow attenuated over 7 days

[2] Based on a truck volume of 13.6 m3 (3000 UKGal)

Table 2 includes the anticipated discharge limits for regulated parameters, as well as the anticipated influent concentrations at average day flow.

Table 2: Wastewater Parameters

Parameter	Units	Proposed Limit[1]	Influent Concentrations
Total Suspended Solids (TSS)	mg/L	25	20,000
Biological Oxygen Demand (BOD)	mg/L	25	5,000
Ammonia	mg/L	N/A	60

[1] Based on Federal and provincial guidelines

System Sizing

The system has been sized to include three components, septage receiving station, sludge treatment beds, and effluent treatment wetland.

Septage Receiving Station

The septage receiving station is meant to remove inorganic solids, attenuate flows, and distribute sludge to the wetland beds. The facility's main components are a screen and a holding chamber with distribution pumps and piping. Due to the nature of septage sludge collection, septage will be received in relatively high volumes, and the need to attenuate the flow is important for the efficient operation of the system. Attenuation flow reduces the overall size of the system, and increases the efficiency of the treatment.

An outdoor septage receiving station will be installed which mainly consists of a spiral screen, and storage tank. The screen operates during unloading of the sludge and

removes large solids (generally inorganic) which can clog the system piping, and contaminate the final compost material. Screening are collected and disposed of at a solids landfill. Attached are descriptions and quotes from two receiving station suppliers.

Sludge is directed into a holding chamber. The chamber is designed to attenuate the sludge loads. This is done through slowly dosing the sludge to the treatment beds throughout the entire week. This allows for more efficient treatment and reduces the overall size of the plant. The chamber will include a mixing system to ensure the sludge density remains constant, and two submersible sludge pumps for the dosing. The storage tank has been sized at 115 m^3, allowing the storage of 8 truckloads equivalent for large volumes.

Sludge Treatment Beds

Sludge treatment beds preform the dewatering of the sludge. The beds are designed such that reeds (*Phragmites*) aid in the aeration and dewatering of the sludge into a compost material. Sludge is dosed to the beds on a regular basis and is composted onsite. The beds are designed such that the system is run continuously for approximately 10-15 years, after which point the sludge is removed as compost material for non-agricultural uses.

The initial system will consist of 4 beds, consisting of an area of 1,150 m^2, and will be designed to allow for additional 2 beds if flow increases. See attached drawings for preliminary layout and sizing. The sludge treatment system is designed based on Abydoz's experience at the Sludge Treatment Facilities in Stephenville and Bishop's Falls. Sampling results from 2015 for the Stephenville site have been attached. The Stephenville system has a subsurface discharge.

Effluent Treatment Wetland

Following the sludge treatment beds is a treatment wetland. The treatment wetland is designed to treat the effluent from the sludge beds to Provincial standards. This allows for the system to discharge the final effluent to the environment. The bed generally follows the sludge beds, and includes two septic tanks to settle out any solids from the sludge beds. The bed is a subsurface flow horizontal engineered wetland.

Engineered wetlands rely on the use of plants to provide oxygen to the bacteria that break down the organic waste, instead of relying on aeration or rotating systems to provide oxygen. This allows the system to maintain adequate oxygen levels within the biologically active areas with no energy input. This passive aeration allows the system to operate with minimal operational costs, and to continue to operate during power outages and inclement weather.

The bed can be sized and laid out to match the facilities landscaping and topography. A previous example of an Abydoz System that was designed to match landscaping and design can be seen in Table 3.

The engineered wetland design was based on the provided numbers, with an average daily flow of 4.4 m^3/day, a BOD of 250 mg/L, and ammonia of 60 mg/L. The results of the sizing calculations can be seen in Table 3.

Table 3: Engineered wetland sizing calculation results summary

Average Daily Flow (m^3/day)	Settling Tanks (m^3)	Horizontal Bed Surface Area (m^2)
4.4	8	1000

Site Location

Envirogreen has identified a location for the system near the existing Stephenville sludge treatment site. The site is idea due to the topography, access to power, and distance from residential or commercial facilities.

Septage Receiving Station Information

Hycor® Helisieve Plus® Septage Receiving Station

Model HLSPSR

A self-contained septage pre-treatment system

User-friendly, maintenance-free septage pre-treatment protects downstream processes.

Two septage receiving stations set up as income producers for a private enterprise

A heavy-duty spiral conveys the screenings to a dewatering zone

The Hycor® Helisieve Plus® Septage Receiving Station can turn your plant into a professional septage receiving facility overnight – without additional manpower or major retrofit.

Helisieve Plus is a self-contained system that pre-treats septage by removing solids, including rags, rocks and plastics prior to introduction to plant processes. If not removed, these solids can foul pumps, digesters and other downstream equipment. The Helisieve Plus unit removes these troublesome solids and dewaters them for landfill. It's fast, easy and effective. Haulers simply hook up to the unit, discharge their load and are on their way again in minutes. Incoming flow is automatically regulated by a control valve to prevent overflow. Odors are contained in the stainless steel receiving tank.

With special options, the Helisieve Plus unit can become an automatic, self-operating septage receiving station with a coded security system and automatic load volume measurement for billing purposes. Additional options, such as pH and conductivity sensors shut down the system if levels fall outside pre-set ranges.

Screening is performed in a screen basket with 1/4" openings which allows the septage to pass through and captures the solids. The screenings are conveyed by a shaftless spiral to the dewatering zone where they are dewatered for landfill.

The shaftless spiral is fabricated of heavy carbon steel, double flighted for added durability. Because there is no center shaft, sticks, rags, stringy materials and rocks won't get caught up in the conveying spiral.

The entire process is simple to operate and maintain. The shaftless spiral has no submerged bearings or intermediate hanger bearings. A rugged brush mounted to the spiral continually wipes the screen basket clean. After a load is screened, a spray system automatically washes the tank interior.

Fast payback

A Helisieve Plus® Septage Receiving Station prevents plant upsets and protects downstream equipment. It reduces hauling and landfill costs by dewatering the screenings for landfill and may even generate revenue for your plant. Payback time varies with the market price for septage acceptance.

Advantages

- High capacity facilitates fast unloading – an average of ten minutes
- Level control automatically regulates septage feed and prevents overflow
- 1/4" round screen openings remove troublesome solids and protect the process
- Dewatering reduces weight and volume and prepares screenings for landfill
- Fully enclosed stainless steel housing reduces odors
- Low maintenance – shaftless transport spiral has no submerged bearings
- Automatic washdown – spray headers wash the tank interior after shutdown
- Optional security access system allows 24-hour access for pre-qualified haulers
- Optional flow meter and totalizer provide computerized monthly billing
- Optional pH and metal conductivity sensors prevent acceptance of "off spec" loads

The Helisieve Plus® Septage Receiving Station System turns plants into professional receiving stations overnight

In-channel models are also available

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ROTARC®
TYPE SB
SHAFTLESS SPIRAL FINE SCREENS

TYPE SB

Shaftless Spiral Fine Screens

The shaftless spiral fine screen with its small foot print and low operating costs provides high quality at low cost without any compromise on performance and reliability.

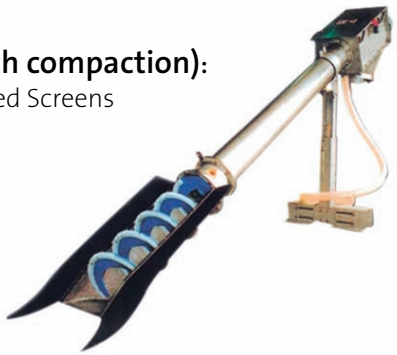
The screen is typically installed directly into a channel and is supplied with pivoting capability. The unit consists of a solids capture screen, a shaftless cleaning/conveying spiral and a drive motor. The solids progressively collect onto the screen mesh and cause it to gradually blind. The spiral is activated as the upstream water level rises. Replaceable cleaning brushes are attached to the periphery of the spiral, in the screen area, to clean the openings. The spiral screw then conveys the solids up to the discharge point.

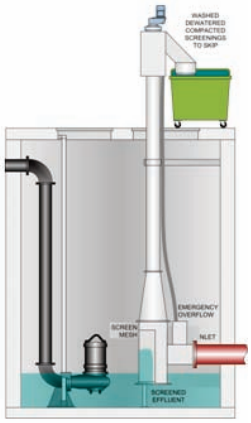
- The screen can be fitted with a press zone for screenings dewatering and volume reduction. Compaction can provide up to 40% Dry Solids.

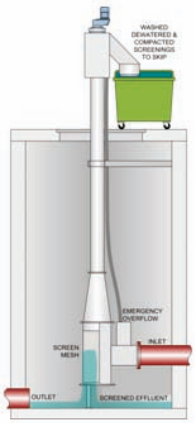
- Additional spray wash can be installed in the transport zone to reach higher organic removal levels. Up to 90% solids washing efficiency can be attained.

- Continuous bagging system is available to receive screenings to contain odors.

SB & SBC (with compaction):
Channel Mounted Screens







SBC/V: Vertical screens for restricted space applications

TYPE SB

Shaftless Spiral Fine Screens

Specifications

Flow range: Up to 7 MGD depending on the application and the screen opening size.

Screen availability: For channel width from 12-inch (300mm) to 36-inch (900mm)

Screen size availability:
Perforated holes:
0.08-inch (2mm)
0.12-inch (3mm)
0.16-inch (4mm)
0.20-inch (5mm)
0.24-inch (6mm)
0.28-inch (7mm)
0.40-inch (10mm)

Wedge wire:
0.01-inch (0.25mm)
0.02-inch (0.5mm)
0.04-inch (1mm)
0.08-inch (2mm)

SBC/T: Screen in Stainless Steel Tank

Fabrication:
Fabricated components (other than the spiral screw): Stainless steel AISI 304 or 316 on request
Spiral screw: Micro-Alloy steel or Stainless steel on request (AISI 304 or 316)

John Meunier Inc. offers complete headworks solutions. We are recognized for our expertise in complete headworks design. We provide efficient solutions, combining key equipment from our product line. Call us today to find out about our great products!

Features

- High solids separation: Wedge-wire or perforated-hole type screen ensures high separation efficiencies
- Stationary solids capture screen: Ensures retained solids cannot bypass the screen.
- Small footprint Compact "ALL-IN-ONE" screenings removal, washing and compaction option design.
- 1 inch brush provides high level of screen openings cleaning & extend components durability.

Benefits

- High quality and reliability at low cost
- Quick and easy installation
- Retrofit capability into existing channels
- Reduced disposal costs with screenings press
- Reliable and automatic self cleaning operation
- Eliminates pump clogging

Typical Applications

- Pump stations, Manholes , Sumps
- Municipal wastewater treatment
- Industrial effluent discharge
- Slaugther houses, food processing
- Process liquor or fluid screening
- Sludge and scum screening
- Stream, brook or pond screening

Veolia Water Solutions & Technologies North America

John Meunier Inc. has been serving North-American municipalities and industries since 1948 by offering them complete water and wastewater treatment solutions. With our state-of-the-art technologies, efficient products and team of seasoned professionals, we design solutions to perfectly match the needs of our clients.

John Meunier Inc. is a subsidiary of Veolia Water Solutions & Technologies, the Veolia Water division which designs and manufactures technological solutions for water and wastewater treatment. Veolia Water is the world leader in water services, serving over 110 million people worldwide with close to 68,000 employees.

www.veoliawaterst.com

Revised: 2011-09-13

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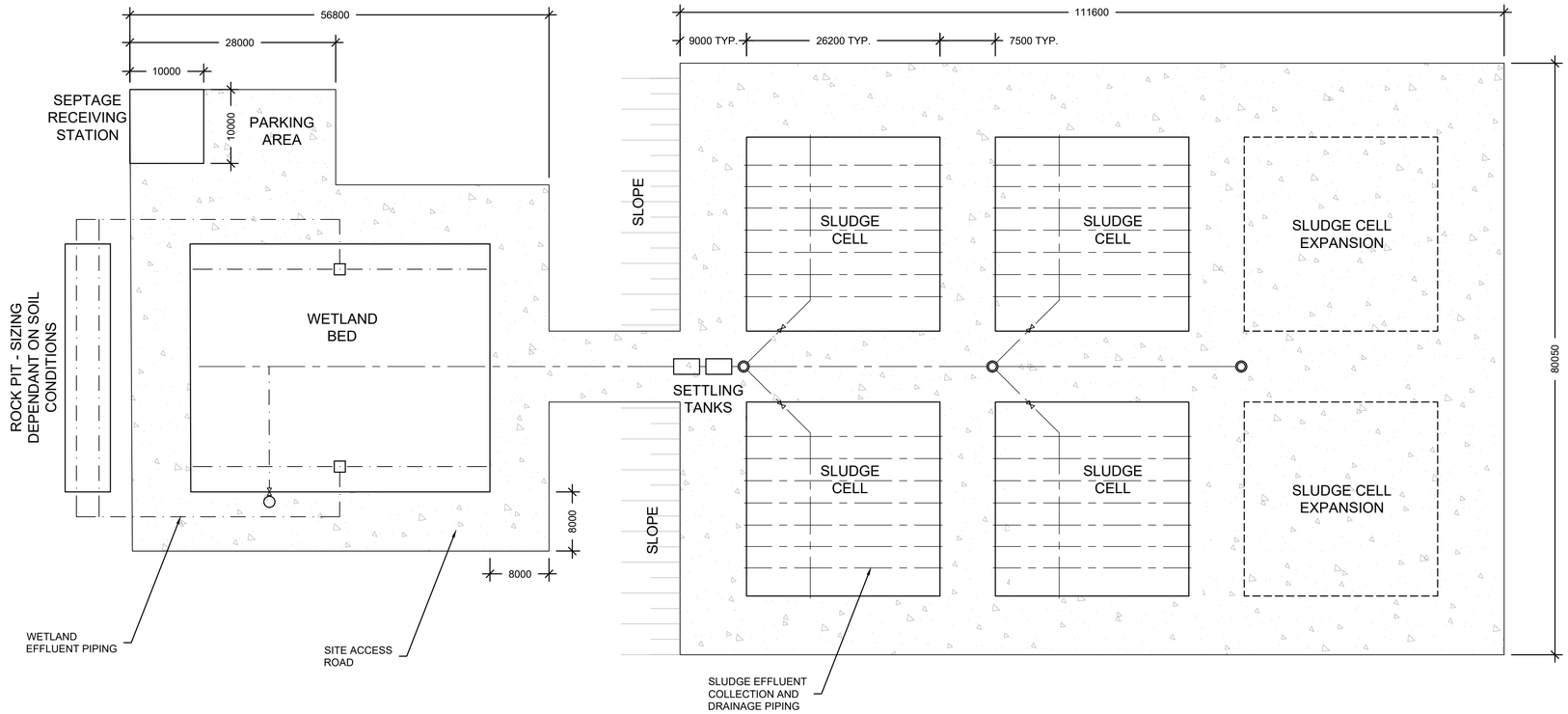
Preliminary Drawings



SITE PLAN
SCALE: 1:750

1
C-1

ABYDOZ
ENVIRONMENTAL INC.
Treating Wastewater...Naturally.™

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Portugal Cove – St. Philips, Newfoundland
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website : www.abydoz.com

STAMP

DRAWN BY: SC
DATE: JAN. 2016
CHECKED BY:
APPROVED BY:

NO.	DESCRIPTION	MM/DD/YY
	REVISIONS	

NOTES:

1) This drawing is for tendering purposes only.

2) Only figured dimensions are to be used. Any discrepancies are to be reported to the Engineer before proceeding.

3) All materials and workmanship to comply with the National Building Code of Canada.

4) This system is patented and confidential. Duplication or reproduction of the drawing without express written permission from "ABYDOZ ENVIRONMENTAL INC." is strictly prohibited.

CLIENT:
Envirogreen

PROJECT TITLE:
SEPTAGE TREATMENT FACILITY

DRAWING TITLE:
PRELIMINARY SITE PLAN
DRAFT – NOT FOR CONSTRUCTION

SCALE: AS SHOWN
PROJECT:
REVISION NO.: 1
DRAWING NO.: C-1

Sampling Results

Abydoz Environmental

Sampling Results 2014-2015

Stephenville Sludge Treatment Facility

Parameters	Unit	February 24, 2015			March 30, 2015			April 14, 2015			May 21, 2015		
		Raw Sludge	Sludge Bed Effluent	Final Effluent	Raw Sludge	Sludge Bed Effluent	Final Effluent	Raw Sludge	Sludge Bed Effluent	Final Effluent	Raw Sludge	Sludge Bed Effluent	Final Effluent
CBOD	mg/L	4,800	170	18	-	200	150	2,100	81	68	7,400	230	170
TSS	mg/L	12,000	ND	29	-	66	51	7,600	27	13	51,000	27	22
Total Phosphorus	mg/L	61	13	5.3	-	10	10	42	7.5	7.1	220	12	8.7
Nitrogen (Ammonia Nitrogen)	mg/L	48	53	31	-	61	58	25 (1)	33	31	140	45	42
pH (15 C)	pH	6.93	6.96	7.04	-	6.77	6.99	6.48	6.85	6.92	5.74	6.39	6.56
Total Kjeldahl Nitrogen	mg/L	300	79	42	-	70	69	330	38	32	910	58	57
Un-ionized Ammonia_N (@ 15C)	mg/L	0.11	0.13	0.092	-	0.12	0.15	0.02	0.064	0.072	0.021	0.031	0.042
Escherichia coli	CFU/100ml	-	450	ND	-	190	600	51,000	90	93	130,000	ND	180
Total Coliforms	CFU/100ml	-	5,000	20	-	9,000	6,000	1,500,000	1,800	1,400	2,900,000	36,000	>2500

Parameters	Unit	June 24, 2015			July 13, 2015			October 26, 2015		
		Raw Sludge	Sludge Bed Effluent	Final Effluent	Raw Sludge	Sludge Bed Effluent	Final Effluent	Raw Sludge	Sludge Bed Effluent	Final Effluent
CBOD	mg/L	2,200	98	17	7,100	89	32	5,300	89	60
TSS	mg/L	7,000	64	65	21,000	51	11	16,000	120	100
Total Phosphorus	mg/L	37	17	25	91	10	10	100	22	13
Nitrogen (Ammonia Nitrogen)	mg/L	17	87	65	45	63	66	12	94	94
pH (15 C)	pH	5.91	7.24	7.19	5.3	7.02	7.07	5.3	6.73	7.05
Total Kjeldahl Nitrogen	mg/L	190	110	77	280	72	72	330	100	82
Un-ionized Ammonia_N (@ 15C)	mg/L	0.0037	0.41	0.28	0.0025	0.18	0.21	0.0007	0.14	0.29
Escherichia coli	CFU/100ml	64,000	120	200	130,000	-	61	98,000	940	>250
Total Coliforms	CFU/100ml	920,000	910	2,300	1,600,000	-	>2500	1,800,000	>2500	>2500