



APPROVAL

PROVINCE OF ALBERTA

ENVIRONMENTAL PROTECTION AND ENHANCEMENT ACT **R.S.A. 2000, c.E-12, as amended.**

APPROVAL NO.: 483548-00-00

APPLICATION NO.: 001-483548

EFFECTIVE DATE: March 6, 2023

EXPIRY DATE: March 1, 2033

APPROVAL HOLDER: CREEKSTONE FARMS LTD.

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.....

ACTIVITY: **Construction, operation and reclamation of the**
.....
Strathmore meat plant
.....

is subject to the attached terms and conditions.

Designated Director under the Act:
Craig Knaus, B.Sc.

Date Signed: March 6, 2023

TERMS AND CONDITIONS ATTACHED TO APPROVAL

PART 1: DEFINITIONS

SECTION 1.1: DEFINITIONS

- 1.1.1 All definitions from the Act and the regulations apply except where expressly defined in this approval.
- 1.1.2 In all PARTS of this approval:
- (a) "Act" means the *Environmental Protection and Enhancement Act*, R.S.A. 2000, c.E-12, as amended;
 - (b) "air effluent stream" means any substance in a gaseous medium released by or from a plant;
 - (c) "animal by-products" means fatty tissues or substances, SRMs, meat and bone meal extracted from animals, beef heads, and backbones;
 - (d) "application" means the written submissions from the approval holder to the Director in respect of application number 001-483548 and any subsequent applications where amendments are issued for this approval;
 - (e) "baseline level" means the data collected within the area proposed for irrigation before irrigation with industrial wastewater is commenced for the first time;
 - (f) "CFIA" means Canadian Food Inspection Agency;
 - (g) "Cistern Water System" a water receptacle for holding potable water from an approved municipal water supply used for human hygiene purposes, human consumption and domestic purposes at the plant site;
 - (h) "container" means any portable device in which a substance is kept, including but not limited to drums, barrels and pails which have a capacity greater than 18 litres;
 - (i) "cultivated" means the land has been cleared, improved, prepared and used for the growth of forage, silage corn, oilseeds, grains, dried legumes, edible crops including, but not limited to, potatoes, carrots and onions, or trees;
 - (j) "day", when referring to sampling, or as otherwise referred to in this approval, means a period of 24 consecutive hours;
 - (k) "decommissioning" means the dismantling and decontamination of a plant undertaken subsequent to the termination or abandonment of any activity or any part of any activity regulated under the Act;

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- (l) “decontamination” means the treatment or removal of substances from the plant and affected lands;
- (m) “Director” means an employee of the Government of Alberta designated as a Director under the Act;
- (n) “dismantling” means the removal of buildings, structures, process and pollution abatement equipment, vessels, storage facilities, material handling facilities, railways, roadways, pipelines and any other installations that are being or have been used or held for or in connection with the plant;
- (o) “domestic wastewater” means wastewater that is the composite of liquid and water-carried wastes associated with the use of water for drinking, cooking, cleaning, washing, hygiene, sanitation or other domestic purposes, together with any infiltration and inflow wastewater, that is released into a wastewater collection system;
- (p) “five (5)-year moving average” means the average of data collected for the year being reported on and the previous four (4) years, not including baseline level;
- (q) “fugitive emissions” means emissions of substances to the atmosphere other than ozone depleting substances, originating from a plant source other than a flue, vent, or stack but does not include sources which may occur due to breaks or ruptures in process equipment;
- (r) “grab”, when referring to a sample, means an individual sample collected in less than 30 minutes and which is representative of the substance sampled;
- (s) “ISO/IEC 17025” means the international standard, developed and published by International Organization for Standardization (ISO), specifying management and technical requirements for laboratories;
- (t) “incompatible waste” means waste materials which could cause dangerous reactions from direct contact with one another;
- (u) “industrial runoff” means precipitation that falls on or traverses the plant developed area;
- (v) “industrial runoff control system” means the parts of the plant that collect, store industrial runoff from the plant;
- (w) “industrial wastewater” means the composite of liquid wastes and water-carried wastes, any portion of which results from any industrial process or any other operations, carried on at the plant;

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- (x) “industrial wastewater control system” means the parts of the plant that collect, store or treat industrial wastewater, including the Wastewater Stabilization Pond;
- (y) “Inedible materials” means a carcass, a part of a carcass or a product derived from a food animal that is not intended, or not permitted under the CFIA Regulations, to be sold or distributed for use as human food, whether or not the material is condemned material;
- (z) “local environmental authority” means the Department of Environment and Protected Areas, in the Province of Alberta, or the agency that has the equivalent responsibilities for any jurisdiction outside the Province in Canada;
- (aa) “month” means calendar month;
- (bb) “parcel of land” means the unit of land that receives or will receive industrial wastewater by irrigation or land application;
- (cc) “plant” means all buildings, structures, process and pollution abatement equipment, vessels, storage facilities, material handling facilities, roadways, railways, pipelines and other installations, and includes the deeded land, located on the Southeast of Section 28, Township 25, Range 25, West of the 4th Meridian, that is being or has been used or held for or in connection with the Strathmore meat plant;
- (dd) “plant developed area” mean the areas of the plant used for the storage, treatment, processing, transport, or handling of raw material, intermediate product, by-product, finished product, process chemicals, or waste material;
- (ee) “Plant Process Water Treatment System” means the water treatment system at the plant approved by the CFIA for the purpose of processing food and sanitization at the plant site;
- (ff) “QA/QC” means quality assurance and quality control;
- (gg) “regulations” means the regulations enacted pursuant to the Act, as amended;
- (hh) “representative grab” means a sample consisting of equal volume portions of water collected from at least four sites between 0.20-0.30 metres below the water surface within selected sites of the pond;

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- (ii) “routine water chemistry parameters” means pH, electrical conductivity, dissolved calcium, dissolved magnesium, dissolved potassium, dissolved sodium, chloride, sulphate, nitrate as nitrogen, nitrite as nitrogen, nitrate nitrogen plus nitrite nitrogen, ammonia nitrogen, dissolved iron and dissolved manganese, and calculated total dissolved solids;
- (jj) “sludge” means the residue, formed during the treatment of the industrial wastewater or domestic wastewater that is removed from the Industrial Wastewater Control System as waste;
- (kk) “soil” means mineral or organic earthen materials that can, have, or are being altered by weathering, biological processes, or human activity;
- (ll) “SRM” means specified risk material as defined in the *Meat Inspection Regulations, 1990*, as amended;
- (mm) “tank” means a stationary device, designed to contain an accumulation of a substance, which is constructed primarily of non-earthen materials that provide structural support including wood, concrete, steel, and plastic;
- (nn) “topsoil” means the uppermost layer of soil and consists of:
 - (i) the A-horizons and all organic horizons as defined in *The Canadian System of Soil Classification* (Third Edition), Agriculture and Agri-Food Canada, Publication 1646, 1998, as amended, and
 - (ii) the soil ordinarily moved during tillage;
- (oo) “upper subsoil” means the layer of soil directly below the topsoil layer that consists of the B-horizons as defined in *The Canadian System of Soil Classification*, (Third Edition), Agriculture and Agri-Food Canada, Publication 1646, 1998, as amended;
- (pp) “Waste and By-products Load Out Area” means the enclosed building and associated loading docks for the storage of trailers specifically built for receiving the plant’s non-edible wastes for daily transfer to other facilities for further processing or disposal;
- (qq) “waste storage area(s)” means the area(s) designated for storage of waste as described in the application;
- (rr) “week” means any consecutive seven (7) day period; and
- (ss) “year” means calendar year, unless otherwise specified.

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PART 2: GENERAL

SECTION 2.1: REPORTING

- 2.1.1 The approval holder shall immediately report to the Director by telephone any contravention of the terms and conditions of this approval at 1-780-422-4505.
- 2.1.2 The approval holder shall submit a written report to the Director within seven (7) days of the reporting pursuant to 2.1.1.
- 2.1.3 The approval holder shall immediately notify the Director in writing if any of the following events occurs:
- (a) the approval holder is served with a petition into bankruptcy;
 - (b) the approval holder files an assignment in bankruptcy or Notice of Intent to make a proposal;
 - (c) a receiver or receiver-manager is appointed;
 - (d) an application for protection from creditors is filed for the benefit of the approval holder under any creditor protection legislation; or
 - (e) any of the assets which are the subject matter of this approval are seized for any reason.
- 2.1.4 If the approval holder monitors for any substances or parameters which are the subject of operational limits as set out in this approval more frequently than is required and uses procedures authorized in this approval, then the approval holder shall provide the results of such monitoring as an addendum to the reports required by this approval.
- 2.1.5 The approval holder shall submit all annual reports required by this approval to be compiled or submitted to the Director on or before March 31 of the year following the year in which the information was collected, unless otherwise specified in this approval.

SECTION 2.2: RECORD KEEPING

- 2.2.1 The approval holder shall:
- (a) record; and
 - (b) retain

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all the following information in respect of any sampling conducted or analyses performed in accordance with this approval for a minimum of ten (10) years, unless otherwise authorized in writing by the Director:

- (i) the place, date and time of sampling,
- (ii) the dates the analyses were performed,
- (iii) the analytical techniques, methods or procedures used in the analyses,
- (iv) the names of the persons who collected and analysed each sample, and
- (v) the results of the analyses.

SECTION 2.3: ANALYTICAL REQUIREMENTS

2.3.1 With respect to any sample required to be taken pursuant to this approval, the approval holder shall ensure that:

- (a) collection;
- (b) preservation;
- (c) storage;
- (d) handling; and
- (e) analysis

shall be conducted in accordance with the following unless otherwise authorized in writing by the Director:

- (i) for industrial wastewater, industrial runoff and groundwater:
 - (A) the *Standard Methods for the Examination of Water and Wastewater*, published jointly by the American Public Health Association, American Water Works Association, and the Water Environment Federation, 2017, as amended;
- (ii) for soil:
 - (A) *Alberta Tier 1 Soil and Groundwater Remediation Guidelines*, Alberta Environment and Parks, January 10, 2019, as amended,

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- (B) the *Soil Monitoring Directive*, Alberta Environment, May 2009, as amended, and
 - (C) the *Soil Quality Criteria Relative to Disturbance and Reclamation*, Alberta Agriculture, March 1987, as amended.
- 2.3.2 The approval holder shall analyse all samples that are required to be obtained by this approval in a laboratory accredited pursuant to ISO/IEC 17025, as amended, for the specific parameter(s) to be analysed, unless otherwise authorized in writing by the Director.
- 2.3.3 The term sample used in 2.3.2 does not include samples directed to continuous monitoring equipment, unless specifically required in writing by the Director.
- 2.3.4 The approval holder shall comply with the terms and conditions of any written authorization issued by the Director under 2.3.2.

SECTION 2.4: OTHER

- 2.4.1 The terms and conditions of this approval are severable. If any term or condition of this approval or the application of any term or condition is held invalid, the application of such term or condition to other circumstances and the remainder of this approval shall not be affected thereby.
- 2.4.2 All tanks shall conform to the *Guidelines for Secondary Containment for Above Ground Storage Tanks*, Alberta Environmental Protection, 1997, as amended, other than sumps or holding tanks in the Waste and By-products Load Out area for shipment, unless otherwise authorized in writing by the Director.

PART 3: CONSTRUCTION

SECTION 3.1: GENERAL

- 3.1.1 If construction of the Strathmore Meat Plant, as described in application 001-483548 has not commenced by February 28, 2024, the approval holder shall apply for an amendment to this approval, unless otherwise authorized in writing by the Director.
- 3.1.2 The approval holder shall notify the Director in writing two (2) weeks prior to commencing operations of the plant.
- 3.1.3 The approval holder shall construct the Strathmore Meat Plant as described in the application and shall include at a minimum all of the following, unless otherwise authorized in writing by the Director:
- (a) an animal receiving and holding barn;

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- (b) an enclosed Waste and By-Products Load Out area;
- (c) a blood sump collection system directed to a blood storage vessel in the waste and by-products load out area for shipment;
- (d) a pre-evisceration floor with a hide pulling station, as described in the application;
- (e) a Carcass Inspection and Trim Station, as described in the application;
- (f) a hot carcass drip cooler(s);
- (g) a Cutting Boning and Packaging floor, as described in the application;
- (h) a finished product cooler and freezer(s);
- (i) a Refrigerated, Shipping and Receiving area;
- (j) a membrane covered Wastewater Stabilization Pond with the following design and specifications:
 - (i) a grease interceptor and a fine solids screening system for the removal of fine solids,
 - (ii) a 60 mil High Density Polyethylene (HDPE) liner over compacted earth base,
 - (iii) a 100 mm wick leak detection drain layer directed to a sump as described in the application in Appendix H, and
 - (iv) a synthetic sealed membrane enclosure cover over the wastewater stabilization pond to control odours, with associated extractor fan(s);
- (k) a water supply pond with the following design and specifications:
 - (i) a 60 mil HDPE liner system over compacted earth base;
- (l) a runoff control system that directs all runoff from the animal receiving dock and holding barn to the Wastewater Control System Pond; and
- (m) a run-on control system to prevent the flow of surface runoff onto the active storage access and parking areas of the site.

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SECTION 3.2: LAND CONSERVATION

3.2.1 The approval holder shall:

(a) salvage; and

(b) conserve

all topsoil for land reclamation.

3.2.2 The approval holder shall:

(a) salvage; and

(b) conserve

all upper subsoil for land reclamation.

3.2.3 The approval holder shall:

(a) conserve; and

(b) stockpile

all topsoil separately from the upper subsoil.

3.2.4 The approval holder shall locate all:

(a) topsoil stockpiles; and

(b) upper subsoil stockpiles

at the plant.

3.2.5 The approval holder shall stockpile all topsoil as follows:

(a) on stable foundations; and

(b) on undisturbed topsoil.

3.2.6 The approval holder shall stockpile all upper subsoil as follows:

(a) on stable foundations; and

(b) on areas where the topsoil has been removed.

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3.2.7 The approval holder shall take all steps necessary to prevent erosion, including but not limited to, all of the following:

- (a) revegetating the stockpiles; and
- (b) any other steps authorized in writing by the Director.

3.2.8 The approval holder shall immediately suspend conservation of:

- (a) topsoil; and
- (b) upper subsoil

when wet or frozen conditions will result in mixing, loss or degradation of topsoil or upper subsoil.

3.2.9 The approval holder shall recommence conservation of:

- (a) topsoil; and
- (b) upper subsoil

only when wet or frozen field conditions in 3.2.8 no longer exist.

PART 4: OPERATIONS, LIMITS, MONITORING AND REPORTING

SECTION 4.1: GENERAL

4.1.1 The approval holder shall sweep and direct all spilled salt from the hide salting area daily to:

- (a) the salt storage system;
- (b) to a solid waste storage bin for disposal; or
- (c) as otherwise authorized in writing by the Director.

4.1.2 The approval holder shall transport all unmarketable inedibles and SRM materials off-site for disposal to a:

- (a) rendering plant; or
- (b) waste management facility, or
- (c) a bio-gas facility

holding a current Act authorization on a daily basis.

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- 4.1.3 The approval holder shall store all paunch manure in a dedicated labelled transport trailer in the waste and by-products load out area.
- 4.1.4 The approval holder shall transport all paunch manure to a compost site holding a current Act authorization on a daily basis.
- 4.1.5 The approval holder shall store all accumulated grease and fine solids extracted from the process wastewater stream in the waste and by-products load out area.
- 4.1.6 The approval holder shall dispose all of the following daily:
- (a) accumulated grease, solids and fines from the wastewater screening process;
 - (b) unmarketable inedibles and SRM materials, including: materials such as skull, brains, eyes, tonsils, and tonsils in addition to other material such as offal and contaminated trim; and
 - (c) condemned carcasses,
- at a:
- (i) rendering plant, or
 - (ii) a waste management facility, or
 - (iii) a bio-gas facility
- that holds a current Act authorization.

SECTION 4.2: AIR

OPERATIONS

- 4.2.1 The approval holder shall not release any air effluent streams to the atmosphere except as authorized by this approval.
- 4.2.2 The approval holder shall only release air effluent streams to the atmosphere from the following sources:
- (a) the wastewater stabilization pond extractor fan exhaust(s);
 - (b) the waste and by-products load out area exhaust vent(s);
 - (c) the natural gas fired water heaters exhaust stack(s);
 - (d) the natural gas fired, building furnaces exhaust stack(s);

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- (e) the space ventilation exhaust stack(s);
 - (f) the space heater exhaust vent(s); and
 - (g) any other source authorized in writing by the Director.
- 4.2.3 The approval holder shall control fugitive emissions and any source not specified in 4.2.2 in accordance with 4.2.4 of this approval, unless otherwise authorized in writing by the Director.
- 4.2.4 With respect to fugitive emissions and any source not specified in 4.2.2, the approval holder shall not release a substance or cause to be released a substance that causes or may cause any of the following:
- (a) impairment, degradation or alteration of the quality of natural resources;
 - (b) material discomfort, harm or adverse effect to the well being or health of a person; or
 - (c) harm to property or to vegetative or animal life.
- 4.2.5 The approval holder shall maintain a negative pressure under the wastewater stabilization pond cover at all times.
- 4.2.6 The approval holder shall not burn any debris by means of an open fire unless authorized in writing by the Director.
- 4.2.7 The approval holder shall dispose all screened materials from the grease interceptor and a fine solids screening system with the inedibles.
- 4.2.8 The approval holder shall handle and store all solid waste inside the Waste and By-products Load Out area.
- 4.2.9 The approval holder shall operate the Waste and By-Products Load Out area such that:
- (a) the room is maintained under a negative pressure at all times when operations are being conducted; and
 - (b) all doors coming in or going out of the room are closed at all times except when required for entering or exiting the room.
- 4.2.10 The approval holder shall report air emissions information to the Director in accordance with the *Air Monitoring Directive*, Alberta Environment and Protected Areas, 2016, as amended, unless otherwise authorized in writing by the Director.

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SECTION 4.3: INDUSTRIAL WASTEWATER AND INDUSTRIAL RUNOFF

OPERATIONS

- 4.3.1 The approval holder shall not release any substances from the plant to the surrounding watershed except as authorized by this approval.
- 4.3.2 The approval holder shall manage:
- (a) industrial wastewater; and
 - (b) industrial runoff
- as described in the application, unless otherwise authorized:
- (i) by this approval, or
 - (ii) in writing by the Director.
- 4.3.3 The approval holder shall direct the following wastewater and industrial runoff streams to the Wastewater Stabilization Pond:
- (a) all industrial wastewater, except brine wastewater;
 - (b) all process wastewater;
 - (c) all floor and equipment wash water;
 - (d) any vessel drains;
 - (e) all treated domestic wastewater, as described in the application;
 - (f) industrial runoff from the following areas:
 - (i) the animal receiving dock; and
 - (g) any other waste stream authorized in writing by the Director.
- 4.3.4 The approval holder shall dispose off all brine wastewater only as follows:
- (a) to an Alberta Energy Regulator approved disposal well;
 - (b) to an approved waste management facility, or
 - (c) as authorized in writing by the Director.

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- 4.3.5 The approval holder shall:
- (a) screen all:
 - (i) floor drains in the production areas including the waste and by-products loadout area, and
 - (ii) industrial process wastewater,prior to release to the Industrial Wastewater Control System.
- 4.3.6 The approval holder shall only release industrial wastewater from the Industrial Wastewater Control System Stabilization Pond as follows:
- (a) by irrigation or application to land in accordance with this approval;
 - (b) to a wastewater treatment plant that holds a current Authorization under the Act; or
 - (c) as authorized in writing by the Director.
- 4.3.7 The approval holder shall direct all industrial runoff from the plant developed area to the plant water supply pond.
- 4.3.8 The approval holder shall only release industrial runoff from the undeveloped portions of the property to the surrounding watershed towards the Southeast of the site, as described in the application.

MAINTENANCE AND INSPECTION PLAN FOR PONDS

- 4.3.9 The approval holder shall:
- (a) keep up-to-date; and
 - (b) implement
- a Maintenance and Inspection Plan for the Pond liners at the plant site, including but not limited to:
- (i) the water supply pond, and
 - (ii) the wastewater stabilization pond,
- to ensure the integrity of the liners for the ponds.
- 4.3.10 The approval holder shall make the Maintenance and Inspection Plan for the Ponds in 4.3.9 available for review by the Director upon request.

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- 4.3.11 The approval holder shall retain all maintenance and inspection records on site for a period of ten (10) years.
- 4.3.12 The approval holder shall make available all maintenance and inspection records in 4.3.11 available to Environment and Protected Areas for inspection upon request.

INDUSTRIAL WASTEWATER IRRIGATION LIMITS

- 4.3.13 Releases from the Industrial Wastewater Control System by irrigation or application to land shall meet the limits for the parameters specified in TABLE 4.3-A.

TABLE 4.3-A: INDUSTRIAL WASTEWATER CONTROL SYSTEM LIMITS FOR RELEASES OF INDUSTRIAL WASTEWATER BY IRRIGATION TO LAND

PARAMETER	PARAMETER OR CONCENTRATION LIMITS
pH	≥ 6.0 and ≤ 9.5 pH units
Electrical Conductivity (EC)	≤ 2.5 dS/m
Sodium Adsorption Ratio (SAR)	≤ 9.0
Fecal coliform counts	≤ 200 / 100 mL

MONITORING AND REPORTING

- 4.3.14 The approval holder shall monitor releases of industrial wastewater by irrigation to land from the Industrial Wastewater Control System as required in TABLE 4.3-B.
- 4.3.15 The approval holder shall report to the Director the results of the Industrial Wastewater Control System monitoring as required in TABLE 4.3-B.

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TABLE 4.3-B: INDUSTRIAL WASTEWATER CONTROL SYSTEM MONITORING AND REPORTING FOR RELEASES OF INDUSTRIAL WASTEWATER BY IRRIGATION TO LAND

MONITORING			REPORTING
Parameter, Test, Event, Study Proposal or Reporting Requirement	Frequency	Sample Type and Location	Annually
Flow (m ³ /d)	Daily during the release of industrial wastewater by irrigation	Volume Estimate	Annual Industrial Wastewater and Industrial Runoff Report
Electrical Conductivity (dS/m)	As authorized by the Director via 4.4.6	As authorized by the Director via 4.4.6	
Sodium Adsorption Ratio (calculated)			
pH			
Sodium (mg/L)			
Calcium (mg/L)			
Magnesium (mg/L)			
Nitrate + Nitrite Nitrogen (mg/L)			
Total Kjeldahl Nitrogen (mg/L)			
Total Phosphorous (mg/L)			
Fecal Coliforms			

4.3.16 The approval holder shall submit the Annual Industrial Wastewater and Industrial Runoff Report to the Director as required in TABLE 4.3-B.

4.3.17 The Annual Industrial Wastewater and Industrial Runoff Report shall include, at a minimum, all of the following information for the previous year:

- (a) a summary of the results of the industrial wastewater monitoring for irrigation collected in accordance with TABLE 4.3-B, tabulated in a Microsoft Excel spread sheet, if irrigation occurs;
- (b) an assessment of the monitoring results for irrigated water relative to the limits in TABLE 4.3-A, if irrigation occurs;

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- (c) a summary assessment of the performance of the Wastewater Stabilization Pond;
- (d) an overview of the operations of the plant;
- (e) a summary and evaluation of management and disposal of the industrial wastewater for the previous year;
- (f) a summary and evaluation of management and disposal of any industrial runoff for the previous year, if disposal is required;
- (g) a summary of contraventions reported pursuant to 2.1.1; and
- (h) any other information as required in writing by the Director.

SECTION 4.4: INDUSTRIAL WASTEWATER IRRIGATION

OPERATIONS

- 4.4.1 The approval holder shall not release industrial wastewater from the Industrial Wastewater Control System by irrigation to any land except as authorized by this approval, or as otherwise authorized in writing by the Director.
- 4.4.2 The approval holder shall only make or permit the release of industrial wastewater from the Industrial Stabilization Pond by irrigation or land application to the following lands:
 - (a) lands included in the program as authorized by the Director pursuant to 4.4.6; and
 - (b) any other lands not included in the program as authorized in writing by the Director pursuant to 4.4.9(c).
- 4.4.3 At least 30 days prior to releasing industrial wastewater from the Industrial Wastewater Stabilization Pond by irrigation for the first time to any land, the approval holder shall submit an Industrial Wastewater Irrigation Program proposal to the Director.
- 4.4.4 The Industrial Wastewater Irrigation Program proposal in 4.4.3 shall include, at a minimum, all of the following information:
 - (a) a map showing the proposed irrigated lands, including:
 - (i) the number of hectares to be irrigated in each parcel of land, and
 - (ii) the legal land description of each parcel of land;

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- (b) proof of the land owner's agreements to:
 - (i) receive industrial wastewater for each parcel of land, and
 - (ii) allow:
 - (A) groundwater monitoring wells in the proposed locations for each parcel of land, and
 - (B) access by the approval holder to the groundwater monitoring wells

for as long as needed for the groundwater monitoring program;
- (c) a land irrigability classification report for each parcel of land, including certification, by a qualified professional, that each parcel of land is irrigable as defined in the *Standards for the Classification of Land for Irrigation in the Province of Alberta*, Alberta Agriculture, Food and Rural Development, Irrigation Council, 2004, as amended;
- (d) evidence that the seasonal high water table is at least 1.0 metre below ground surface for each parcel of land;
- (e) the baseline level of electrical conductivity for each parcel of land;
- (f) the baseline level of sodium adsorption ratio for each parcel of land;
- (g) proposed locations for groundwater monitoring wells for each parcel of land;
- (h) construction and completion details for each groundwater monitoring well;
- (i) a plan to monitor the industrial wastewater to be irrigated that addresses items to be authorized by the Director in Table 4.3-B, including, at a minimum all of the following:
 - (i) monitoring locations,
 - (ii) frequency and timing of monitoring before and during releases for irrigation, and
 - (iii) methodology for obtaining representative samples; and
- (j) any other information as required in writing by the Director.

4.4.5 If any Industrial Wastewater Irrigation Program proposal is found deficient by the Director, the approval holder shall correct all the deficiencies as outlined by the Director by the date specified in the deficiency letter.

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4.4.6 The approval holder shall implement the Industrial Wastewater Irrigation Program as authorized in writing by the Director.

LIMITS

4.4.7 The approval holder shall not release industrial wastewater from the Industrial Wastewater Control System by irrigation to any land if the limits in TABLE 4.3-A are not met, unless otherwise authorized in writing by the Director.

4.4.8 The approval holder shall not release industrial wastewater from the Industrial Wastewater Control System by irrigation to land at a rate that causes or is likely to cause:

- (a) release of industrial wastewater from the parcel of land on which it was applied;
- (b) wastewater constituents to accumulate in soil, subject to 4.4.10 and 4.4.11;
- (c) impairment of the crop production ability of any land; or
- (d) flooding, erosion saturation or runoff.

4.4.9 The approval holder shall not release industrial wastewater from the Industrial Wastewater Stabilization Pond by irrigation to land under any of the following circumstances:

- (a) the wind will cause or is likely to cause industrial wastewater to be released from the parcel of land authorized to receive industrial wastewater by irrigation;
- (b) the land is frozen or snow covered;
- (c) the land is not cultivated, unless otherwise authorized in writing by the Director; or
- (d) during periods of intense or prolonged rainfall.

4.4.10 The approval holder shall not release industrial wastewater from the Industrial Wastewater Control System by irrigation to land if the receiving soil of the land exceeds any of the limits for:

- (a) the parameters and soil depth intervals specified in TABLE 4.4-A; and
- (b) the parameters and soil depth intervals specified in TABLE 4.4-B, subject to 4.4.11.

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4.4.11 In addition to 4.4.10, the approval holder shall not release industrial wastewater from the Wastewater Stabilization Pond by irrigation to land if the receiving soil of the land will, after the industrial wastewater is applied, exceed any of the limits for the parameters and soil depth intervals specified in TABLE 4.4-B.

TABLE 4.4-A: RECEIVING SOIL LIMITS FOR ELECTRICAL CONDUCTIVITY AND SODIUM ADSORPTION RATIO

PARAMETER	SOIL DEPTH INTERVAL	LIMIT Subject to 4.4.12
Electrical conductivity	0-15 cm	≤ 1.0 dS/m above the baseline level
	15-30 cm	≤ 1.0 dS/m above the baseline level
	30-60 cm	≤ 2.0 dS/m above the baseline level
Sodium adsorption ratio	0-15 cm	≤ 3.0 above the baseline level
	15-30 cm	≤ 3.0 above the baseline level
	30-60 cm	≤ 3.0 above the baseline level

4.4.12 For the limits in TABLE 4.4-A, the approval holder may use an alternate method of calculating compliance with the limit by using a five (5)-year moving average of the data that is less than or equal to the sum total of the limit plus the baseline level, if all of the following conditions are met:

- (a) the approval holder supplies sufficient supporting data and rationale for each parcel of land to the Director; and
- (b) the Director provides written authorization accepting the alternate method.

TABLE 4.4-B: RECEIVING SOIL LIMITS FOR PLANT AVAILABLE NITROGEN AND PLANT AVAILABLE PHOSPHORUS

PARAMETER	SOIL DEPTH INTERVAL	LIMIT
Plant available nitrogen	0-15 cm ^A	250 kg/ha for (0-100 cm) sum of plant available nitrogen in all depth intervals
	15-30 cm ^A	
	30-60 cm ^B	
	60-100 cm ^B	
Plant available phosphorus	0-15 cm	150 mg/kg

^A Bulk density of 1.3 g/cm³

^B Bulk density of 1.7 g/cm³

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4.4.13 The approval holder shall not apply:

(a) sludge; or

(b) manure

to lands described in 4.4.2.

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4.4.14 Notwithstanding 2.3.1, the approval holder shall collect:

(a) soil samples from each parcel of land in accordance with the following frequency:

(i) before the first application of industrial wastewater from the Wastewater Stabilization Pond by irrigation to land during the first year, and

(ii) before the first application of industrial wastewater from the Wastewater Stabilization Pond by irrigation to land each year thereafter the soil sampling in 4.4.14 (a)(i); and

(b) groundwater samples from each parcel of land in accordance with the following frequency:

(i) before the first application of industrial wastewater from the Industrial Wastewater Control system by irrigation to land during the first year, and

(ii) annually, between October 1 and November 30, for each year after the sampling in 4.4.14 (b)(i)

unless otherwise authorized in writing by the Director.

4.4.15 Notwithstanding 2.3.1, with respect to any soil samples required to be taken pursuant to 4.4.14 (a), the approval holder shall collect those soil samples as follows:

(a) one (1) soil sampling location shall be used to represent an area of irrigated land no greater than 16 hectares;

(b) for each consecutive soil sampling event required by 4.4.14 (a)(ii), the sampling location described in 4.4.15 (a) shall be:

(i) within ten (10) metres of the initial soil sampling location in 4.4.14 (a)(i), and

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- (ii) from the same landscape as the soil sampling location in 4.4.14 (a)(i);
 - (c) samples from different sampling locations shall not be composited;
 - (d) for electrical conductivity, a soil sample shall be collected at each sampling location from each of the soil depth intervals in accordance with TABLE 4.4-A;
 - (e) for sodium adsorption ratio, a soil sample shall be collected at each sampling location from each of the soil depth intervals in accordance with TABLE 4.4-A;
 - (f) for plant available nitrogen, a soil sample shall be collected at each sampling location from each of the soil depth intervals in accordance with TABLE 4.4-B; and
 - (g) for plant available phosphorus, a soil sample shall be collected at each sampling location from the soil depth interval in accordance with TABLE 4.4-B.
- 4.4.16 Notwithstanding 2.3.1, with respect to any soil samples required pursuant to 4.4.15, the approval holder shall analyze those soil samples as follows:
- (a) electrical conductivity shall be determined on a saturation extract;
 - (b) sodium adsorption ratio shall be determined on a saturation extract;
 - (c) plant available nitrogen shall be determined as the sum of KCl extractable ammonium nitrogen and KCl extractable nitrate nitrogen; and
 - (d) plant available phosphorus shall be determined using the modified Kelowna method as documented in one of the following journals, unless otherwise authorized in writing by the Director:
 - (i) *“Modified Kelowna” test for available phosphorus and potassium in soil*, Ashworth, J. and Mrazek, K., 1995, *Commun. Soil Sci. Plant Anal.* 26: 731-739, or
 - (ii) *Simultaneous extraction of available P and K with a new soil test: A modification of Kelowna Extraction*, Qian, P., Schoenau, J.J. and Karamanos, R.E., 1994, *Commun. Soil Sci. Plant Anal.* 25: 627-635.
- 4.4.17 Notwithstanding 2.3.1, the approval holder shall monitor groundwater pursuant to:
- (a) Condition 4.4.6;
 - (b) Condition 4.4.14 (b); and

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- (c) any changes to the Industrial Wastewater Irrigation Program as authorized in writing by the Director.
- 4.4.18 The approval holder shall record the following information for each groundwater sample:
- (a) a description of purging and sampling procedures;
 - (b) the static elevation above sea level, and depth below ground surface of fluid phases in the groundwater monitoring well prior to purging;
 - (c) the temperature of each sample at the time of sampling;
 - (d) the pH of each sample at the time of sampling;
 - (e) the specific conductance of each sample at the time of sampling; and
 - (f) the date and time of sample collection.
- 4.4.19 Notwithstanding 2.3.1, the approval holder shall analyze any groundwater samples required for monitoring of irrigation for the following parameters:
- (a) routine water chemistry parameters;
 - (b) total kjeldahl nitrogen;
 - (c) total phosphorus; and
 - (d) as otherwise authorized in writing by the Director.
- 4.4.20 The approval holder shall prepare an annual Industrial Wastewater Irrigation Program Report which shall include, at a minimum, all of the following information:
- (a) proof that any release of industrial wastewater from the Industrial Wastewater Control System by irrigation to any parcel of land meets the release limits in TABLE 4.3-A;
 - (b) a map indicating parcels of land where industrial wastewater was applied showing:
 - (i) pivot specification design,
 - (ii) locations of discrete soil samples collected in accordance with 4.4.15 (a) and 4.4.15 (b), and
 - (iii) locations of any monitoring wells in the groundwater monitoring program for irrigated lands;

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- (c) the legal land description for each authorized parcel of land where industrial wastewater was applied, including a table indicating:
 - (i) the type of crop grown on each irrigated parcel of land,
 - (ii) the area of each irrigated parcel of land, and
 - (iii) the total volume of industrial wastewater applied to each parcel of land;
- (d) a description of the methods used to collect and analyze soil samples from each irrigated parcel of land in accordance with 4.4.14, 4.4.15 and 4.4.16;
- (e) the dates that soil samples were collected from each irrigated parcel of land;
- (f) the dates of all industrial wastewater releases from the Industrial Wastewater Control System by irrigation to land;
- (g) a table summarizing soil analytical results for:
 - (i) electrical conductivity, and
 - (ii) sodium adsorption ratiofor all irrigated parcels of land, highlighting results that are greater than:
 - (A) the limits in TABLE 4.4-A, and
 - (B) baseline levels;
- (h) a table summarizing soil analytical results for:
 - (i) plant available nitrogen, and
 - (ii) plant available phosphorusfor all irrigated parcels of land, highlighting results that are greater than the limits in TABLE 4.4-B;
- (i) a table summarizing groundwater analytical results for all parameters analyzed for each parcel of irrigated land, highlighting results that are greater than corresponding concentrations set out in or derived from the following:
 - (i) baseline levels, and:

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(A) *Alberta Tier 1 Soil and Groundwater Remediation Guidelines*, Alberta Environment and Parks, January 2019, as amended, or

(B) *Alberta Tier 2 Soil and Groundwater Remediation Guidelines*, Alberta Environment and Parks, January 2019, as amended, and

- (j) all signed laboratory analytical reports;
- (k) all completed laboratory chain of custody forms;
- (l) all information collected as per 4.4.17 and 4.4.18;
- (m) monitoring well completion details and borehole logs for groundwater monitoring wells;
- (n) a discussion of trends, impacts and recommendations for mitigation, control or change to assure a sustainable irrigation program; and
- (o) any other information as required in writing by the Director.

4.4.21 The approval holder shall submit the annual Industrial Wastewater Irrigation Report to the Director for each year in which:

- (a) irrigation occurs; or
- (b) data for irrigation is collected.

4.4.22 If the annual Industrial Wastewater Irrigation Program Report is found deficient by the Director, the approval holder shall correct all the deficiencies as outlined by the Director by the date specified in the deficiency letter.

NUTRIENT MANAGEMENT PLAN

4.4.23 The approval holder shall submit an annual Nutrient Management Plan to the Director by February 15 each year, when notified in writing by the Director.

4.4.24 The annual Nutrient Management Plan shall include, at a minimum, all of the following information:

- (a) a table estimating the end of season soil nutrient concentrations of:
 - (i) plant available nitrogen, and
 - (ii) plant available phosphorus

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that are predicted to occur as a result of the proposed application of industrial wastewater and other soil inputs for the upcoming year, which shall include, at a minimum, all of the following information for each irrigated parcel of land:

- (A) the legal land description,
 - (B) the type of crop to be grown,
 - (C) the irrigated area,
 - (D) the residual plant available nitrogen and plant available phosphorus concentrations in receiving soil,
 - (E) the volume of industrial wastewater to be applied,
 - (F) the estimated nitrogen and phosphorus concentrations in the industrial wastewater,
 - (G) the nitrogen and phosphorus concentrations to be applied from commercial fertilizers in receiving soil,
 - (H) the calculated cumulative loading of nitrogen and phosphorus to soil,
 - (I) the estimated nitrogen and phosphorus removal from soil due to crop uptake, and
 - (J) the estimated end of season plant available nitrogen and plant available phosphorus concentrations predicted to remain in the soil;
- (b) confirmation that the predicted end of season concentrations of:
- (i) plant available nitrogen, and
 - (ii) plant available phosphorus
- meet the limits in TABLE 4.4-B; and
- (c) any adjustments to the Plan based on the results of groundwater monitoring.

4.4.25 If any annual Nutrient Management Plan is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the date specified in writing by the Director.

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- 4.4.26 The approval holder shall implement the annual Nutrient Management Plan as authorized in writing by the Director.
- 4.4.27 If an authorization or a deficiency letter is not issued by April 1 each year, the approval holder shall implement the annual Nutrient Management Plan in accordance with the plan as set out in the Nutrient Management Plan submitted by the approval holder.

SECTION 4.5: ODOUR MANAGEMENT PLAN

- 4.5.1 Immediately upon receiving a complaint regarding an offensive odour resulting from the plant, the approval holder shall undertake all of the following measures:
- (a) investigate the complaint;
 - (b) minimize or remedy the effects of the offensive odour;
 - (c) monitor, measure, contain, remove, store, destroy or otherwise dispose of the substance or thing causing the offensive odour or lessen or prevent the offensive odour;
 - (d) install, replace or alter any equipment or thing in order to control or eliminate a recurring offensive odour, including:
 - (i) installation of a bio-filtration system, and
 - (ii) in-ground injection land application of wastewater;
 - (e) construct, improve, extend or enlarge a plant, structure or thing if that is necessary to control or eliminate the offensive odour;
 - (f) suspend spray irrigation of wastewater on land surface; and
 - (g) take any other action the Director considers to be necessary in writing.
- 4.5.2 In addition to 2.1.1, immediately upon receiving a complaint regarding an offensive odour resulting from the plant, the approval holder shall report to the Director at 1-780-422-4505.
- 4.5.3 The approval holder shall record and retain all the following information regarding each complaint about offensive odours from the plant for a minimum of ten (10) years:
- (a) the place, date and time of the complaint;
 - (b) the name, and address of the complainant;
 - (c) the nature of the complaint; and

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(d) a description of the measures undertaken by the approval holders pursuant to Condition 4.5.1.

4.5.4 The approval holder shall make the records in condition 4.5.3 available at any time upon request for inspection by the Director.

4.5.5 The approval holder shall apply for an amendment to this approval as per Act in reference to 4.5.1(e) as required.

SECTION 4.6: WASTE MANAGEMENT

OPERATIONS: GENERAL

4.6.1 The approval holder shall dispose of waste generated at the plant only:

- (a) to facilities holding a current Act authorization;
- (b) to facilities approved by a local environmental authority outside of Alberta; or
- (c) as otherwise authorized:
 - (i) by this approval, or
 - (ii) in writing by the Director.

4.6.2 The approval holder shall not:

- (a) release; or
- (b) dispose

of any waste to the surrounding environment, except in accordance with 4.6.1.

4.6.3 The approval holder shall store hazardous waste or hazardous recyclables stored in containers or tanks in accordance with the *Hazardous Waste Storage Guidelines*, June 1988, Alberta Environment, as amended.

4.6.4 The approval holder shall store waste generated at the plant only in the designated waste storage areas, unless otherwise required by this approval.

4.6.5 The approval holder shall:

- (a) provide and maintain an adequate aisle space between containers in the waste storage area to allow:
 - (i) inspection, and

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- (ii) unobstructed movement of personnel, fire protection equipment, spill control equipment and decontamination equipment to any area of the waste storage area; and
 - (b) arrange inspection aisles in the waste storage area such that the identification label on each container is readable.
- 4.6.6 The approval holder shall prevent incompatible waste from direct contact with one another.

MONITORING AND REPORTING

- 4.6.7 Prior to the consignment or storage of any waste generated at the plant, the approval holder shall:
 - (a) identify;
 - (b) characterize; and
 - (c) classifythe waste but not including industrial runoff and air effluent streams, in accordance with the:
 - (i) *Industrial Waste Identification and Management Options*, Alberta Environment, May 1996, as amended, and
 - (ii) *Alberta User Guide for Waste Managers*, Alberta Environment, August 1996, as amended.
- 4.6.8 The approval holder shall measure or, when not practical to measure, estimate the quantity of waste generated at the plant each year.
- 4.6.9 The approval holder shall maintain a monthly inventory of waste stored in the waste storage area.
- 4.6.10 The approval holder shall submit a copy of the monthly inventory required in 4.6.9 when requested by the Director.
- 4.6.11 The approval holder shall compile all the information required by 4.6.8 and 4.6.9 in an Annual Waste Management Summary Report:
 - (a) as indicated in TABLE 4.6-A; and
 - (b) in accordance with the:

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- (i) *Industrial Waste Identification and Management Options*, Alberta Environment, May 1996 as amended, and
- (ii) *Alberta User Guide for Waste Managers*, Alberta Environment, August 1996, as amended.

TABLE 4.6-A: ANNUAL WASTE MANAGEMENT SUMMARY

Waste Name	Uniform Waste Code				Quantity (kg or L)		Stored	Recycled		Disposed	
	WC	PIN	Class	Mgmt.	Hazardous	Non-hazardous	On-site	On-site	Off-site	On-site	Off-site
TOTAL											

4.6.12 The approval holder shall submit the Annual Waste Management Summary Report to the Director.

SECTION 4.7: DOMESTIC WASTEWATER

OPERATIONS

4.7.1 The approval holder shall not release any domestic wastewater to the surrounding watershed except as authorized by this approval.

4.7.2 The approval holder shall direct all domestic wastewater to an advanced bio-filtration treatment system prior to discharge into the Wastewater Stabilization Pond, as described in the application.

4.7.3 The approval holder shall dispose the sludge from the domestic wastewater treatment system to an approved municipal wastewater treatment facility.

SECTION 4.8: WATERWORKS

4.8.1 The approval holder shall not use water from the plant process water treatment system for human hygiene purposes, human consumption or domestic purposes.

4.8.2 The approval holder shall ensure that all outlets of water from the plant process water treatment system shall be labelled as not suitable for human consumption or use.

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- 4.8.3 The approval holder shall provide potable water from an approved municipal water supply via a cistern for hygiene purposes, human consumption and domestic purposes at the plant site.

SECTION 4.9: GROUNDWATER

- 4.9.1 The approval holder shall develop a proposal for a Groundwater Monitoring Program for the plant which shall include, at a minimum, all of the following:
- (a) a hydrogeologic description and interpretation of the plant;
 - (b) a map and description of surface water drainage patterns for the plant;
 - (c) a lithologic description and maps, including cross-sections, of the surficial and the upper bedrock geologic materials at the plant;
 - (d) a site map showing the location and type of current and historical potential sources of groundwater contamination;
 - (e) a cross-section(s) showing depth to water table, patterns of groundwater movement and hydraulic gradients at the plant;
 - (f) the hydraulic conductivity of all surficial and bedrock materials at the plant;
 - (g) a map showing the location of existing and additional proposed groundwater monitoring wells at the plant;
 - (h) a lithologic description of all boreholes drilled at the plant;
 - (i) construction and completion details of existing groundwater monitoring wells;
 - (j) a rationale for proposed groundwater monitoring well locations and proposed completion depths of those wells;
 - (k) a description of groundwater monitoring well development protocols;
 - (l) a list of parameters to be monitored and the monitoring frequency for each groundwater monitoring well or group of groundwater monitoring wells at the plant;
 - (m) a description of the groundwater sampling and analytical QA/QC procedures;
 - (n) details of a groundwater response plan specifying actions to be taken should contaminants be identified through the Groundwater Monitoring Program; and
 - (o) any other information relevant to groundwater quality at the plant.

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- 4.9.2 The approval holder shall submit the proposal for the Groundwater Monitoring Program to the Director on or before June 30, 2023.
- 4.9.3 If the Groundwater Monitoring Program proposal is found deficient by the Director, the approval holder shall correct all deficiencies as outlined in writing by the Director, within the timeline specified in writing by the Director.
- 4.9.4 The approval holder shall implement the Groundwater Monitoring Proposal as authorized in writing by the Director.
- 4.9.5 The approval holder shall:
- (a) protect from damage; and
 - (b) keep locked except when being sampled
- all groundwater monitoring wells unless otherwise authorized in writing by the Director.
- 4.9.6 If a representative groundwater sample cannot be collected because the groundwater monitoring well is damaged or is no longer capable of producing a representative groundwater sample, the approval holder shall:
- (a) clean, repair or replace the groundwater monitoring well; and
 - (b) collect and analyse a representative groundwater sample prior to the next scheduled sampling event
- unless otherwise authorized in writing by the Director.
- 4.9.7 In addition to the sampling information recorded in 2.2.1, the approval holder shall record the following sampling information for all groundwater samples collected:
- (a) a description of purging and sampling procedures;
 - (b) the static elevations above sea level, and depth below ground surface of fluid phases in the groundwater monitoring well prior to purging;
 - (c) the temperature of each sample at the time of sampling;
 - (d) the pH of each sample at the time of sampling; and
 - (e) the specific conductance of each sample at the time of sampling.

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- 4.9.8 The approval holder shall carry out remediation of the groundwater in accordance with the following:
- (a) *Alberta Tier 1 Soil and Groundwater Remediation Guidelines*, Alberta Environment, January 2019, as amended; and
 - (b) *Alberta Tier 2 Soil and Groundwater Remediation Guidelines*, Alberta Environment, January 2019, as amended.
- 4.9.9 The approval holder shall compile a Groundwater Monitoring Report which shall include, at a minimum, all of the following information:
- (a) a completed *Record of Site Condition Form*, Alberta Environment, 2009, as amended;
 - (b) a legal land description of the plant and a map illustrating the plant boundaries;
 - (c) a topographic map of the plant;
 - (d) a description of the industrial activity and processes;
 - (e) a map showing the location of all surface and groundwater users, and, a listing describing surface water and water well use details, within at least a five (5) kilometre radius of the plant;
 - (f) a general hydrogeological characterization of the region within a five (5) kilometre radius of the plant;
 - (g) a detailed hydrogeological characterization of the plant, including an interpretation of groundwater flow patterns;
 - (h) a cross-section(s) (3-dimensional map) showing depth to water table, patterns of groundwater movement and hydraulic gradients at the plant;
 - (i) borehole logs and complete on details for groundwater monitoring wells;
 - (j) a map showing locations of all known buried channels within at least three (3) kilometre of the plant;
 - (k) a map of surface drainage within the plant and surrounding area to include nearby water bodies;
 - (l) a map of groundwater monitoring well locations and a table summarizing the existing groundwater monitoring program for the plant;

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- (m) a summary of any changes to the groundwater monitoring program made since the last groundwater monitoring report;
- (n) analytical data recorded as required in 4.9.2 and 4.9.7(b);
- (o) a summary of fluid elevations recorded as required in 4.9.8(b) and an interpretation of changes in fluid elevations;
- (p) an interpretation of QA/QC program results;
- (q) an interpretation of all the data in this report, including the following:
 - (i) diagrams indicating the location and extent of any contamination,
 - (ii) a description of probable sources of contamination, and
 - (iii) a site map showing the location and type of current and historical potential sources of groundwater contamination;
- (r) a summary and interpretation of the data collected since the groundwater monitoring program began including:
 - (i) control charts which indicate trends in concentrations of parameters, and
 - (ii) the migration of contaminants;
- (s) a description of the following:
 - (i) contaminated groundwater remediation techniques employed,
 - (ii) source elimination measures employed,
 - (iii) risk assessment studies undertaken, and
 - (iv) risk management studies undertaken;
- (t) a proposed sampling schedule for the following year(s);
- (u) a description of any contaminant remediation, risk assessment or risk management action conducted at the plant; and
- (v) recommendations for changes to the groundwater monitoring program to make it more effective.

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- 4.9.10 The approval holder shall submit the Groundwater Monitoring Report to the Director on or before June 30 of every year commencing in the year 2024, unless otherwise authorized in writing by the Director.
- 4.9.11 If the Groundwater Monitoring Report is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director, within the timeline specified in writing by the Director.

SECTION 4.10: SOIL

- 4.10.1 In addition to any other requirements specified in this approval, the approval holder shall conduct all of the following activities related to soil monitoring and soil management required by this approval in accordance with the *Soil Monitoring Directive*, Alberta Environment, 2009, as amended:
- (a) designing and developing proposals for the Soil Monitoring Program;
 - (b) designing and developing proposals for the Soil Management Program;
 - (c) all other actions, including sampling, analysing, and reporting, associated with the Soil Monitoring Program; and
 - (d) all other actions, including sampling, analysing and reporting, associated with the Soil Management Program.

MONITORING AND REPORTING

- 4.10.2 The approval holder shall submit the Soil Monitoring Program proposal to the Director according to the following schedule:
- (a) for the first soil monitoring event on or before July 31, 2025; and
 - (b) for the second soil monitoring event on or before July 31, 2030; or
- unless otherwise authorized in writing by the Director.
- 4.10.3 If any Soil Monitoring Program proposal is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the date specified in writing by the Director.
- 4.10.4 Subject to 4.10.3, the approval holder shall implement the Soil Monitoring Program as authorized in writing by the Director.

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- 4.10.5 If an authorization or a deficiency letter is not issued within 120 days of the applicable date required by 4.10.4, the approval holder shall implement the Soil Monitoring Program:
- (a) in accordance with the program as set out in the proposal submitted by the approval holder; and
 - (b) within 270 days after the applicable date required by 4.9.2.
- 4.10.6 The approval holder shall submit to the Director each Soil Monitoring Program Report obtained from the soil monitoring referred to in 4.10.4 and 4.10.5 according to the following schedule:
- (a) for the first Soil Monitoring Program Report on or before November 30, 2025; and
 - (b) for the second Soil Monitoring Program Report on or before November 30, 2030; or
- unless otherwise authorized in writing by the Director.
- 4.10.7 If any Soil Monitoring Program Report is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the date specified in writing by the Director.

STANDARDS

- 4.10.8 For the purpose of soil monitoring reports, the approval holder shall compare the concentration of substances in soil to the corresponding concentrations set out in or derived from the following:
- (a) *Alberta Tier 1 Soil and Groundwater Remediation Guidelines*, Alberta Environment and Parks, January 2019, as amended; or
 - (b) *Alberta Tier 2 Soil and Groundwater Remediation Guidelines*, Alberta Environment and Parks, January 2019, as amended.

SOIL MANAGEMENT PROGRAM

- 4.10.9 If the Soil Monitoring Program, or any other soil monitoring, reveals that there are substances present in the soil at concentrations greater than any of the applicable concentrations set out in the standards in the *Soil Monitoring Directive*, Alberta Environment, 2009, as amended, the approval holder shall develop a Soil Management Program Proposal.

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- 4.10.10 If a Soil Management Program Proposal is required pursuant to 4.10.9, the approval holder shall submit a Soil Management Program Proposal to the Director according to the following schedule:
 - (a) for Soil Management Program Proposal that is triggered by the findings from the first soil monitoring event on or before the date in 4.10.6(a);
 - (b) for Soil Management Program Proposal that is triggered by the findings from a second soil monitoring event on or before the date in 4.10.6(b); or
 - (c) for any other soil monitoring event not specified in this approval within six (6) months of completion of the soil monitoring event.
- 4.10.11 If any Soil Management Program Proposal is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the date specified in writing by the Director.
- 4.10.12 The approval holder shall implement the Soil Management Program as authorized in writing by the Director.
- 4.10.13 If the approval holder is required to implement a Soil Management Program pursuant to 4.10.12, the approval holder shall submit a written Soil Management Program Report to the Director on or before March 31 of each year following the year in which the information was collected.
- 4.10.14 If any Soil Management Program Report is found deficient by the Director, the approval holder shall correct all deficiencies identified by the Director by the date specified in writing by the Director.

PART 5: DECOMMISSIONING AND LAND RECLAMATION

SECTION 5.1: GENERAL

- 5.1.1 The approval holder shall apply for an amendment to this approval to reclaim the plant by submitting a:
 - (a) Decommissioning Plan; and
 - (b) Land Reclamation Planto the Director.
- 5.1.2 The approval holder shall submit the:
 - (a) Decommissioning Plan; and
 - (b) Land Reclamation Plan

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referred to in 5.1.1 within six (6) months of the plant ceasing operation, except for repairs and maintenance, unless otherwise authorized in writing by the Director.

SECTION 5.2: DECOMMISSIONING

5.2.1 The Decommissioning Plan referred to in 5.1.1 shall include, at a minimum, all of the following:

- (a) a plan for dismantling the plant;
- (b) a comprehensive study to determine the nature, degree and extent of contamination at the plant and affected lands;
- (c) a plan to manage all wastes at the plant;
- (d) evaluation of remediation technologies proposed to be used at the plant and affected lands;
- (e) a plan for decontamination of the plant and affected lands in accordance with the following:
 - (i) for soil or groundwater, *Alberta Tier 1 Soil and Groundwater Remediation Guidelines*, Alberta Environment and Parks, January 2019, as amended,
 - (ii) for soil or groundwater, *Alberta Tier 2 Soil and Groundwater Remediation Guidelines*, Alberta Environment and Parks, January 2019, as amended,
 - (iii) for drinking water, *Canadian Environmental Quality Guidelines*, Canadian Council of Ministers of the Environment, PN 1299, 1999, as amended, and
 - (iv) for surface water, *Environmental Quality Guidelines for Alberta Surface Waters*, Alberta Environment and Parks, March 2018, as amended;
- (f) confirmatory testing to indicate compliance with the remediation objectives;
- (g) a plan for maintaining and operating contaminant monitoring systems;
- (h) a schedule for activities (a) through (g) above; and
- (i) any other information as required in writing by the Director.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

5.2.2 If the Decommissioning Plan is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the date specified in writing by the Director.

SECTION 5.3: LAND RECLAMATION

5.3.1 The Land Reclamation Plan referred to in 5.1.1 shall include, at a minimum, all of the following:

- (a) the final use of the reclaimed area and how equivalent land capability will be achieved;
- (b) removal of infrastructure;
- (c) restoration of drainage;
- (d) soil replacement;
- (e) erosion control;
- (f) revegetation and conditioning of the plant including:
 - (i) species list, seed source and quality, seeding rates and methods,
 - (ii) fertilization rates and methods, and
 - (iii) wildlife habitat plans where applicable;
- (g) reclamation schedule; and
- (h) any other information as required in writing by the Director.

5.3.2 If the Land Reclamation Plan is found deficient by the Director, the approval holder shall correct all deficiencies identified in writing by the Director by the date specified in writing by the Director.

March 6, 2023

DATE

DESIGNATED DIRECTOR UNDER THE ACT
CRAIG KNAUS