



**Conservation and Climate**

Environmental Stewardship Division

Environmental Approvals Branch

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File No.: 3967.10

June 18, 2021

Greg Elson  
Manager, Public Works  
Rural Municipality of St. Clements  
Box 2 Grp 35 RR1  
East Selkirk MB R03 0M0  
[pwmanager@rmofstclements.com](mailto:pwmanager@rmofstclements.com)

Dear Greg Elson:

**Re: Rural Municipality of St. Clements – Notice of Alteration Approval – Pilot Project for Leachate Irrigation at Libau Waste Disposal Ground - Environment Act Licence No. 2274 S2 RRR**

Thank you for your May 26, 2021 Notice of Alteration request for alteration to Environment Act Licence No. 2274 S2 RRR, originally issued for the operation of the Development being a Class 1 Waste Disposal Ground located on east half of 29-15-7 EPM in the Rural Municipality of St. Clements. The submission is considered a Notice of Alteration pursuant to Section 14 of The Environment Act.

The intent of the request is to conduct a pilot project for leachate irrigation at Cell No. 2 of the Libau Waste Disposal Ground in the Rural Municipality of St. Clements to assess the viability of leachate irrigation as an alternative leachate treatment.

Upon review of the request, I am satisfied that the environmental effects of the proposed leachate irrigation pilot project at Cell No. 2 of Libau Waste Disposal Ground as described in the May 26, 2021 Notice of Alteration would be insignificant. Therefore, in accordance with Section 14(2) of The Environment Act, I hereby approve implementation of the above pilot study in accordance with Schedule A of this Notice of Alteration Approval.

All clauses of Environment Act Licence No. 2274 S2 RRR remain in effect.

If you have any questions concerning this Notice of Alteration Approval, please contact Edwin Yazon, Environmental Engineer, Environmental Approvals Branch, at [Edwin.Yazon@gov.mb.ca](mailto:Edwin.Yazon@gov.mb.ca) or 431-335-2554.

For questions relating to the ongoing administration of Environment Act Licence No. 2277 S2 RRR, please contact Tyler Kneeshaw, Regional Supervisor, Environmental Compliance and Enforcement Branch, at [Tyler.Kneeshaw@gov.mb.ca](mailto:Tyler.Kneeshaw@gov.mb.ca) or 204-239-3608.

Yours sincerely,

Original signed by  
Siobhan Burland Ross

for Shannon Kohler, Director  
The Environment Act

cc: Stan Lozecznik, Bonnie Hoffensetz, Jason Mann, Tony Kuluk - KGS group  
Kristal Harman, Yvonne Hawryliuk, Tyler Kneeshaw - Environmental Compliance and Enforcement  
Asit Dey, Edwin Yazon - Environmental Approvals  
Public Registry

**Schedule A to June 18, 2021 Notice of Alteration Approval for the Leachate  
Irrigation Project at Libau Waste Disposal Ground – Environmental Act  
Licence No. 2274 S2 RRR**

**SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS**

1. The Licencee shall construct the storage tanks and irrigation plots on Cell No. 2 of the Development as described in the May 26, 2021 Notice of Alteration, unless otherwise approved by the Director of Environmental Approvals Branch.
2. The Licencee shall construct containment berms surrounding the aeration tanks and irrigation plots to prevent escape of leachate and/or surface runoff contaminated with leachate from aeration tanks and irrigation plots.
3. The Licencee shall not carry out leachate irrigation between the 15<sup>th</sup> day of October of any year and the 15<sup>th</sup> day of May of the following year, unless otherwise approved by the assigned Environment Officer of the Environmental Approvals Branch.
4. The Licencee shall, in the event of an accidental spill of leachate, take all necessary actions to report the spill by calling the Environmental Emergency Report Line 204-944-4888 (toll free 1-855-944-4888) in accordance with regulatory requirements, contain the spill, manage the impacted environment, and restore the environment to the satisfaction of the Director of Environmental Compliance and Enforcement.
5. The Licencee:
  - a) shall carry out leachate irrigation only when weather conditions and irrigation spray locations are such that the aerated leachate will not be carried onto public roadways or onto neighboring private properties;
  - b) shall not carry out leachate irrigation for more than 10 continuous hours in any 24 hour period;
  - c) shall reduce the spray irrigation application rate during any application of leachate if ponding or surface runoff occurs during irrigation;
  - d) shall, if wind causes the aerated leachate to drift within the restricted zones as outlined in the Clause 5d) of this Notice of Alteration Approval, stop the leachate irrigation until the wind conditions subside; and
  - e) shall not carry out leachate irrigation:
    - i) within 300 metres of any dwelling not owned or not lawfully controlled by the Licencee;
    - ii) within 15 metres of a groundwater feature covered by permanent vegetation or 20 metres of a groundwater feature without any permanent vegetation;
    - iii) between the water's edge and the high water mark of a wetland, bog, marsh, or swamp other than a major wetland, bog, marsh or swamp;
    - iv) within 30 metres of a lake or reservoir, not designated as vulnerable;
    - v) within 15 metres of a river, creek or stream designated as vulnerable;
    - vi) within 3 metres of a river, creek or stream designated as vulnerable, a 3<sup>rd</sup> order drain or higher, a major wetland, bog, marsh or swamp, or a constructed retention; or
    - vii) where there is escape of leachate from the containment berms or property boundary.

6. The Licencee shall not recirculate leachate or contaminated water collected at the Development into the landfill cells, unless approved by the Director of Environmental Compliance and Enforcement Branch.
7. The Licencee shall conduct a monitoring and analysis program, in accordance with Attachments 1 and 2 of this Notice of Alteration Approval, to determine the following:
  - a) the composition of the aerated leachate;
  - b) the background levels of selected soil parameters for each irrigation plot before leachate irrigation;
  - c) the levels of selected soil parameters for each irrigation plot after leachate irrigation; and
  - d) the total metals accumulated in the plants for each irrigation plot.
8. The Licencee shall submit to the Director of Environmental Approvals Branch a final report on the findings and recommendations of the pilot study by February 28, 2022. The final report shall include details of, but not limited to, the following:
  - a) the details of the field monitoring programs on the leachate irrigation project;
  - b) copies of the laboratory analytical results in accordance with Clause 7 of this Notice of Alteration Approval;
  - c) summary of laboratory analytical results in accordance with Clause 7 of this Notice of Alteration Approval; and
  - d) discussion of the results of monitoring and analysis carried out pursuant to Clause 7 of this Notice of Alteration Approval.

## Attachment 1 to June 18, 2021 Notice of Alteration Approval

### (Leachate Irrigation Pilot Project at Libau Waste Disposal Ground - Environment Act Licence No. 2274 S2 RRR)

Monitoring and analysis requirements pursuant to Clause 7 of Schedule A to June 18, 2021 Notice of Alteration Approval

#### A. Aerated Leachate

1. Representative samples of leachate shall be collected from aerated tanks.
2. The sample of leachate shall be analyzed for the following parameters\*:
 

a) conductivity	u) antimony
b) pH	v) arsenic
c) alkalinity	w) barium
d) chloride	x) beryllium
e) sulphate	y) bismuth
f) sodium	z) boron
g) potassium	aa) cadmium
h) Polycyclic Aromatic Hydrocarbons (PAHs)	bb) calcium
i) COD	cc) cesium
j) BOD	dd) chromium
k) total organic carbon	ee) copper
l) total solids	ff) iron
m) volatile solids	gg) lead
n) nitrate nitrogen	hh) magnesium
o) total Kjeldahl nitrogen	ii) manganese
p) ammonia nitrogen	jj) mercury
q) organic nitrogen	kk) nickel
r) total phosphorus	ll) potassium
s) ortho Phosphorus	mm) titanium
t) total hardness	nn) zinc

\*Analysis for heavy metals must be carried out in accordance with Attachment 2 of this Notice of Alteration Approval.

#### B. Soil

1. Representative samples from each irrigation plot shall be taken before and after leachate irrigation.
2. Soils samples shall be analyzed for the following parameters:
 

a) conductivity	h) Polycyclic Aromatic Hydrocarbons (PAHs)
b) pH	i) COD
c) alkalinity	j) BOD
d) chloride	k) total organic carbon
e) sulphate	l) total solids
f) sodium	m) volatile solids
g) potassium	n) nitrate nitrogen

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|----------------------------|---------------|
| o) total Kjeldahl nitrogen | bb) calcium   |
| p) ammonia nitrogen        | cc) cesium    |
| q) organic nitrogen        | dd) chromium  |
| r) total phosphorus        | ee) copper    |
| s) ortho Phosphorus        | ff) iron      |
| t) total hardness          | gg) lead      |
| u) antimony                | hh) magnesium |
| v) arsenic                 | ii) manganese |
| w) barium                  | jj) mercury   |
| x) beryllium               | kk) nickel    |
| y) bismuth                 | ll) potassium |
| z) boron                   | mm) titanium  |
| aa) cadmium                | nn) zinc      |

\*Analysis for heavy metals must be carried out in accordance with Attachment 2 of this Notice of Alteration Approval.

### C. Plants

1. The type of plants grown on the irrigation plots shall be identified.
2. Each type of plant samples shall be analyzed for the following parameters:
 

a) antimony	k) copper
b) arsenic	l) iron
c) barium	m) lead
d) beryllium	n) magnesium
e) bismuth	o) manganese
f) boron	p) mercury
g) cadmium	q) nickel
h) calcium	r) potassium
i) cesium	s) titanium
j) chromium	t) zinc

## Attachment 2 to Notice of Alteration Approval

### (Leachate Irrigation Pilot Project at Libau Waste Disposal Ground - Environment Act Licence No. 2274 S2 RRR)

Analysis of metals pursuant Clause 7 of the Schedule A of June 18, 2021 Notice of Alteration Approval

The analysis for all metals shall be carried out in accordance with the following requirements:

1. The laboratory performing these analysis shall:
  - a) possess and maintain accreditation with the Canadian Association for Laboratories Inc. (CALA);
  - b) operate a quality assurance program acceptable to the assigned Environment Officer;
  - c) monitor the accuracy of the leachate and soil analyses for each set of samples of leachate or soil through the use of a suitable reference material acceptable to the assigned Environment Officer; and
  - d) analyze field duplicates of samples with acceptance criteria of +/- 10 percent.
  
2. A copy of the analytical procedures and the analytical results for associated reference materials used in the laboratory, and any other controls used in the analysis, shall be submitted with the field sample results.
  
3. If the analytical results of any associated materials do not meet the following criteria, the leachate and/or soil samples must re-analyzed:
 

a) Arsenic	+/- 35 percent from the reference value
b) Cadmium	+/- 25 percent from the reference value (for values above 1 microgram/gram)
c) Cadmium	+/- 35 percent from the reference value (for values below 1 microgram/gram)
d) Chromium	+/- 25 percent from the reference value
e) Copper	+/- 25 percent from the reference value
f) Lead	+/- 25 percent from the reference value
g) Mercury	+/- 25 percent from the reference value
h) Nickel	+/- 25 percent from the reference value
i) Zinc	+/- 25 percent from the reference value