Manitoba
Environment and Climate Change
3Environmental Approvals Branch
Box 35, 14 Fultz Boulevard
Winnipeg MB R3Y 0L6
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EABDirector@gov.mb.ca

File No.: 241.50

August 28, 2025

Allie Henderson
Chief Administrative Officer
Rural Municipality Grey
27 Church Avenue East
Box 99
Elm Creek MB R0G 0N0
cao@rmofgrey.ca

Dear Allie Henderson:

Re: Rural Municipality of Grey - Environment Act Licence No. 3446

Please find enclosed the Environment Act Licence in response to your proposal dated September 9, 2021, and an associated notice of alteration dated May 23, 2023, for the removal and land application of biosolids from the lagoon and for upgrades to the lagoon respectively.

All licence requirements and federal, provincial, and municipal regulations and by-laws must be followed. The licensee must get approval from the director per The Environment Act to alter the development.

Anyone affected by this decision may appeal, in writing, to the Minister of Environment and Climate Change at minecc@manitoba.ca by September 29, 2025. The licence is available on the public registry at https://www.gov.mb.ca/sd/eal/registries/index.html.

For clauses 28-30, the environment officer of the Environmental Approvals Branch is Robert Boswick, Senior Environmental Engineer, who may be contacted at Robert.Boswick@gov.mb.ca or 204-918-5853.

…2

If you have any questions regarding this approval, please contact Tyler Kneeshaw, Regional Supervisor, Environmental Compliance and Enforcement Branch at EnvCEPortage@gov.mb.ca or 204-870-1598.

Sincerely,

Original Signed By
Agnes Wittmann
Director
The Environment Act

Enclosure

c. Robert Boswick
Tyler Kneeshaw

THE ENVIRONMENT ACT
LOI SUR L'ENVIRONNEMENT

Manitoba

LICENCE

File No.: 241.50

Licence No. / Licence n°: 3446
Issue Date / Date de délivrance : August 28, 2025

In accordance with The Environment Act (C.C.S.M. c. E125)/
Conformément à la Loi sur l'environnement (C.P.L.M. c. E125)

Under Sections 11(1) and 14(2) / Conformément au Paragraphe 11(1) et 14(2)

THIS LICENCE IS ISSUED TO: / CETTE LICENCE EST DONNÉÉ À:

RURAL MUNICIPALITY OF GREY; "the licensee"

for land application of biosolids at SE 22-8-7 WPM, SW 23-8-7 WPM, and W ½ SE 23-8-7 WPM, and the alteration and continued operation and maintenance of the development being a wastewater collection system, a forcemain connection, and a 1,200 cubic metres design maximum daily flow rate over any 24-hour period (396 cubic metres per day average) aerated wastewater treatment lagoon consisting of an aerated primary cell and a secondary cell serving the L.U.D. of St. Claude located in NE 15-8-7 WPM in Manitoba and with discharge from the development into municipal and provincial drainage systems that flow into Elm Creek, in accordance with the proposals filed under The Environment Act on September 15, 2021 and October 04, 2021, and additional information submitted on January 24, 2023, May 23, 2023, July 25, 2023, August 15, 2023, April 24, 2025, June 10, 2025, June 20, 2025, and July 15, 2025, and subject to the following specifications, limits, terms and conditions:

DEFINITIONS

In this licence,

"accredited laboratory" means an analytical facility accredited by the Standards Council of Canada (SCC), or accredited by another accrediting agency recognized by Manitoba Environment and Climate Change to be equivalent to the SCC, or be able to demonstrate, upon request, that it has the quality assurance/quality control (QA/QC) procedures in place equivalent to accreditation based on the international standard ISO/IEC 17025, or otherwise approved by the Director;

"aerated" means the bringing about of intimate contact between air and a liquid by bubbling air through the liquid;

"aerated cell" means a cell of a wastewater treatment lagoon system in which mechanical or diffused-air aeration is used to supplement the oxygen supply;

"affected area" means a geographical area, excluding the property of the development;

"approved" means approved by the director or assigned environment officer in writing;

"aquifer" means a water saturated geologic unit that will yield water to wells or springs at a sufficient rate so that the wells or springs can serve as a practical source of water supply;

"ASTM" means the American Society for Testing and Materials;

"base" means the exposed and finished elevation of the bottom of the primary aerated cells;

"bentonite" means specially formulated standard mill grade sodium bentonite conforming to American Petroleum Institute Specification 13-A;

"biosolids" means accumulated organic solids, resulting from wastewater treatment processes, that have received adequate treatment to permit the material to be recycled;

"day" or "daily" means any 24-hour period;

"director" means an employee so designated pursuant to The Environment Act;

"effluent" means wastewater flowing or pumped out of the community;

"environment officer" means an employee so designated pursuant to The Environment Act;

"fecal coliform" means aerobic and facultative, Gram-negative, nonspore-forming, rod-shaped bacteria capable of growth at 44.5°C, and associated with fecal matter of warm-blooded animals;

"final discharge point" means the outlet from the SAGR cells of the development;

"first order waterway" means a drain or watercourse serving a watershed with a drainage area of up to one square mile;

"five-day biochemical oxygen demand (BOD_5)" means that part of the oxygen demand usually associated with biochemical oxidation of organic matter within 5 days at a temperature of 20°C;

"five-day carbonaceous biochemical oxygen demand ($CBOD_5$)" means that part of the oxygen demand usually associated with biochemical oxidation of carbonaceous organic matter within five days at a temperature of 20°C, excluding the oxygen demand usually associated with the biochemical oxidation of nitrogenous organic matter;

"flooding" means the flowing of water onto lands, other than waterways, due to the overtopping of a waterway or waterways;

"fourth order waterway" means a drain or watercourse formed at the point of confluence of at least two third order waterways and may have tributaries of the third order and lower;

"grab sample" means a quantity of wastewater obtained at a given place and time;

"high water mark" means the line on the interior surface of the aerated and storage cells which is normally reached when the cell is at the maximum allowable liquid level or the line of the exterior of the perimeter dykes which is reached during local flooding;

"hydraulic conductivity" means the quantity of water that will flow through a unit cross-sectional area of a porous material per unit of time under a hydraulic gradient of 1.0;

"industrial use agreement" means a signed agreement between an industry and a municipality to discharge industrial wastewater into a specified municipal wastewater collection and treatment system;

"industrial wastewater" means wastewater derived from an industry which manufactures, handles or processes a product and does not include wastewater from commercial and residential buildings;

"influent" means water, wastewater, or other liquid flowing into a wastewater treatment facility;

"in-situ" means on the site;

"low water mark" means the line on the interior surface of the aerated and storage cells which is normally reached when the cell is discharged;

"MPN Index" means the most probable number of coliform organisms in a given volume of wastewater which, in accordance with statistical theory, would yield the observed test result with the greatest frequency;

"noise nuisance" means an unwanted sound, in an affected area, which is annoying, troublesome, or disagreeable to a person:

(a) residing in an affected area;
(b) working in an affected area; or
(c) present at a location in an affected area which is normally open to members of the public;

if the unwanted sound

(d) is the subject of at least 5 written complaints, received by the director in a form satisfactory to the director and within a 90-day period, from 5 different persons falling within clauses (a), (b) or (c), who do not live in the same household; or
(e) is the subject of at least one written complaint, received by the director in a form satisfactory to the director, from a person falling within clauses (a), (b) or (c) and the director is of the opinion that if the unwanted sound had occurred in a more densely populated area there would have been at least 5 written complaints received within a 90-day period, from 5 different persons who do not live in the same household;

"odour nuisance" means a continuous or repeated odour, smell or aroma, in an affected area, which is offensive, obnoxious, troublesome, annoying, unpleasant or disagreeable to a person:

(a) residing in an affected area;
(b) working in an affected area; or
(c) present at a location in an affected area which is normally open to members of the public;

if the odour, smell or aroma

(d) is the subject of at least 5 written complaints, received by the director in a form satisfactory to the director and within a 90-day period, from 5 different persons falling within clauses (a), (b) or (c), who do not live in the same household; or

(e) is the subject of at least one written complaint, received by the director in a form satisfactory to the director, from a person falling within clauses (a), (b) or (c) and the director is of the opinion that if the odour, smell or aroma had occurred in a more densely populated area there would have been at least 5 written complaints received within a 90-day period, from 5 different persons who do not live in the same household;

"operator" means a person certified to operate the development employed by the Licensee to manage the functional day-to-day operation of the development within the constraints of this licence;

"plant-available nitrogen" means nitrogen which is readily available to plants by uptake through the roots and is determined by adding 20 percent of the organic nitrogen (as nitrogen), 100 percent of the ammonia (as nitrogen) and 100 percent of the nitrate (as nitrogen);

"pollutant" means a pollutant as defined in The Environment Act;

"record drawings" means engineering drawings complete with all dimensions which indicate all features of the development as it has actually been built;

"reference material" means soil or biosolids material which is used as a reference;

"reference value" means the value established by the agency that supplied the reference material;

"riprap" means small, broken stones or boulders placed compactly or irregularly on dykes or similar embankments for protection of earth surfaces against wave action or current;

"SAR" means sodium adsorption ratio;

"second order waterway" means a drain or watercourse servicing a watershed with a drainage area greater than one square mile or having a tributary or tributaries which are first order waterways;

"sludge solids" means solids in sludge;

"sludge" means accumulated solid material containing large amounts of entrained water, which has separated from wastewater during processing;

"sodium adsorption ratio" means the dimensionless value where:

$$\text{SAR} = \frac{0.044 \text{ x Sodium concentration}}{\sqrt{(0.025)\,\text{Calcium concentration} + (0.041)\,\text{Magnesium concentration}}};$$

"Standard Methods for the Examination of Water and Wastewater" means the most recent edition of Standard Methods for the Examination of Water and Wastewater published jointly by the American Public Health Association, the American Waterworks Association and the Water Environment Federation;

"third order waterway" means a drain or watercourse formed at the point of confluence of a least two second order waterways and may have tributaries of the second order and lower;

"waste disposal ground" means an area of land designated by a person, municipality, provincial government agency, or crown corporation for the disposal of waste and approved for use in accordance with the Waste Management Regulation, or any future amendments thereto, or a licence pursuant to The Environment Act;

"waste management facility" means a landfill, a composting facility, a transfer station, a material recovery facility or a remote seasonal waste facility;

"wastewater" means the spent or used water of a community or industry which contains dissolved and suspended matter;

"wastewater collection system" means the sewer and pumping system used for the collection and conveyance of domestic, commercial, industrial and process wastewater;

''wastewater treatment lagoon" means the component of the development which consists of impoundments into which wastewater is discharged for treatment and storage; and

"water table" means the upper surface of the zone of saturation of a water bearing geologic unit.

GENERAL TERMS AND CONDITIONS

Retain Copy of Licence

1. The licensee shall at all times maintain a copy of this licence at the development or at the premises from which the development's operations are managed.

Sampling

2. In addition to any of the limits, terms and conditions specified in this licence, the licensee shall, upon the request of the director:
   a) sample, monitor, analyze and/or investigate specific areas of concern regarding any segment, component or aspect of pollutant storage, containment, treatment, handling, disposal or emission systems, for such pollutants or ambient quality, aquatic toxicity, leachate characteristics and discharge or emission rates, for such duration and at such frequencies as may be specified;
   b) determine the environmental impact associated with the release of any pollutant(s) from the development;
   c) conduct specific investigations in response to the data gathered during environmental monitoring programs; or

d) provide the director, within such time as may be specified, with such reports, drawings, specifications, analytical data, descriptions of sampling and analytical procedures being used, bioassay data, flow rate measurements and such other information as may from time to time be requested.

3. The Licensee shall, unless otherwise specified in this licence:
   a) carry out all preservations and analyses on liquid samples in accordance with the methods prescribed in the most current edition of Standard Methods for the Examination of Water and Wastewater or in accordance with equivalent preservation and analytical methodologies approved by the Director;
   b) carry out all sampling of, and preservation and analyses on, soil, compost, and air samples in accordance with methodologies approved by the director;
   c) have all analytical determinations undertaken by an accredited laboratory; and
   d) report the results to the director, in writing and in an electronic format acceptable to the director, within 60 days of the samples being taken.

Reporting Format

4. The licensee shall submit all information required to be provided to the director or environment officer under this licence, in written and electronic format, in such form (including number of copies) and of such content as may be required by the director or environment officer, and each submission shall be clearly labeled with the Licence Number and Client File Number associated with this licence.

Equipment Breakdown

5. The licensee shall, in the case of physical or mechanical equipment breakdown or process upset where such breakdown or process upset results or may result in the release of a pollutant in an amount or concentration, or at a level or rate of release, that causes or may cause a significant adverse effect, immediately report the event by calling the 24-hour environmental accident reporting line at 204-944-4888 (toll-free 1-855-944-4888). The report shall indicate the nature of the event, the time and estimated duration of the event and the reason for the event.

6. The licensee shall, following the reporting of an event pursuant to clause 5
   a) identify the repairs required to the mechanical equipment;
   b) undertake all repairs to minimize unauthorized discharges of a pollutant;
   c) complete the repairs in accordance with any written instructions of the director; and
   d) submit a report to the Director about the causes of breakdown and measures taken, within one week of the repairs being done.

Certification

7. The licensee shall obtain and maintain classification of the development pursuant to Manitoba's Water and Wastewater Facility Operators Regulation or any future amendment thereof and maintain compliance with all requirements of the regulation including, but not limited to, the preparation and maintenance of a Table of Organization, Emergency Response Plan and Standard Operating Procedures.

8. The licensee shall carry out the operation of the development with individuals properly certified to do so pursuant to Manitoba's Water and Wastewater Facility Operators Regulation or any future amendment thereof.

Compliance With Other Acts and Regulations

9. The licensee shall comply with the requirements of the Manitoba Nutrient Management Regulation or any future amendment thereof.

10. The licensee shall comply with the requirements of The Heritage Resources Act and, if heritage resources are encountered during the construction of the development, suspend construction and immediately notify the Historic Resources Branch.

11. The licensee shall obtain all necessary provincial and federal permits and approvals for construction of relevant components of the development prior to commencement of construction.

Industrial Use Agreement(s)

12. The licensee shall, within one year of the date of this licence, establish an industrial use agreement(s) with wet industries that are directing wastewater to this aerated wastewater treatment lagoon and do not currently have an industrial use agreement. Future wet industries may require similar industrial use agreement(s) based on regulatory requirements. Any such agreement(s) shall specify the quality, quantity and timing of discharges into the wastewater collection system.

All Weather Access Road

13. The licensee shall construct and maintain an all-weather access road to the aerated wastewater treatment lagoon.

Future Studies

14. The licensee shall actively participate in any future watershed-based management study, plan, and/or nutrient reduction program, approved by the director, for Elm Creek and/or associated waterways and watersheds.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

Respecting Construction – General

15. The licensee shall notify the assigned environment officer not less than two weeks prior to beginning construction of the development. The notification shall include the intended starting date(s) of construction and the name(s) of the contractor(s) responsible for the construction.

16. The licensee shall:
    a) conduct all ditch related work activities during no flow or dry conditions and not during the April 1 to June 15 fish spawning and incubation period;

b) not construct the development during periods of heavy rain;
c) place and/or isolate all dredged and construction material where it will not erode into any watercourse;
d) implement effective long-term sediment and erosion control measures to prevent soil-laden runoff, and/or silt from entering any watercourse during construction and until vegetation is established;
e) routinely inspect all erosion and sediment control structures and immediately complete any necessary maintenance or repair;
f) revegetate soil exposed during the construction of the development with native or introduced grasses or legumes. Native species shall be used to revegetate areas where native species existed prior to construction; and
g) use rock that is free of silt and clay for riprap.

17. The licensee shall, during construction of the development, operate, maintain and store all materials and equipment in a manner that prevents any deleterious substances (fuel, oil, grease, hydraulic fluids, coolant, paint, uncured concrete and concrete wash water, etc.) from entering the wastewater treatment lagoon, the discharge route and associated watercourses, and have an emergency spill kit for in water use available on site during construction.

18. The licensee shall dispose of non-reusable construction debris from the development at a waste disposal ground operating under the authority of a permit issued pursuant to the Manitoba Waste Management Facilities Regulation, or any future amendment thereof, or a Licence issued pursuant to The Environment Act.

19. The licensee shall locate all fuel storage and equipment servicing areas established for the construction and operation of the development a minimum distance of 100 metres from any waterbody, and shall comply with the requirements of the Manitoba Storage and Handling of Petroleum Products and Allied Products Regulation or any future amendment thereof.

20. The licensee shall not alter local drainage patterns by the construction of the development.

21. The licensee shall, during construction and maintenance of the development, prevent the introduction and spread of foreign aquatic and terrestrial biota by cleaning equipment prior to its delivery to the site of the development in accordance with the requirements of the Manitoba Aquatic Invasive Species Regulation, or any future amendment thereof.

Respecting the Operation of the Development

22. The licensee shall implement a high standard of equipment maintenance and good housekeeping and operational practices with respect to the development, at all times.

Respecting Odour and Noise Nuisances

23. The licensee shall not cause or permit an odour nuisance to be created as a result of the construction, operation or alteration of the development, and shall take such steps as the director may require to eliminate or mitigate an odour nuisance.

24. The licensee shall not cause or permit a noise nuisance to be created as a result of the construction, operation or alteration of the development, and shall take such steps as the director may specify to eliminate or mitigate a noise nuisance.

Respecting Construction – Aerated Wastewater Treatment Lagoon Cells

25. The licensee shall construct and maintain the aerated cells and the storage cell of the aerated wastewater treatment lagoon as indicated on Schedule A to this Licence with continuous liners, including cut-offs, under all interior surfaces of the cells in accordance with the following specifications:
    a) the cut-offs shall be keyed into the underlying clay layer a minimum of 0.6 metre;
    b) the cut-offs shall be filled with a sand-bentonite mixture with a minimum of 3.0 percent bentonite by weight;
    c) prior to placement in the trench constructed for the cut-offs, the sand bentonite shall be thoroughly mixed;
    d) prior to placement of the sand-bentonite mixture in the trench, the trench shall be probed with a rod to check that soil from the trench wall has not fallen into the bottom of the trench;
    e) the cut-offs shall be a minimum of 0.75 metre in thickness having a hydraulic conductivity of 1×10^{-7} centimetres per second or less at all locations;
    f) the cut-offs shall be installed to an elevation of 2.4 metres above the base of the storage cell;
    g) the cut-off shall be installed to an elevation of 3.15 metres above the base of the aeration cells; and
    h) the underlying clay layer shall be continuous layer under the entire storage cell and shall be at least one metre in thickness and have a hydraulic conductivity of 1×10^{-7} centimetres per second or less;

26. The licensee shall construct and maintain the extended soil liners on the top inside slope of the three outside perimeter dykes of the two aeration cells and of the storage cell of the aerated wastewater treatment lagoon as indicated on Schedule A to this Licence in accordance with the following specifications:
    a) the extended soil liners shall be made of clay;
    b) the extended soil liners shall be constructed such that they consistently integrate with the original cut-offs of the aeration cells and the storage cell as identified in clauses 25 f) and g) of this licence;
    c) the extended soil liners on the top inside slopes of the three outside perimeter dykes of the aerated cells as indicated on Schedule A to this Licence shall be installed to an elevation of 3.58 metres above the floor elevation of these cells;
    d) the extended soil liners on the top inside slopes of the three outside perimeter dykes of the storage cell as indicated on Schedule A to this Licence shall be installed to an elevation of 3.70 metres above the floor elevation of this cell;
    e) the extended soil liners shall be constructed such that a continuous soil liner having a hydraulic conductivity of 1×10^{-7} centimetres per second or less at all locations of the integration and up to the storage cell dyke top elevation is established and can be maintained; and
    f) the extended soil liners shall be at least one metre in thickness measured in any direction.

27. The licensee shall install and maintain fences around the aerated wastewater treatment lagoon cells. The fence shall be a minimum of 1.2 metres high and have a locking gate, which shall be locked at all times except to allow access to the aerated wastewater treatment lagoon cells.

Respecting Soil Liner Sampling, Testing and Reporting

28. The licensee shall arrange with the designated environment officer of the approvals branch a mutually acceptable time and date for any required soil sampling between the 15th day of May and the 15th day of October of any year, unless otherwise approved by the environment officer.

29. The licensee shall take and test undisturbed soil samples, in accordance with Schedule D attached to this licence, from the soil liners of the primary aerated cells; the number and location of samples and test methods to be specified by the designated environment officer of the approvals branch up to a maximum of 25 samples.

30. The licensee shall, not less than 2 weeks before the operation of any cell of the wastewater treatment lagoon for which soil sampling has been required, submit for the approval of the environment officer of the approvals branch the results of the tests carried out under clause 29 of this licence.

Respecting Operation

31. The licensee shall operate and maintain the aeration cells and storage cell as shown on Schedule A to this licence in such a manner that:
    a) the organic loading on the aeration cells, in terms of the five-day biochemical oxygen demand, is not in excess of 355 kilograms per day;
    b) a minimum of 2.0 milligrams of dissolved oxygen per litre is detectable at all times in the top 2.5 metres of liquid in the aeration cells as identified in Schedule A to this licence;
    c) the depth of liquid in the aeration cells as identified in Schedule A to this licence, does not exceed 2.58 metres;
    d) the depth of liquid in the storage cell as identified in Schedule A to this licence, does not exceed 2.70 metres; and
    e) a minimum 1.0 metre freeboard is maintained in the aeration cells and storage cell at all times.

Respecting Operation – Effluent Discharge

32. The licensee shall not discharge effluent from the development as indicated on Schedule A to this licence to the discharge route:
    a) where the organic content of the effluent, as indicated by the five day carbonaceous biochemical oxygen demand, is in excess of 25 milligrams per litre;
    b) where the total suspended solids content of the effluent is in excess of 25 milligrams per litre, unless the exceedance is caused by algae;
    c) where the fecal coliform or Escherichia coli content of the effluent, as indicated by the MPN index, is in excess of 200 per l00 millilitres of sample;
    d) where the concentration of the total phosphorus of the effluent is in excess of 1.0 milligram per litre;
    e) where the SAR is greater than 6.0;

f) where the unionized ammonia content of the effluent is in excess of 1.25 mg/L, expressed as nitrogen (N), at 15°C ±1°C; and
g) where the total ammonia content of the effluent expressed as nitrogen (N) in milligrams per litre is in excess of the concentration specified in Schedule B attached to this licence, as determined by the pH of the effluent.

Respecting General Maintenance

33. The licensee shall provide and maintain a grass cover on the dykes of the primary aerated cells of the development and shall regulate the growth of the vegetation so that the height of the vegetation does not exceed 0.3 metres on all dykes.

34. The licensee shall annually remove by mechanical methods all reeds, rushes and trees located above the low water mark in the cells of the primary aerated cells of the development.

35. The licensee shall implement an ongoing program to remove burrowing animals from the site of the development.

Respecting Alterations

36. The licensee shall notify the director and receive approval for any alterations to the development as licensed, prior to proceeding with such alterations.

MONITORING AND REPORTING

Respecting Monitoring, Record Keeping, and Reporting

37. The licensee shall arrange for the taking of samples of effluent at locations that are accessible during all weather conditions and have been approved by the director.

38. The licensee shall maintain effluent flow meters and electronic interface devices in proper working order.

39. The licensee shall take grab samples of effluent from the effluent monitoring station once each month and have them analyzed for:
    a) organic content as indicated by the five-day carbonaceous biochemical oxygen demand ($CBOD_5$) and expressed as milligrams per litre;
    b) fecal coliform or *Escherichia coli* content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample
    c) total phosphorus content expressed as milligrams per litre;
    d) total suspended solids content expressed as milligrams per litre;
    e) SAR;
    f) unionized ammonia expressed as nitrogen (N) as milligrams per litre;
    g) total ammonia expressed as nitrogen (N) as milligrams per litre;
    h) pH; and
    i) temperature.

Respecting Aeration Systems

40. The licensee shall:
    a) inspect the operation of the aeration system of the aerated cells at least once each week;
    b) annually inspect the aeration system of the aerated cell and make any necessary repairs at least once each year;
    c) immediately report to the director any unexpected findings of the assessments completed in accordance with sub-clauses a) and b) that would cause treatment capabilities of the aerated wastewater treatment lagoon to impact their abilities to provide adequate treatment to maintain compliance with the limits of this licence;
    d) maintain records of aeration system inspection dates, observations, maintenance, and repairs completed; and
    e) make the record of aeration system inspection dates, observations, maintenance, and repairs completed available to an environment officer upon request.

Respecting Records Maintenance and Reporting – Aerated Wastewater Treatment Lagoon

41. The licensee shall during each year maintain the following records and retain them for a minimum period of five calendar years:
    a) reports of visual inspections conducted at a minimum of once per month;
    b) wastewater sample dates;
    c) original copies of laboratory analytical results of the sampled wastewater and water;
    d) a summary of laboratory analytical results;
    e) effluent discharge dates;
    f) estimated effluent discharge volumes;
    g) maintenance and repairs; and
    h) a summary of any sanitary sewer overflows.

42. The licensee shall submit an annual report to the environment officer by February 28 of the following year including all records required by clause 41 of this licence.

Respecting Operating Depth and Freeboard Non-Compliance Events

43. The licensee shall immediately notify the director each time the operating depths of either primary aerated cell of the development do not comply with the maximum operating depth and minimum freeboard requirements for those cells as specified in clause 31 e) of this Licence.

44. The licensee shall, if reporting is required pursuant to clause 43 of this licence in two consecutive years:
    a) engage the services of a qualified consultant, acceptable to the Director, to undertake an investigation of the aerated wastewater treatment lagoon and related infrastructure, to determine the ability or inability of the existing system to meet the hydraulic loading capacity of the development. The investigation shall include but not be necessarily limited to:

i) diagnosis of the cause(s) of the recent exceedances of maximum operating depth;
ii) sources of infiltration into the wastewater system including the infrastructure of the development;
iii) current hydraulic loading of the system;
iv) lack of storage capacity due to sludge build-up within existing cells;
v) the organic loading on the aerated cells in terms of the five day biochemical oxygen demand; and
vi) operating procedures;

b) provide to the director, within four months of the notification given pursuant to clause 43 of this licence, an engineering report describing in detail the results and observations concluded by virtue of the investigation; and
c) provide to the director, within four months of the report provided pursuant to sub-clause b) of this section, a remedial action plan in the form of a detailed engineering report describing recommended modifications, repairs or upgrading works to overcome excessive hydraulic loading of the system.

Respecting Initial Characterization

45. The licensee shall, during the first year of operation of the development under this licence, obtain and analyze grab samples of the effluent from the final discharge point of the development and report the results of the analysis in accordance with Schedule C attached to this licence.

Respecting Record Drawings

46. The licensee shall:
    a) prepare "record drawings" for the development and shall label the drawings "Record Drawings"; and
    b) provide to the director, within one year from the date of this Environment Act Licence, two electronic copies of the "record drawings".

BIOSOLIDS IN EXISTING WASTEWATER TREATMENT LAGOON CELLS

Respecting Biosolids Removal and Land Application

47. The licensee shall land apply the biosolids generated from the aerated wastewater treatment lagoon cells located in NE 15-8-7 WPM that operated under Environment Act Licence No. 1666 S3 at SE 22-8-7 WPM, SW 23-8-7 WPM, and W ½ SE 23-8-7 WPM in accordance with the specifications, limits, terms, and conditions prescribed under Schedule E of this Licence.

REVIEW AND REVOCATION

45. Environment Act Licence No. 1666 S3 is hereby rescinded.

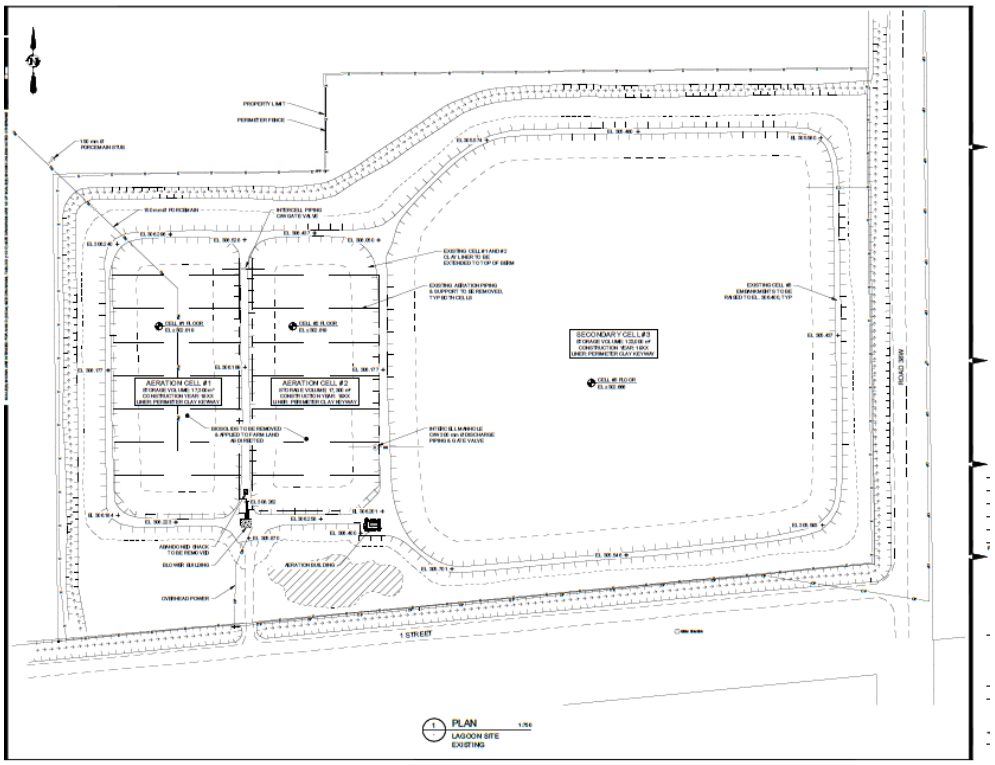
46. If, in the opinion of the director, the licensee has exceeded or is exceeding or has or is failing to meet the specifications, limits, terms, or conditions set out in this licence, the director may, temporarily or permanently, revoke this licence.

47. If, in the opinion of the director, new evidence warrants a change in the specifications, limits, terms or conditions of this licence, the director may require the filing of a new proposal pursuant to Section 11 of The Environment Act.

Original Signed By
Agnes Wittmann
Director
The Environment Act

Schedule A to Environment Act Licence No. 3446

Aerated Lagoon Site Drawing – Within NE 15-8-7 WPM



Biosolids Land Application and Lagoon Sites

Not to Scale

Schedule B to Environment Act Licence No. 3446

Total Ammonia as N Effluent Limits Pursuant to Clause 32 g)

Effluent pH	Total Ammonia as N (mg/L)
6.50	48.83
6.60	46.84
6.70	44.57
6.80	42.00
6.90	39.16
7.00	36.09
7.10	32.86
7.20	29.54
7.30	26.21
7.40	22.97
7.50	19.89
7.60	17.03
7.70	14.44
7.80	12.14
7.90	10.13
8.00	8.41
8.10	6.95
8.20	5.73
8.30	4.71
8.40	3.88
8.50	3.20
8.60	2.65
8.70	2.20
8.80	1.84
8.90	1.56
9.00	1.32

Schedule C to Environment Act Licence No. 3446

Initial Characterization of Wastewater

Facility Size: Small (500 - 2500 m^3/day) with Industrial Influent
Facility Type: Aerated wastewater treatment lagoon – intermittent discharge

Effluent Sampling:

During the first year of operation:

1. a grab sample of the discharging effluent shall be collected near the beginning of the discharge period and near the end of the discharge period (i.e., two samples for each discharge event.)
2. a grab sample of the discharging effluent shall be collected on a quarterly basis for each quarter there was effluent discharged.

Effluent Analysis:

1. Have the discharge period grab samples analyzed for:
   a) the organic content as indicated by the five-day biochemical oxygen demand and expressed as milligrams per litre;
   b) the organic content as indicated by the five-day carbonaceous biochemical oxygen demand and expressed as milligrams per litre;
   c) the total suspended solids content expressed as milligrams per litre;
   d) the Escherichia coli (E. Coli) content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
   e) the fecal coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
   f) the total coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
   g) if chlorine was used as a disinfecting agent, total residual chlorine expressed as milligrams per litre;
   h) total ammonia nitrogen expressed as milligrams per litre;
   i) nitrate-nitrite nitrogen expressed as milligrams per litre;
   j) total kjeldahl nitrogen (TKN) expressed as milligrams per litre;
   k) dissolved phosphorus expressed as milligrams per litre;
   l) total phosphorus expressed as milligrams per litre;
   m) temperature; and
   n) pH.

2. Have the quarterly samples analyzed for:
   a) fluoride
   b) nitrate
   c) nitrate + nitrite
   d) total extractable metals and metal hydrides (full range)
   e) chemical oxygen demand (COD)
   f) organochlorine pesticides
   g) polychlorinated biphenyls (PCBs)
   h) polycyclic aromatic hydrocarbon (PAHs)
   i) cyanide (total)
   j) pH
   k) volatile organic compounds (VOCs)

l) mercury
m) phenolic compounds
n) surfactants
o) acute toxicity; and
p) chronic toxicity.

Effluent Reporting:

1. For each grab sample, report the results to the Director, in writing or in an electronic format acceptable to the Director within 60 days of the sampling date. The report shall include the sampling date, sample temperature, the dates of the effluent discharge, and copies of the laboratory analytical results of the sampled effluent.

Schedule D to Environment Act Licence No. 3446

Liner Sampling and Testing Requirements Pursuant to Clause 29

Soil Sampling:

1. The licensee shall provide a drilling rig, acceptable to the designated Environment Officer, to extract soil samples from the liner which is not placed or found at the surface of the lagoon structure. This includes all wastewater treatment lagoons constructed with clay cutoffs at the interior base of the dyke or with a clay cutoff in the centre of the dyke. The drill rig shall have the capacity to drill to the maximum depth of the clay cutoff plus an additional 2 metres. The drill rig shall be equipped with both standard and hollow stem augers. The minimum hole diameter shall be 5 inches.

2. For lagoon liners placed or found at the surface of the lagoon structure, the licensee shall provide a machine, acceptable to the designated Environment Officer, capable of pressing a sampling tube into the liner in a straight line motion along the centre axis line of the sample tube and without sideways movement.

3. Soil samples shall be collected and shipped in accordance with ASTM Standard D 1587 (Standard Practice for Thin-Walled Tube Sampling of Soils), D 4220 (Standard Practice for Preserving and Transporting Soil Samples) and D 3550 (Standard Practice for Ring-Lines Barrel Sampling of Soils). Thin-walled tubes shall meet the stated requirements including length, inside clearance ratio and corrosion protection. An adequate venting area shall be provided through the sampling head.

1. At the time of sample collection, the designated Environment Officer shall advise the licensee as to the soil testing method that must be used on each sample. The oedometer method may be used for a sample where the Environment Officer determines that the soil sample is taken from an undisturbed clay soil which has not been remoulded and which is homogeneous and unweathered. The triaxial test shall be used for all samples taken from disturbed and remoulded soils or from non homogenous and weathered soils.

5. The licensee shall provide a report on the collection of soil samples to the designated Environment Officer and to the laboratory technician which includes but is not limited to the following: a plot plan indicating all drill holes, onsite visual observations, sample location, depth or elevation of sample, length of advance of the sample tube, length of soil sample contained in the tube after its advancement, the soil test method specified by the Environment Officer for each soil sample and all necessary instructions from the site engineer to the laboratory technician.

6. All drill and sample holes shall be sealed with bentonite pellets after the field drilling and sampling has been completed.

Schedule D to Environment Act Licence No. 3446 (cont'd)

Soil Testing Methods:

1. Triaxial Test Method

    a) The soil samples shall be tested for hydraulic conductivity using ASTM D 5084 (Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter).

    b) Soil specimens shall have a minimum diameter of 70 mm (2.75 inches) and a minimum height of 70 mm (2.75 inches). The soil specimens shall be selected from a section of the soil sample which contains the most porous material based on a visual inspection. The hydraulic gradient shall not exceed 30 during sample preparation and testing. Swelling of the soil specimen should be controlled to adjust for the amount of compaction measured during sample collection and extraction from the tube and the depth or elevation of the sample. The effective stress used during saturation or consolidation of the sample shall not exceed
    40 kPa (5.7 psi) or the specific stress level, that is expected in the field location were the sample was taken, whichever is greater.

    c) The complete laboratory report, as outlined in ASTM D 5084, shall be supplied for each soil sample collected in the field.

2. Oedometer Test Method

    a) The soil samples shall be tested for hydraulic conductivity using ASTM D 2435 (Standard Test Method for One-Dimensional Consolidation Properties of Soils).

    b) Soil specimens shall have a minimum diameter of 50 mm (2 inches) and a minimum height of 20 mm (0.8 inches). The soil specimens shall be selected from a section of the soil sample which contains the most porous material based on a visual inspection. The soil specimen shall be taken from an undisturbed soil sample. The soil specimen shall be completely saturated.

    c) The complete laboratory report, as outlined in ASTM D 2435, shall be supplied for each soil sample collected in the field.

Schedule E to Environment Act Licence No. 3446

Pursuant to Clause 47 of this Licence – Respecting Land Application of Biosolids

Respecting Land Application of Biosolids

1. The licensee shall only apply biosolids onto agricultural land locations as proposed and as shown on Schedule A to this licence or other licensed facilities approved by the director.

2. The licensee shall, during all biosolids land application activities, comply with the requirements of the Manitoba Nutrient Management Regulation or any future amendment thereof.

3. The licensee shall, prior to land application of biosolids, submit a detailed plan for review and approval of the director of the environmental approvals branch. The plan must provide supporting documentation demonstrating that the land application of biosolids materials would be carried out in an environmentally sustainable and agronomically suitable manner.

4. The licensee shall, not less than two weeks prior to land application of biosolids, publish a public notice in the local newspaper(s) to advise local residents of the intended biosolids application sites and submit a copy of the notice to the designated environment officer of the environmental approvals branch.

5. The licensee shall not dispose of biosolids in a manner other than that approved in clause 3 of this schedule.

Respecting Operations – Withdrawal, Handling, and Transportation of Biosolids

6. The licensee shall notify the environment officer not less than ten days prior to the commencement of removal, transportation and land application of biosolids. The notification shall include the intended starting date of the activities, the means by which the biosolids will be land applied, and the name of the contractor responsible for the activities.

7. The licensee shall, during removal, transportation, and application of biosolids to land, operate, maintain and store all materials and equipment in a manner that prevents any deleterious substances (fuel, oil, grease, hydraulic fluids, coolant, paint, uncured concrete and concrete wash water, etc.) from leaving work locations or entering adjacent watercourses.

8. The licensee shall transport biosolids in containers in such a manner to prevent loss of biosolids and associated liquids to the satisfaction of an environment officer.

9. The licensee shall:
   a) only use access roads for hauling biosolids to the land application site(s) that are acceptable to the municipality wherein biosolids application site(s) are located; and

b) upon the completion of the biosolids land application program, restore the condition of the utilized access roads as agreed upon between the licensee and the municipality in advance of the biosolids application program.

Respecting Operations – Land Application of Biosolids

10. The licensee shall:
    a) apply biosolids to the agricultural lands approved in accordance with clause 3 of this schedule by injecting or incorporating biosolids into the soil such that the depth at which the biosolids are introduced is a minimum of 15 centimetres below the soil surface and there is no surface expression;
    b) when incorporation of the biosolids is the application method, complete incorporation of the biosolids within 48 hours of land application; and
    c) complete the application such that it is acceptable to the environment officer.

11. The licensee shall apply biosolids such that the amounts of residual nitrate-nitrogen in the 0-24 inch soil depth and Olsen-P phosphorus in the 0-6 inch soil depth do not exceed the limits of the most limiting Nutrient Management Zone, regardless of size, set forth in the Nutrient Management Regulation under The Water Protection Act or any future amendment thereof.

12. The licensee shall not permit the land application of biosolids:
    a) between November 10th of any year and April 10th of the following year, unless otherwise authorized in writing by the director;
    b) to frozen soil;
    c) less than 75 metres from any occupied residence (other than the residence occupied by the owner of the land on which the biosolids are to be applied);
    d) less than 400 metres from a residential area;
    e) less than 8 metres from a major wetland, bog, marsh or swamp;
    f) less than 15 metres from a first order waterway;
    g) less than 30 metres from a second, third or fourth order waterway and less than 90 metres from any other waterway;
    h) less than 50 metres from any groundwater well; or
    i) on land that is subject to flooding.

13. The licensee shall not apply biosolids on land:
    a) with a depth of clay or clay till of less than 1.5 metres between the soil surface and the water table;
    b) within 100 metres of an identifiable boundary of an aquifer which is exposed to the ground surface; or
    c) where the surface slope of the land is greater than 5 percent.

14. The licensee shall not apply biosolids on land:
    a) where, prior to the application of biosolids, the soil pH is less than 6.0; or
    b) where, prior to the application of biosolids, the concentration of sodium bicarbonate extractable phosphorous, as P, exceeds 60 micrograms per gram in the upper 15 centimetres of the soil.

15. The licensee shall:
    a) at least 30 days prior to the commencement of any application of biosolids to land, produce scaled site plans of each site intended for the application of biosolids, showing all the applicable features and set back boundaries relevant to the surface and sub-surface criteria specified in clauses 12, 13, and 14 of this schedule, and indicating the total remaining eligible area (in hectares) available in each intended biosolids application site; and
    b) employ geographic information system mapping technology or physically mark the determined boundaries of each intended biosolids application site in advance of the application of biosolids, to ensure that the biosolids are applied to the land in conformity with clauses 12, 13, and 14 of this schedule.

16. The licensee shall not allow cattle to pasture on land on which biosolids have been applied, for a period of three years from the date of application of the biosolids.

17. The licensee shall, on all agricultural land onto which biosolids have been applied, plant one of the following crops at the commencement of the next growing season following such application and for a period of three years from the date of application of biosolids:
    a) a cereal crop;
    b) a forage crop;
    c) an oil seed crop;
    d) field peas; or
    e) lentils.

    For application on land not owned by the licensee, this requirement shall be included in any agreement between the licensee and the landowner.

18. The licensee shall apply biosolids onto agricultural land such that the cumulative weight per hectare of each heavy metal in the soil, as calculated by adding the amount of each heavy metal in the biosolids applied to the background level of the same metal, does not exceed the following levels: *

Metal	**Kilogram per Hectare**
Arsenic	21.6
Cadmium	2.5
Chromium (total)	115.2
Copper	113.4
Lead	126
Mercury	11.9
Nickel	90
Zinc	360

***** Calculated values shall be based on a soil bulk density of 1200 kilograms per cubic metre and a soil depth of 15 centimetres. Analysis for heavy metals must be carried out in accordance with this Schedule.

MONITORING AND REPORTING SPECIFICATIONS

19. The licensee shall submit to the director, at least two weeks prior to commencing with the biosolids land application activities, the details of the biosolids sampling and analysis program used to determine if phosphorus-based or nitrogen-based biosolids application limits are most appropriate and for determining field-specific application rates for the lands on which the biosolids are to be applied.

20. The licensee shall submit to the director, not later than on or before the 1st day of December in the year of biosolids land applications, the details of the biosolids sampling and analysis programs used to determine the volumes and solids contents of the biosolids removed on a daily basis and the volume and the solids contents of biosolids applied to each field.

21. The licensee shall conduct a monitoring and analysis program that is acceptable to the director, and in accordance with Appendices 1 and 2 of this schedule to determine:
    a) the composition of the biosolids;
    b) the background levels of selected soil parameters for each parcel of land;
    c) the surface slope of each parcel of land;
    d) the presence of clay or clay till to a depth of 1.5 metres for each parcel of land;
    e) whether metals-based, phosphorus-based, or nitrogen-based application limits are most appropriate for field-specific application rates for the lands on which the biosolids are to be applied; and
    f) the crops grown on land on which biosolids have been applied during the previous 3-year period.

22. The licensee shall, on or before the 15th day of March of the year following completion of biosolids removal and land application from this lagoon and to the satisfaction of the assigned environment officer(s), submit to the director a report, which will include the following:
    a) details of the biosolids land application programs carried out including:
        i) a description of each parcel of land on which biosolids were distributed;
        ii) the background levels of soil parameters as listed in Schedule A of this Licence, for each parcel of land;
        iii) the dry weight of biosolids applied per hectare;
        iv) the weight of each heavy metal, in milligrams per kilogram of soil, added to each parcel of land for the metals listed in Schedule A of this licence; and
        v) the cumulative weight, in kilograms per hectare, of each heavy metal for each parcel of land as calculated by adding the amount of each heavy metal applied to the background level of the same metal;
    b) the amount of nitrogen, phosphorus, and potassium which was added per hectare for each parcel of land;
    c) the results of analysis of the biosolids and soil required by this licence;
    d) a copy of the analytical procedures used and the results of analysis of reference materials in accordance with Schedule “B” of this licence; and
    e) the type of crops grown on land on which biosolids were applied during the previous 3-year period.

23. The licensee shall undertake annual post harvest soil testing of each field for nitrate-N (0 – 24”) and phosphorus using the Olsen-P test (0 – 6”) for 3 years following biosolids application. Additionally, the licensee shall supply information from the producer regarding the amounts of nutrients from other sources (fertilizer, manure, etc.) being added to the field. Such soil test, fertilization, and cropping information shall be submitted to Manitoba Environment and Climate Change on or before the 15th day of March of each year following a year when application of biosolids occurred.

TERMINATION

24. This Schedule shall terminate on the 1st day of December 2028.

Appendix 1 to SCHEDULE E of Environment Act Licence No. 3446

Pursuant to Clauses 21 - 23 of Schedule E outlining the biosolids sampling and analysis requirements.

Biosolids

A representative sample of biosolids shall be collected from each cell from which biosolids will be removed for land application. A representative sample of biosolids from each cell shall be a composite of biosolids samples taken from a minimum of 5 locations distributed over the area of that cell.

1. The sample of biosolids shall be analyzed for the following parameters:*

a.	conductivity	j.	lead
b.	pH	k.	mercury
c.	total solids	l.	nickel
d.	volatile solids	m.	potassium
e.	nitrate nitrogen	n.	cadmium
f.	total Kjeldahl nitrogen	o.	copper
g.	ammonia nitrogen	p.	zinc
h.	organic nitrogen	q.	chromium
i.	total phosphorus	r.	arsenic

* Analysis for heavy metals must be carried out in accordance with Appendix 2 of this schedule.

Soil

1. Composite samples from each field onto which biosolids will be applied shall be taken prior to application of biosolids. Each field of twenty-four hectares or less shall be sampled from a minimum of twelve representative sites or a minimum of one sample site per two hectares for larger fields. Each sample site shall be sampled from 0 to 15 centimetres and from 0 to 60 centimetres. The entire core extracted for each sample shall be collected. All samples from similar depths within a field shall be bulked in one container for thorough mixing prior to analysis yielding two samples per field.

2. Soil samples from 0 centimetres to 15 centimetres shall be analyzed for the following: *

a.	pH	g.	cadmium
b.	potassium	h.	chromium
c.	nickel	i.	copper
d.	mercury	j.	lead
e.	zinc	k.	arsenic
f.	sodium bicarbonate extractable phosphorus, as P		

* Analysis for heavy metals must be carried out in accordance with Appendix 2 of this schedule.

3. Soil samples from 0 to 60 centimetres shall be analyzed for the following:

a.	nitrate nitrogen	b.	total nitrogen

Crops

1. The type of crop grown on lands on which biosolids have been applied during the previous 3-year period shall be listed along with the legal description of the land and the date of application of biosolids.

Appendix 2 to SCHEDULE "E" of Environment Act Licence No. 3446

Pursuant to Clauses 18, 21, and 22 of Schedule E for analysis of metals.

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

1. The laboratory performing these analyses shall:
   a) possess and maintain accreditation with the Canadian Association for Laboratories Accreditation Inc. (CALA);
   b) operate a quality assurance program acceptable to the assigned environment officer;
   c) monitor the accuracy of the biosolids and soil analyses for each set of ten or less samples of biosolids or soil through the use of a suitable reference material acceptable to the assigned environment officer; and
   d) analyze field duplicates of samples based on a frequency of one in each set of ten or less field samples and that the acceptance criteria for duplicate analysis should be within ± 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 reference materials do not meet the following criteria, the soil and/or biosolids samples must be re-analyzed:

- Arsenic	± 35 percent from the reference value
- Cadmium	± 25 percent from the reference value (for values above 1 µg/g)
- Cadmium	± 35 percent from the reference value (for values below 1 µg/g)
- Chromium	± 25 percent from the reference value
- Copper	± 25 percent from the reference value
- Lead	± 25 percent from the reference value
- Mercury	± 35 percent from the reference value
- Nickel	± 25 percent from the reference value
- Zinc	± 25 percent from the reference value