



AMENDING APPROVAL

PROVINCE OF ALBERTA

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

APPROVAL NO.: 197502-01-02

APPLICATION NO.: 005-197502

EFFECTIVE DATE: December 3, 2014

EXPIRY DATE: September 1, 2021

APPROVAL HOLDER: Aquatera Utilities Inc.

ACTIVITY: construction, operation and reclamation of a

wastewater system and a co-generation power plant

is amended as per the attached terms and conditions.

Designated Director under the Act: [Signature]
Okey Obiajulu

Date Signed: December 3, 2014

TERMS AND CONDITIONS ATTACHED TO APPROVAL

All the terms and conditions of *Environmental Protection and Enhancement Act* Approval No 197502-01-00 are deleted and replaced by the following.

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 substances in a gaseous medium released by or from a plant;
 - (c) "annual" means any consecutive 12-month period;
 - (d) "APEGA" means Association of Professional Engineers and Geoscientists of Alberta;
 - (e) "application" means the written submissions to the Director in respect of application number 005-197502 and any subsequent applications for amendments of approval number 197502-01-02;
 - (f) "arithmetic mean" means the sum of all the sample analysis results divided by the total number of samples per reporting period;
 - (g) "ATAD" means auto-thermal thermophilic aerobic digestion which is an aerobic sludge digestion process that achieves thermophilic operating temperatures without supplemental heat;

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- (h) "BNR" means biological nutrient removal which is an integrated AS process for removal of nitrogen and phosphorus in wastewater;
- (i) "BOD₅" means the Biochemical Oxygen Demand in milligrams per litre measured at 20°C over a 5 day period;
- (j) "CBOD" means the carbonaceous BOD₅ in milligrams per litre which is measured after the nitrogenous demand has been inhibited with an inhibitory chemical;
- (k) "chemical" means any substance that is added or used as part of the treatment process;
- (l) "cogeneration power plant" means all buildings, structures, process and pollution abatement equipment, vessels, storage facilities, material handling facilities and other installations associated with thermal electrical power generation from landfill gas that is generated by Aquatera's bioreactor landfill cells, and blended with natural gas if required;
- (m) "composite sample" means a refrigerated (approximately 4°C) sample consisting of not less than twenty-four portions of equal volume which are representative of the stream sampled, collected at time intervals proportional to the flow rate of the stream sampled during each time interval, with a minimum of one sample collected every hour over a 24 hour period,
- (n) "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 but less than 210 litres;
- (o) "continuous monitoring" means sampling or flow measurement through equipment that creates an uninterrupted output of the analysis or flow measurement;
- (p) "DAF" means dissolved air flotation;
- (q) "day" means any sampling period of 24 consecutive hours;

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- (r) "Director" means an employee of the Government of Alberta designated as a Director under the Act;
- (s) "electronic reporting" means submitting monitoring results to the Director as required in this approval which will be performed electronically through the secure internet website provided by Alberta Environment and for which Alberta Environment assumes responsibility;
- (t) "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;
- (u) "geometric mean" means the calculated n^{th} root of the product of all the sample analyses within the reporting period, where n equals the total number of samples within the reporting period, as follows;

$$\text{Geometric Mean: } \sqrt[n]{S_1 x S_2 x S_3 x \dots x S_n}$$

where,

n = the total number of samples within the reporting period

S_1 = the 1st sample analysis value

S_n = the n^{th} sample analysis value

- (v) "grab sample" means an individual sample collected in less than 30 minutes and which is representative of the substance sampled;
- (w) "incompatible waste" means waste materials which could cause dangerous reactions from direct contact or with one another;
- (x) "industrial wastewater" means the composite of liquid wastes and water-carried wastes, any portion of which results from any process carried on at the cogeneration power plant;
- (y) "ISO 17025" means the international standard, developed and published by International Organization for Standardization (ISO), specifying management and technical requirements for laboratories;

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- (z) "loading" means the mass of a substance released to the Wapiti River over a specified time period from the approval holder's wastewater system;
- (aa) "local environmental authority" means Environment and Sustainable Resource Development, in the Province of Alberta, or the agency that has the equivalent responsibilities for any jurisdiction outside the Province;
- (bb) "manual stack survey" means a survey conducted in accordance with the *Alberta Stack Sampling Code*, Alberta Environment, 1995, as amended;
- (cc) "month" means calendar month;
- (dd) "PAZA" means Peace Airshed Zone Association;
- (ee) "regulations" means the regulations issued pursuant to the Act and as amended;
- (ff) "TSS" means the total suspended solids or non-filterable residue (NFR) measured in milligrams per litre;
- (gg) "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;
- (hh) "uncommitted hydraulic reserve capacity" means the design capacity of the wastewater treatment plant minus the sum of the peak daily flow and the peak daily flow that would be used by development that is approved but not yet built;
- (ii) "waste storage area" means the area designated for storage of waste as described in the application.
- (jj) "wastewater treatment plant" means the physical components of the wastewater system that are used to treat wastewater including components associated with the management of any wastes generated during treatment and includes the land located within the City of Grande Prairie, including the

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SE ¼ of Section 11, Township 71 as well as the NW ¼ of Section 24, Township 70, all located within Range 6, West of the 6th Meridian, that is being or has been used or held for or in connection with the Grande Prairie treatment plant;

(kk) "week" means any consecutive 7-day period; and

(ll) "year" means calendar year.

PART 2: GENERAL

SECTION 2.1: GENERAL

- 2.1.1 The approval holder shall immediately report by telephone any contravention of the terms and conditions of this approval to the Director at 1-780-422-4505.
- 2.1.2 In addition to reporting pursuant to 2.1.1, the approval holder shall submit, within 7 days from any contravention of the terms and conditions of this approval, a written report to the Director.
- 2.1.3 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.
- 2.1.4 *Environmental Protection and Enhancement Act* Approval No. 197502-00-00 is cancelled.

SECTION 2.2: RECORD KEEPING

- 2.2.1 The approval holder shall record and retain all the following information in respect of any sampling conducted or analyses performed for a minimum of three years:
- (a) the place, date and time of sampling, and the dates the analyses were performed;

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- (b) the analytical techniques, methods or procedures used in the analyses;
- (c) the names of the persons who collected and analyzed each sample; and
- (d) 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;
- (e) analysis; and
- (f) reporting

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

(i) for air:

- (A) the *Alberta Stack Sampling Code*, Alberta Environment, 1995, as amended,

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- (B) the *Methods Manual for Chemical Analysis of Atmospheric Pollutants*, Alberta Environment, 1993, as amended, and
 - (C) the *Air Monitoring Directive*, Alberta Environment, 1989, as amended;
- (ii) for waste:
- (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, 2012, as amended;
 - (B) the *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, USEPA, SW-846, September 1986, as amended;
 - (C) the *Toxicity Characteristic Leaching Procedure (TCLP)* USEPA Regulation 40 CFR261, Appendix II, Method No. 1311, as amended, and/or
 - (D) the *Methods Manual for Chemical Analysis of Water and Wastes*, Alberta Environmental Centre, Vegreville, Alberta, 1996, AECV96-M1, as amended;
- (iii) for wastewater:
- (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, 2012, as amended, and/or
 - (B) the *Methods Manual for Chemical Analysis of Water and Wastes*, Alberta Environmental Centre, Vegreville, Alberta, 1996, AECV96-M1, as amended.

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- 2.3.2 The approval holder shall analyze all samples that are required to be obtained by this approval in a laboratory accredited pursuant to ISO 17025, as amended, for the specific parameter(s) to be analyzed, unless otherwise authorized in writing by the Director.
- 2.3.3 The approval holder shall comply with the terms and conditions of any written authorization issued by the Director under 2.3.1.
- 2.3.4 The term sample used in 2.3.1 does not include samples directed to continuous monitoring equipment, unless specifically required in writing by the Director.

SECTION 2.4: OTHER

- 2.4.1 All tanks shall conform to the *Guidelines for Secondary Containment for Above Ground Tanks*, Alberta Environmental Protection, 1997, as amended, unless otherwise authorized in writing by the Director.
- 2.4.2 All above ground storage tanks containing liquid hydrocarbons or organic compounds shall conform to the *Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Aboveground Storage Tanks*, Canadian Council of Ministers of the Environment, PN 1180, 1995, as amended.

PART 3: CONSTRUCTION AND UPGRADING REQUIREMENTS

SECTION 3.1: CONSTRUCTION AND UPGRADE

GENERAL CONSTRUCTION REQUIREMENT

- 3.1.1 The approval holder shall upgrade the Grande Prairie wastewater treatment plant as required in the approval or as described in the application.
- 3.1.2 Prior to commencement of construction of any of the following:
- (a) expansion of the wastewater treatment plant, as described in the approval;

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- (b) expansion or conversion of existing wastewater treatment processes;
- (c) installation of new wastewater treatment processes;
- (d) expansion or conversion of sludge management systems;
- (e) installation or conversion of odour control systems;
- (f) installation of cogeneration power plant; or
- (g) conversion of the wastewater system to meet LEED Silver criteria

the approval holder shall submit the following to the Director, unless otherwise authorized in writing by the Director:

- (i) an engineering report, using present-worth analysis, that evaluates alternative wastewater treatment facility upgrading, when applicable,
- (ii) reports on all pilot work or research activities performed, as part of the proposed construction,
- (iii) any other technical reports or studies or calculations, specific to any of the proposed construction,
- (iv) a final report providing pre-design, upgrading schedule and construction completion date, when applicable,
- (v) detail upgrading design, plans and specifications for the proposed construction that are stamped and signed by a professional registered with APEGA, and/or
- (vi) a draft outline of any proposed changes to the working copy of the Operations Plan.

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- 3.1.3 The approval holder shall submit the following information to the Director within one hundred and eighty days of completion of construction of each phase:
- (a) as-built drawings;
 - (b) Operating and Maintenance manual;
 - (c) Manufacturer's equipment verification report on each process, when required; and
 - (d) an amendment to the Operations Plan in 4.1.3, when required.

ENVIRONMENTAL PERFORMANCE REVIEW

- 3.1.4 On or before December 31, 2019, the approval holder shall submit an environmental performance review of the wastewater treatment plant within the context of watershed management to the Director, consisting of the following:
- (a) An assessment of the plant's performance compared with the reduction of either E-coli or fecal coliform;
 - (b) An assessment of the impact of E-coli or fecal coliform on the Wapiti River;
 - (c) An implementation plan including a description of technology as well as a time schedule, if the results from sections 3.1.4 (a) and 3.1.4 (b) indicate that a reduction of E-coli or fecal coliforms to Environment and Sustainable Resource Development's standards is required; and
 - (d) Any other information or reporting, as required by the Director in writing.
- 3.1.5 The approval holder shall submit to the Director a copy of the most recent version of the environmental performance review in 3.1.4 with the application when renewing the wastewater approval.

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COGENERATION POWER PLANT

- 3.1.6 The approval holder shall construct the cogeneration power plant, consisting of two 1425 kW electrical generators, as described in the application.
- 3.1.7 The approval holder shall submit a complete amendment application to perform any upgrade, reclamation and decommissioning of the cogeneration power plant that will change any terms or conditions of this approval.
- 3.1.8 The approval holder shall construct the exhaust stacks identified in TABLE 3.1 according to the corresponding minimum height requirements referred to in TABLE 3.1.

TABLE 3.1 STACK HEIGHTS

STACK	MINIMUM HEIGHT ABOVE GRADE (metres)
Two 1425 kW power engine exhaust stacks	14.5

- 3.1.9 The approval holder shall notify the Director in writing before commencing the operation of the cogeneration power plant.
- 3.1.10 The approval holder shall equip with sampling facilities each exhaust stack in TABLE 3.1, prior to commencement of operation.
- 3.1.11 The sampling facilities in 3.1.10 shall, at a minimum, be:
- (a) installed;
 - (b) operated; and

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(c) maintained

to comply with:

- (i) the *Alberta Stack Sampling Code*, Alberta Environment, 1995, as amended, and
- (ii) the *Air Monitoring Directive*, Alberta Environment, 1989, as amended.

PART 4: OPERATIONS

SECTION 4.1 DRAINAGE AND COGENERATION POWER PLANT SYSTEMS

WASTEWATER COLLECTION AND TREATMENT

- 4.1.1 The approval holder shall not release any substances from the wastewater system to the surrounding watershed except as authorized under this approval.
- 4.1.2 The approval holder shall operate a wastewater system which shall include, at a minimum:
 - (a) the wastewater collection and transmission system directly connected to the wastewater treatment plant;
 - (b) pre-treatment and raw wastewater equalization, including all of the following:
 - (i) bar screens and flow equalization pump station,
 - (ii) grit removal,
 - (iii) equalization holding pond, known as the former facultative cell, and

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- (iv) four waste storage cells, known as the former anaerobic lagoon cells;
- (c) an activated sludge wastewater treatment plant, including all of the following:
 - (i) primary clarifier,
 - (ii) a multi-cell BNR activated sludge system,
 - (iii) an RBC system, when in operation,
 - (iv) secondary clarifier,
 - (v) a chemical feed station, as required, and
 - (vi) a tertiary treatment retrofit, according to the application;
- (d) a wastewater storage cell, known as the former lagoon storage cell, that is outfitted with an emergency release weir to Bear Creek;
- (e) a treated wastewater outfall discharging to the Wapiti River located in the NW Section 24, Township 70, Range 6 West of the 6th Meridian;
- (f) sludge treatment, including all of the following:
 - (i) sludge holding tank,
 - (ii) a DAF sludge thickener,
 - (iii) a multi-reactor ATAD process,
 - (iv) sludge de-watering by chemically assisted centrifuges,

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- (v) a chemical feed station, as required, and
- (vi) a multi-cell bio-filter;
- (g) sludge disposal as described in the application, or as otherwise authorized in writing by the Director; and
- (h) a chemical feed station or chemical treatment process to enhance performance of any processes in 4.1.2.

COGENERATION POWER PLANT

- 4.1.3 The approval holder shall operate a cogeneration power plant which shall include all of the following:
- (a) power plant with exhaust stacks.

WASTE MANAGEMENT

- 4.1.4 The approval holder shall dispose of all waste generated at the cogeneration power plant only:
- (a) to facilities holding an authorization under the Act;
 - (b) to facilities approved by a local environmental authority; or
 - (c) as otherwise approved in writing by the Director.
- 4.1.5 The approval holder shall not:
- (a) release; or

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(b) dispose of

any waste to the surrounding environment, except in accordance with 4.1.4.

4.1.6 The approval holder shall not:

(c) receive; or

(d) store

any third party waste at the cogeneration power plant.

4.1.7 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.

4.1.8 The approval holder shall not:

(e) transfer;

(f) treat; or

(g) store

waste or recyclables in an amount or in a manner that will cause or may cause an adverse effect on human health or the surrounding environment.

4.1.9 The approval holder shall not:

(h) treat; or

(i) store

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waste or recyclables at the plant in an amount or in a manner that will cause or may cause:

- (j) fire,
- (k) explosion,
- (l) violent reaction,
- (m) emission of toxic dust, mist, fumes or gases, or
- (n) emission of flammable fumes or gases.

4.1.10 The approval holder shall store waste generated at the cogeneration power plant only in the waste storage area.

4.1.11 The approval holder shall:

- (a) provide and maintain an adequate aisle space between containers in the waste storage area of the cogeneration power plant to allow:
 - (i) inspection, and
 - (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 storage area of the cogeneration power plant such that the identification label on each container is readable.

4.1.12 The approval holder shall prevent direct contact of incompatible waste with one another.

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INDUSTRIAL WASTEWATER

4.1.13 The approval holder shall not release any substances from the cogeneration power plant to the surrounding watershed except as authorized by this approval.

4.1.14 The approval holder shall manage:

(a) industrial wastewater, and

(b) industrial runoff;

as described in the application, unless otherwise authorized in writing by the Director.

OPERATIONS PLAN

4.1.15 The Operations Plan shall include, at a minimum, all of the following information:

(a) organization plan, including roles and responsibilities;

(b) standard operating procedures;

(c) any audits performed;

(d) a plan for managing nitrogen and phosphorus in the treated effluent released to the Wapiti River to meet limits for Phosphorus, Ammonia and Total Nitrogen, according to the approval;

(e) any Wapiti River watershed monitoring and assessment programs, all within the context of the approval holder being a stakeholder in a regional Wapiti River watershed management committee or initiative;

(f) annual total loading objectives for any substance, when required by the Director in writing;

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- (g) a plan for managing air effluent streams, according to this approval;
 - (h) emergency response plan;
 - (i) contravention reporting;
 - (j) special notifications; and
 - (k) all documents, plans, specifications, as-built documents and watershed reports.
- 4.1.16 The approval holder shall revise the Operations Plan as it relates to the cogeneration power plant, and submit a working copy of these revisions to the Director as part of the Annual Wastewater Report in 6.1.5 unless otherwise authorized in writing by the Director.
- 4.1.17 The approval holder shall manage the Operations Plan, as follows:
- (a) retain a copy of the Operations Plan at the wastewater treatment plant;
 - (b) submit changes to the Operations Plan on an annual basis at a minimum;
 - (c) submit an up-to-date Operations Plan when requested in writing by the Director; and
 - (d) correct any deficiencies in the Operations Plan within 120 days, as outlined in writing by the Director.

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SECTION 4.2: CERTIFIED OPERATOR REQUIREMENTS

4.2.1 The day to day operation of the wastewater treatment plant and the wastewater collection system shall be directly supervised by the following number of certified operators who hold the following valid level of certification:

- (a) for the wastewater treatment plant, a minimum of:
 - (i) one (1) Level IV Wastewater Treatment (WWT) Operator; and
 - (ii) two (2) Level III (or higher) WWT Operators; and
 - (iii) one (1) Level II (or higher) WWT Operator in charge of each shift and/or on stand-by; and

- (b) for the wastewater collection system, a minimum of:
 - (i) one (1) Level IV Wastewater Collection (WWC) Operator;
 - (ii) two (2) Level III WWC Operators; and
 - (iii) one (1) Level II WWC Operator.

PART 5: LIMITS

SECTION 5.1: WASTEWATER

5.1.1 Treated wastewater from the wastewater treatment plant shall be discharged as follows:

- (a) continuously to the Wapiti River, or

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- (b) continuously to the wastewater storage cell, and then released from the storage cell to the Wapiti River; or
- (c) as otherwise authorized in writing by the Director.

5.1.2 The approval holder shall ensure the treated wastewater discharge complies with the limits specified in TABLE 5-1.

TABLE 5-1: LIMITS FOR TREATED WASTEWATER

PARAMETERS	EFFECTIVE DATE	DESIGNATED SAMPLING LOCATION	LIMITS
TREATED WASTEWATER			
CBOD	Effective September 13, 2011	Treated wastewater, before release to the Wapiti River	≤ 20 mg/L monthly arithmetic mean of daily samples
TSS			≤ 20 mg/L monthly arithmetic mean of daily samples
Total Phosphorus	Effective December 31, 2016	Treated wastewater, before release to the Wapiti River	< 1.0 mg/L monthly arithmetic mean of daily composite samples
Ammonia-Nitrogen	Effective December 31, 2016	Treated wastewater, before release to the Wapiti River	<p>Technology Based Nitrogen Limits</p> <p>(i) the concentration of the Ammonia Nitrogen (October 1 to June 30), shall be < 10 mg/L monthly arithmetic mean of daily composite samples taken, and</p> <p>(ii) the concentration of the Ammonia Nitrogen (July 1 to September 30), shall be < 5.0 mg/L monthly arithmetic mean of daily composite samples</p>

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PARAMETERS	EFFECTIVE DATE	DESIGNATED SAMPLING LOCATION	LIMITS
Total Nitrogen	When authorized in writing by the Director.	Treated wastewater, before release to the Wapiti River	The concentration of the Total Nitrogen shall be < 15 mg/L calculated as monthly arithmetic mean of calculated weekly concentration.

SECTION 5.2: AIR EFFLUENT STREAMS

5.2.1 The approval holder shall not release any air effluent streams to the atmosphere except as authorized by this approval.

5.2.2 The approval holder shall only release air effluent streams to the atmosphere from the following sources:

- (a) two 1425 kW power engine exhaust stacks as identified in the application;
- (b) the diesel emergency exhaust stacks;
- (c) the Administration Building Boiler 1;
- (d) the Administration Building Boiler 2;
- (e) the ATAD Building Boiler;
- (f) the Process Building Domestic Hot Water Heater;
- (g) the Process Building Make-up Air Unit;
- (h) the space ventilation exhaust stacks;

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- (i) the space heater exhaust vents; and
- (j) any other source authorized in writing by the Director.

5.2.3 The approval holder shall operate and maintain the exhaust stacks according to the minimum height requirements specified in TABLE 5.2-A.

TABLE 5.2-A STACK HEIGHTS

STACK	MINIMUM HEIGHT ABOVE GRADE (metres)
Two 1425 kW power engine exhaust stacks	14.5

5.2.4 The approval holder shall control fugitive emissions and any source not specified in 5.2.2 in accordance with 5.2.5 of this approval unless otherwise authorized in writing by the Director.

5.2.5 With respect to fugitive emissions and any source not specified in 5.2.2, 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, plant or animal life.

AIR LIMITS

5.2.6 The approval holder shall ensure that the release of the substances in TABLE 5.2-B to the atmosphere shall not exceed the limits specified in TABLE 5.2-B.

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TABLE 5.2-B EMISSION LIMITS

PLANT UNIT	EMISSION SOURCE	SUBSTANCE	LIMIT
Each of two 1425 kW power engine units	Engine Exhaust Stack	Nitrogen Oxides (expressed as NO ₂)	3.1 kg/hr per engine exhaust stack

5.2.7 The approval holder shall add natural gas, if required, to the landfill gas supplied to the electrical generators such that the net or lower heating value of the combined gas stream is not less than 16.2 MJ/m³ (at 101.325 kPa and 15°C).

PART 6: MONITORING AND REPORTING

SECTION 6.1: WASTEWATER

6.1.1 The approval holder shall monitor the wastewater system as required in TABLE 6-1.

TABLE 6-1: MONITORING – WASTEWATER SYSTEM

PARAMETER	FREQUENCY (Minimum)	SAMPLE TYPE	SAMPLING LOCATION
UNTREATED WASTEWATER			
BOD ₅	Once a day	Composite	Untreated wastewater prior to primary clarifier
TSS	Once a day	Composite	
Total Phosphorus	Once a day	Composite	
Ammonia-Nitrogen	Once a day	Composite	
Nitrate-Nitrogen + Nitrite-Nitrogen	Once a day	Composite	

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PARAMETER	FREQUENCY (Minimum)	SAMPLE TYPE	SAMPLING LOCATION
Total Kjeldahl Nitrogen (TKN)	Once a day	Composite	Untreated wastewater prior to primary clarifier
Total Nitrogen	Once a day	Calculated	
Volume of Flow	Continuous, recorded daily	Calculated	Untreated Wastewater entering the wastewater treatment plant
TREATED WASTEWATER (Mechanical Treatment Plant)			
CBOD	Each parameter, once a day/	Composite	Treated wastewater, before release to the Wapiti River
TSS			
Total Phosphorus			
Ammonia-Nitrogen			
Nitrate-Nitrogen + Nitrite-Nitrogen			
Total Kjeldahl Nitrogen (TKN)			
Total Nitrogen			
Volume	Continuous, daily	Calculated	
Total Coliform Counts	Once a week	Grab	Treated wastewater, before release to the Wapiti River
<i>E-coli.</i> or Faecal Coliform Counts	Once a week	Grab	

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PARAMETER	FREQUENCY (Minimum)	SAMPLE TYPE	SAMPLING LOCATION
Aluminum Antimony Arsenic Barium Beryllium Boron Cadmium Calcium Chromium Chromium (hexa-valent) Cobalt Copper Iron Lead Lithium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Strontium Thallium Tin Titanium Uranium Vanadium Zinc	Four annual samples taken, as follows: (a) one between January 1 and March 30, (b) one between April 1 and June 30, (c) one between July 1 and September 30, and (d) one between October 1 and December 31.	Grab	Treated wastewater, before release to the Wapiti River

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PARAMETER	FREQUENCY (Minimum)	SAMPLE TYPE	SAMPLING LOCATION
Specific Conductivity			
Alkalinity			
Hardness			
Total Dissolved Solids (TDS)			
Chloride			
Cyanides			
Sulphate	Four annual samples taken, as follows:		
Chemical Oxygen Demand (COD)	(a) one between January 1 and March 30,		
Phenols			
Bicarbonate			
pH	(b) one between April 1 and June 30,	Composite	Treated wastewater, before release to the Wapiti River
Temperature			
Fecal coliforms or E.coli	(c) one between July 1 and September 30, and		
Nitrate plus Nitrite as Nitrogen	(d) one between October 1 and December 31.		
Total Kjeldahl Nitrogen (TKN)			
Dissolved Phosphorus			
Total Phosphorus			
Dissolved Inorganic Carbon (DIC)			
Dissolved Organic Carbon (DOC)			

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PARAMETER	FREQUENCY (Minimum)	SAMPLE TYPE	SAMPLING LOCATION
<i>UNAUTHORIZED RELEASES</i>			
Release Volume	Total Volume	Estimated	Wastewater bypassing the wastewater treatment plant, accidental spills or overflows
Release Volume	Total Volume	Estimated	Wastewater bypassing the lift station(s), accidental spills or overflows
Release Volume	Total Volume	Estimated	Wastewater bypasses, accidental spills or overflows from the wastewater collection system
BOD ₅	During the unauthorized discharge	Grab	At the release point
TSS			
Phosphorus			
Ammonia-Nitrogen			
SLUDGE DISPOSAL			
Sludge Volume	Total Volume	Estimated	Amount of sludge being trucked to a landfill holding an authorization under the Act

6.1.2 The approval holder shall compile a Monthly Wastewater Report which includes, at a minimum, the following information:

- (a) the results of the monitoring requirements of TABLE 6-1;
- (b) the name of the supervising operator responsible for the operation of the wastewater system; and
- (c) a summary of any operational problems.

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- 6.1.3 On or before the end of the month following the month in which the information on which the report is based was collected, the approval holder shall:
- (a) submit one copy of the Monthly Wastewater Report to the Director.
- 6.1.4 The approval holder shall compile an Annual Wastewater Report which shall include the following:
- (a) the monthly arithmetic mean, including maximum and minimum values, of each parameter monitored, excluding coliform counts, as outlined in TABLE 6-1;
 - (b) the monthly geometric mean of either faecal coliform counts and/or E-coli counts;
 - (c) the name of the supervising operator responsible for the operation of the wastewater system;
 - (d) a summary of any incidents which required reporting in accordance with 2.1.1;
 - (e) a calculation of the uncommitted hydraulic reserve capacity for the wastewater treatment plant;
 - (f) a summary of any operational problems; and
- 6.1.5 The approval holder shall submit one copy of the Annual Wastewater Report to the Director on or before February 28 of the year following the year in which the information on which the report is based was collected.
- 6.1.6 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 using procedures authorized in this approval, then the approval holder shall provide the results of such monitoring as an addendum to the Annual Wastewater report required by this approval.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

SECTION 6.2: AIR EFFLUENT STREAMS

- 6.2.1 The approval holder shall monitor the air effluent streams as required in TABLE 6-2.
- 6.2.2 The approval holder shall report to the Director the results of the air emission source monitoring as required in TABLE 6-2.

TABLE 6.2 MONITORING AND REPORTING – AIR EFFLUENT STREAMS

EMISSION SOURCE	PARAMETER	FREQUENCY	METHOD of MONITORING and ANALYSIS	REPORTING FREQUENCY	REPORT to
Each of two 1425 kW power engine units	Nitrogen Oxides (expressed as NO ₂)	Within 6 months of initial Start-up and	Manual Stack Survey, as per the Alberta Stack Sampling Code	On or before the end of the month following the month the survey is performed	Director
	Carbon Monoxide	annually after the first monitoring			

- 6.2.3 The approval holder shall compile an Air Emission Report which includes, at a minimum, the following information:
 - (a) the results of the monitoring requirements of TABLE 6.2;
 - (b) the name of the supervising operator responsible for the operation of cogeneration power plant; and
 - (c) a summary of any operational problems.
- 6.2.4 The approval holder shall submit the Air Emission Report by the end of the month following the month the survey is performed, unless otherwise authorized by the Director in writing.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

- 6.2.5 The information required in 6.2.1 and 6.2.2, shall at a minimum, comply with:
- (a) the *Alberta Stack Sampling Code*, Alberta Environment, 1995 as amended; and
 - (b) the *Air Monitoring Directive – AMD 1989*, Environmental Protection Services, Standards and Approvals Division, June 26, 1989.
- 6.2.6 The approval holder shall notify the Director in writing a minimum of two weeks prior to any manual stack survey that is required to be conducted by this approval.

AMBIENT MONITORING

- 6.2.7 The approval holder shall operate or cause to be operated the PAZA Air Quality Monitoring Program Network.
- 6.2.8 The approval holder shall submit or cause to be submitted monthly reports, which document the monitoring undertaken in 6.2.7 to the Director by the end of the month following the month within 45 days from the end of each measured month.
- 6.2.9 The approval holder shall immediately apply to the Director to amend the ambient air monitoring and reporting requirements upon the occurrence of any of the following events:
- (a) the approval holder ceases to actively participate in the PAZA Air Quality Monitoring Program Network;
 - (b) the PAZA Air Quality Monitoring Program Network ceases to operate; or
 - (c) the PAZA Air Quality Monitoring Program Network being amended without written acceptance from the Director.
- 6.2.10 The approval holder shall compile an Annual Air Emissions report which contains information related to the operation of the cogeneration power plant, performance of air pollution control equipment and air contaminant emissions.

TERMS AND CONDITIONS ATTACHED TO APPROVAL

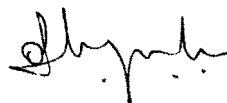
- 6.2.11 The approval holder shall submit one copy of the Annual Air Emissions report in 6.2.10 on or before February 28 of the year following the year in which the information on which the report is based was collected.

PART 7: RECLAMATION AND DECOMMISSIONING

SECTION 7.1: GENERAL

- 7.1.1 Within six months of the wastewater treatment plant permanently ceasing operation, the approval holder shall:
- (a) submit a decommissioning and land reclamation plan to the Director, and
 - (b) not commence reclamation or decommissioning until the approval holder has received written authorization from the Director.
- 7.1.2 Within six months of the cogeneration power plant permanently ceasing operation, the approval holder shall:
- (a) submit a decommissioning and land reclamation plan to the Director, and
 - (b) not commence reclamation or decommissioning until the approval holder has received written authorization from the Director.
- 7.1.3 Within six months of completion of reclamation or decommissioning of cogeneration power plant, the approval shall submit to the Director an amendment application according to 3.1.7.

DATED December 3, 2014



DESIGNATED DIRECTOR UNDER THE ACT
Okey Obiajulu