Manitoba
Sustainable Development
Environmental Stewardship Division
Environmental Approvals Branch
123 Main Street, Suite 160, Winnipeg, Manitoba R3C 1A5
T 204 945-8321 F 204 945-5229
www.gov.mb.ca/conservation/eal

File: 4914.00
Environment Act Licence No. 2612 RR

February 27, 2017

Mr. Monty Peckover
Evergreen Environmental Technologies
Box 947
Minnedosa, MB R0J 1E0
Via Email: evergreentech@xplornet.ca

Dear Mr. Peckover:

Re: Evergreen Environmental Technologies – Extension Approved Notice of Alteration

Thank you for your letter dated February 15, 2017 in which you requested a two year extension to the deadline of March 31, 2017 for the approved minor alteration to Environment Act Licence 2612 RR. You indicated that funding for the gasification pilot project is in the process of being secured. Your request has been approved and the new deadline to complete the demonstration project will be March 31, 2019. Please note that all requirements stipulated on the approved notice of alteration are valid until the demonstration project is completed.

If you have any questions regarding this matter, please contact Mr. Eshetu Beshada of this office at (204) 945-7023.

Yours sincerely,

Tracey Braun

Tracey Braun, M.Sc.
Director

c: Don Labossiere/ Tim Prawdzik - Environmental Compliance and Enforcement Branch
Cory Switzer/ Eshetu Beshada - Environmental Approvals Branch
Brian Reynolds, Celtic Power & Machining - brian@celticpower.ca
Jerry Green, Sigma Professional Engineering, - jgreen0105@yahoo.com
Wendy Bulloch, Southwest Regional Development Corporation - bullochw@mymts.net
Public Registries

Evergreen Environmental Technologies

P.O. Box 947, Minnedosa, MB (204) 867-7161

February 15/17

Tracy Braun
Manitoba Sustainable Development
Environmental Approvals
2nd Floor 123 Main Street (Box 80)
Winnipeg Manitoba R3C 1A5

Re: Notice of Alteration to Evergreen Environmental Technologies Licence 2612RR. File No. 4914.00

Dear Ms. Tracy Braun;

In 2015 Evergreen Environmental Technologies approved a partnership with Southwest Regional Development Corporation of Hamiota, Manitoba and Celtic Power & Machining of Rapid City, Manitoba to hold a site demonstrations of household waste and other landfill waste materials in a gasification process. This request for Alteration to License # 2612RR was received May 20, 2015, with the expiration on March 31/16. In January 2016 Evergreen Environmental requested a year extension to Licence #2612R, which was granted to March 31/17.

At this point funding for the project is ongoing. An application was sent to Green Municipal Fund through Eco-West. Evergreen Environmental Technologies would ask for an extension to the Notice of Alteration to Licence #2612RR be extended to March 31 2019.

I have attached the original addendum outlining the required information concerning the demonstration gasification process.

If you require further information, please contact Dave MacDonald or Wendy MacLennan: Evergreen Environmental Technologies at evergreentech@xplornet or phone 204-867-7161.

Yours truly

Monty Peckover
Chairman of Board
Evergreen Environmental Technologies

ADDENDUM

Notice of Alteration to License – Description of Changes

Partners with Evergreen Environmental Technologies Demonstration Gasification Project

Celtic Power & Machining:
Principals: Brian Reynolds, Gavin Reynolds and Eileen Reynolds. Celtic Power & Machining is a Manitoba registered company.

Sigma Professional Engineering:
Principals: Gene M (Mike) Pope and Jerry Green. Sigma Professional Engineering is an American corporation registered in Florida. Mike Pope was instrumental in the installation and operation of a solid municipal waste gasifier in the town of Barrow, Alaska. He was also involved in the construction of gasifier systems in England and Switzerland.

Southwest Regional Development Corporation (SRDC) - was formed and incorporated in 2003 as a non-profit Economic Development Corporation to promote regional economic development through funding from the Provincial Government.

Background:

Celtic Power & Machining have been involved with wood gasification projects in the past and were successful in running an industrial slow-speed generator on the gas produced. They developed an operating system which allowed the generator to supplement gas with biodiesel seamlessly adjust feed quantities to compensate for fluctuations in the calorific value of the gas.

Mike Pope of Sigma Professional Engineering LLC was instrumental in the installation and operation of a solid municipal waste gasifier in the town of Barrow, Alaska. He was also involved in the construction of gasifier systems in England and Switzerland. (Please see Air History on pages 5 and 6 of this document.)

The technical skills of both companies will be used to develop the demonstration gasifier/generator system which will primarily be used to dispose of municipal solid waste in a 100% efficient manner. The system could be located anywhere there is a need to eliminate waste and produce power.

Description of proposed development, including construction, operation, and decommissioning if applicable:

The Evergreen Environmental Technologies site will not require any preparation other than to identify a need for a more level surface in order to situate the demonstration gasification project.

The gasification chamber will basically be constructed from a 40 foot shipping container with added elements. A hopper will be constructed on top of the container for loading purposes. The gas produced will be fed into an industrial, heavy, slow-speed generator which would also be housed in a 40 foot shipping container. The whole system would be very low impact visually and environmentally.

The household waste used to test the system will be loaded directly into the gasification chamber from Evergreen Environmental Technologies. Emissions testing of household waste will be conducted.

The facility contains a landfill area, recyclables collection area, a pesticide container collection depot, and an area for tires, Household Hazardous Waste, Wood, scrap metals and a Soil Farm. This segregation of materials will allow for easy access of particular products to place in the chamber and gasify – thereby running individual and accurate emissions tests on various waste products.

Description of existing environment in the project area:

The gasifier will be partially built at Celtic Power & Machining and then moved to the Evergreen Environmental Technologies (EET) site. The EET site has met acceptable standards per its current emissions license requirements.

The unit will be completely mobile and can be moved and/or taken apart at the end of the expected demonstration time.

Description of environmental effects of the proposed development:

We believe that there would be no environmental effects due to the operation of the gasifier. Any emissions would be negligible and while we do not have data specific to the proposed unit, we do have data collected from the gasifier constructed in Barrow, Alaska. The gas produced was not used to fuel a generator but flared to atmosphere. A copy of this data is attached on pages 5 and 6.

Description of the human health effects of the proposed development:

There would be no reason to expect any detrimental effects to human health resulting from the operation of this gasifier. If the demonstration project is built and proved it will eliminate the need for odorous, unsightly landfill sites and by eliminating these it would also remove the vermin population that always proliferates at landfill sites.

Mitigation measures to protect the environment and human health and residual environmental effects:

The only measures required for protection of the environment would be the containment of any waste used for gasification. Since this is already in place at Evergreen Environmental Technologies site – there is no concern to this containment.

The exhaust from the generator engine would have no more effect that vehicles passing on the highway and since the generator unit will be enclosed in a shipping container there would be no risk of oil or fuel spilling onto the ground.

Follow-up plans, including monitoring and reporting:

Once the gasifier is built and tested, there are potential plans in place to involve University of Manitoba – Faculty of Engineering Staff (Professor studying gasification) and a student interested in gasification. It is planned to involve this student and possibly Brandon University Science students in the data processing to determine emissions, calorific values of various types of feedstock, and electrical power generated, etc.

Evergreen Environmental Technologies, SRDC, Celtic Power & Machining expect when the gasification unit is operating smoothly, plans will be made to host a demonstration day to promote, educate and communicate the use of the gasification system to other waste management landfill sites, RMs, government, industry and business personnel in rural Manitoba.

Air Emission Testing History

Lab	System	Waste	Dust	HCl	SO_2	NOx	CO	Diox/ Furan	Hg	Pb	Cd
			mg/ dscm	PPM	PPM	PPM	PPM	ng/ dscm	ug/ dscm	ug/ dscm	ug/ dscm
USEPA	**STANDARD**	**=**	**24**	**25**	**30**	**150**	**50**	**13**	**80**	**200**	**20**
	Barrow,AK	MSW	9	NT	47	132	0.6	NT	NT	NT	NT
	Barrow,AK	MSW	13	NT	18	146	3	0.1	NT	NT	NT
	Allen,KY	MSW	18	49.4	1.77	56	0.2	196.7	30	14	2
CORE Labs	Malaysia	MSW	4	20.2	1.88	41	0.4	11.6	46	66	15
CORE Labs	Malaysia	Bio-M	9	24.6	0.76	30	1.11	12.8	36	49	2
CORE Labs	Malaysia	Indust	10	6.4	11	88	1.4	NT	19	76	4
CORE Labs	Malaysia	MSW	5	17.6	9.4	57	1.8	1.272	21	53	8
CORE Labs	Malaysia	MSW	6	12	17	53	3	1.99	24	7.7	4.7
CORE Labs	Malaysia	Bio-M	7	11	NT	21	61	0.9	45	5.5	9
CORE Labs	Malaysia	MSW	3	32	9	56	3	2	61	94	7
AmTest	Anchorage	Auto Fluff	24	5	27	101	3	6	21	16	8
AmTest	Anchorage	Rail Ties	7	10	11	81	2	7	29	62	2
AmTest	Anchorage	Auto Fluff	20	18	21	47	4	6	24	82	3
AmTest	Anchorage	MSW	4	13	18	55	2	3	37	15	2
WRI	Anchorage	Oily Wste	6	6	7	70	6	3.5	3	18	29
WRI	Anchorage	MSW	5	17	1	21	3	9.7	1	37	2

Date	Lab	System	Waste	Dust	HCl	SO_2	NOx	CO	Diox/ Furan	Hg	Pb	Cd
				mg/ dscm	PPM	PPM	PPM	PPM	ng/ dscm	ug/ dscm	ug/ dscm	ug/ dscm
	USEPA	**STANDARD**	**=**	**24**	**25**	**30**	**150**	**50**	**13**	**80**	**200**	**20**
4/93	WRI	Anchorage	Bio-M	13	30	16	68	2	2	12	15	4
4/93	WRI	Anchorage	Tires	16	24	12	71	5	1.5	61	10	3
4/93	WRI	Anchorage	MSW	5	13	7	58	2	7	70	25	2
12/90	WRI	Anchorage	Bio-M	4	17	12	70	6	3	ND	18	2
12/90	WRI	Anchorage	Tires	7	10	11	77	18	NT	ND	8	4
12/90	WRI	Anchorage	Tires	2	3	1	75	15	NT	ND	3	2
12/90	WRI	Anchorage	MSW	1	22	2	33	7	6	8	4	2
9/90	WRI\YORK	Laramie	Tires	5	24	70	84	75	3	ND	17	4
8/90	WRI\YORK	Laramie	Tires	6	16	14	99	4	1	2	17	4
5/90	WRI	Laramie	MSW	17	21	45	115	7	NT	1	5	9
10/89	WRI	Laramie	Bio-M	5	10	ND	46	1	9	4	3	8
9/89	WRI	Laramie	Polym	2	4	22	54	2	27	3	2	1
8/89	WRI	Laramie	PVC	6	15	2	76	2	NT	NT	NT	NT
8/89	WRI	Laramie	PVC	4	2	1	76	1	39	4	7	2
10/88	WRI	Laramie	PVC	1	23	2	85	4	18	NT	NT	NT
10/88	York	Laramie	MSW	1	17	ND	48	26	ND	1	3	8
10/88	York	Laramie	MSW	1	11	ND	31	23	ND	1	2	8