STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706 • (208) 373-0502

C.L. "Butch" Otter, Governor
Toni Hardesty, Director

March 7, 2012

Jeremy Grimm, Planning and Community Development Director
City of Sandpoint Wastewater Treatment Plant
1123 Lake Street
Sandpoint, Idaho 83864

RE: Facility ID No. 017-00061, Sandpoint Wastewater Treatment Plant (WWTP), Sandpoint
Final Permit Letter

Dear Mr. Grimm:

The Department of Environmental Quality (DEQ) is issuing Permit to Construct (PTC) No. P-2011.0134 Project 60949 to the City of Sandpoint WWTP located in Sandpoint for the installation of an IC Engine. This PTC is issued in accordance with IDAPA 58.01.01.200 through 228 (Rules for the Control of Air Pollution in Idaho) and is based on the certified information provided in your PTC application received November 8, 2011.

This permit is effective immediately. This permit does not release the City of Sandpoint WWTP from compliance with all other applicable federal, state, or local laws, regulations, permits, or ordinances.

Pursuant to the Construction and Operation Notification General Provision of your permit, it is required that construction and operation notification be provided. Please provide this information as listed to DEQ's Coeur d'Alene Regional Office, 2110 Ironwood Parkway, Coeur d'Alene, Idaho 83814, Fax (208) 769-1404.

In order to fully understand the compliance requirements of this permit, DEQ highly recommends that you schedule a meeting with Almer Casile, Air Quality Analyst, at (208) 469-1422 to review and discuss the terms and conditions of this permit. Should you choose to schedule this meeting, DEQ recommends that the following representatives attend the meeting: your facility's plant manager, responsible official, environmental contact, and any other staff responsible for day-to-day compliance with permit conditions.

Pursuant to IDAPA 58.01.23, you, as well as any other entity, may have the right to appeal this final agency action within 35 days of the date of this decision. However, prior to filing a petition for a contested case, I encourage you to contact Eric Clark at (208) 373-0502 or Eric.Clark@deq.idaho.gov to address any questions or concerns you may have with the enclosed permit.

Sincerely,

Mike Simon
Stationary Source Program Manager
Air Quality Division

MS\EC

Permit No. P-2011.0134 PROJ 60949

Air Quality

PERMIT TO CONSTRUCT

Permittee	**City of Sandpoint Wastewater Treatment Plant**
Permit Number	**P-2011.0134**
Project ID	**60949**
Facility ID	**017-00061**
Facility Location	**1123 Lake Street, Sandpoint, Idaho, 83864**

Permit Authority

This permit (a) is issued according to the Rules for the Control of Air Pollution in Idaho, IDAPA 58.01.01.200 through 228; (b) pertains only to emissions of air contaminants regulated by the state of Idaho and to the sources specifically allowed to be constructed or modified by this permit; and (c) has been granted on the basis of design information presented with its application. Changes in design, equipment or operations may be considered a modification.

This permit (a) does not affect the title of the premises upon which the equipment is to be located; (b) does not release the permittee from any liability for any loss due to damage to person or property caused by, resulting from, or arising out of the design, installation, maintenance, or operation of the proposed equipment; (c) does not release the permittee from compliance with other applicable federal, state, tribal, or local laws, regulations, or ordinances; (d) in no manner implies or suggests that the Department of Environmental Quality (DEQ) or its officers, agents, or employees, assume any liability, directly or indirectly, for any loss due to damage to person or property caused by, resulting from, or arising out of design, installation, maintenance, or operation of the proposed equipment.

Date Issued **March 7, 2012**

Eric Clark, Permit Writer

Mike Simon, Stationary Source Manager

PERMIT TO CONSTRUCT SCOPE

Purpose

1. This is the initial permit to construct for the installation of an internal combustion engine. This engine will be used in place of the flare located at the WWTP.

2. The emission sources regulated by this permit are listed in the following table.

Table 1 REGULATED SOURCES

Source Descriptions	Control Equipment
Internal Combustion Engine	Iron Sponge

INTERNAL COMBUSTION ENGINE

Process Description

3. Process Description

The City of Sandpoint operates a wastewater treatment plant to manage and treat municipal wastewater for the city. Methane biogas is produced as a natural part of the anaerobic digestion process of the plant. Biogas is currently combusted through a rudimentary candlestick flare, as it has been for the entire 50+ year life of the plant. The biogas has a composition of 55 to 60 percent methane (CH_4), 40 to 45 percent carbon dioxide (CO_2) and less than 1 percent hydrogen sulfide (H_2S). The biogas generated from the anaerobic digesters is collected and piped to the candlestick flare where it is mixed with atmospheric oxygen and combusted. Prior to the flare, the biogas will be diverted to an iron sponge comprised of media (wood shaving impregnated with iron oxide) to remove H_2S and then directed to the proposed IC engine. During cold months, the heat from the engine is required to provide process heat to the digesters which are required to maintain warm temperatures to facilitate proper wastewater disposal.

4. Emission Controls Description

Table 2 INTERNAL COMBUSTION ENGINE DESCRIPTION

Emissions Units / Processes	Emission Control Devices	Emission Points
IC Engine	Iron Sponge	Engine Stack

Emission Limits

5. Engine Emission Limits

The permittee shall not discharge PM to the atmosphere from any fuel-burning equipment source in excess of 0.015 gr/dscf of effluent gas corrected to 3% oxygen by volume for liquid as required in IDAPA 58.01.01.677.

6. Opacity Limit

Emissions from the engine stack, or any other stack, vent, or functionally equivalent opening associated with the engine, shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required by IDAPA 58.01.01.625. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625.

7. NSPS 40 CFR 60, Subpart JJJJ – Emission Standards

In accordance with 40 CFR 60.4233(d), the engine is required to comply with all emission standards defined for field testing in 40 CFR 1048.101(c) or may elect to comply with Table 1 of Subpart JJJJ standards if the engine is certified and manufactured prior to January 1, 2011. The standards are stated in the following tables:

Table 3 ENGINE EMISSION JJJJ TABLE 1 STANDARDS

Engine Fuel	Maximum Engine bhp	Manufacture Date	Emission Standards					
			g/hp-hr			ppmvd @ 15% O_2		
			NO_x	CO	VOC	NO_x	CO	VOC
Landfill/Digester Gas	< 500	1/1/2011	2.0	5.0	1.0	150	610	80

Table 4 ENGINE EMISSION FIELD TESTING STANDARDS

Pollutant	Emission Standards g/kW-hr
$HC+NO_x$	3.8
CO	6.5

Odors

8. Odors

In accordance with IDAPA 58.01.01.776.01, the permittee shall not allow, suffer, cause, or permit the emission of odorous gases, liquids, or solids into the atmosphere in such quantities as to cause air pollution.

9. Odor Complaints

The permittee shall maintain records of all odor complaints received. The permittee shall take appropriate corrective action as expeditiously as practicable after receipt of a compliant. The records shall include, at a minimum, the date each complaint was received and a description of the following: the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

Operating Requirements

10. NSPS 40 CFR 60, Subpart JJJJ – Lifetime Operation and Maintenance

In accordance with 40 CFR 60.4234, the permittee shall operate and maintain stationary SI ICE that achieves the emission standards as required in 40 CFR 60.4233(d) over the entire life of the engine.

11. Iron Sponge Installation

The Permittee shall install an iron sponge to control Hydrogen Sulfide emissions. When the engine is down for maintenance the flare must be ignited and used as backup.

Performance Test Requirements

12. NSPS 40 CFR 60, Subpart JJJJ – Initial Performance Test Schedule

If a non-certified engine is purchased, in accordance with 40 CFR 60.4243(b)(2)(i), the permittee must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the permittee must conduct an initial performance test to demonstrate compliance.

13. NSPS 40 CFR 60, Subpart JJJJ – Performance Test Procedures

If a non-certified engine is purchased, in accordance with 40 CFR 60.4244, the permittee shall follow the procedures:

- Each performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in §60.8 and under the specific conditions that are specified by Table 2 to Subpart JJJJ.
- The permittee may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §60.8(c). If your stationary SI internal combustion engine is non-operational, you do not need to startup the engine solely to conduct a performance test.
- The permittee must conduct three separate test runs for each performance test required in this section, as specified in §60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour.
- To determine compliance with the NO_x mass per unit output emission limitation for each engine, the permittee shall convert the concentration of NO_x in the engine exhaust using the following equation:

$$ER = \frac{C_d * 1.912 * 10^{-3} * Q * T}{HP - hr}$$

Where:

ER	=	Emission rate of NO_x in g/hp-hr.
C_d	=	Measured NO_x concentration in parts per million by volume (ppmv).
1.912×10^{-3}	=	Conversion for ppm NO_x to grams per standard cubic meter @ 20 degrees Celsius.
Q	=	Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.
T	=	Time of test run, in hours.
HP-hr	=	Brake work of the engine, horsepower-hour.

- To determine compliance with the CO mass per unit output emission limitation, the permittee shall convert the concentration of CO in the engine exhaust using the following equation:

$$ER = \frac{C_d * 1.164 * 10^{-3} * Q * T}{HP - hr}$$

Where:

ER	=	Emission rate of CO in g/hp-hr.
C_d	=	Measured CO concentration in parts per million by volume (ppmv).
1.164×10^{-3}	=	Conversion for ppm CO to grams per standard cubic meter @ 20 degrees Celsius.
Q	=	Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.
T	=	Time of test run, in hours.
HP-hr	=	Brake work of the engine, horsepower-hour.

- When calculating emissions of VOC, emissions of formaldehyde should not be included. To determine compliance with the VOC mass per unit output emission limitation, the permittee shall convert the concentration of VOC in the engine exhaust using the following equation:

$$ER = \frac{C_d * 1.833 * 10^{-3} * Q * T}{HP - hr}$$

Where:

ER	=	Emission rate of VOC in g/hp-hr.
C_d	=	Measured VOC concentration as propane in parts per million by volume (ppmv).
1.833×10^{-3}	=	Conversion for ppm VOC measured as propane to grams per standard cubic meter @ 20 degrees Celsius.
Q	=	Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.
T	=	Time of test run, in hours.
HP-hr	=	Brake work of the engine, horsepower-hour.

Monitoring and Recordkeeping Requirements

14. NSPS 40 CFR 60, Subpart JJJJ – Certified Engine Requirement

    If an EPA certified engines is purchased, in accordance with 40 CFR 60.4243, the engine must certify compliance with the appropriate manufacturer emission standards in 40 CFR 604231(a)-(c). The certified engine and any applicable control device shall be operated according to the manufacturer's emission-related written instructions. Maintenance records must be kept to demonstrate compliance.

15. NSPS 40 CFR 60, Subpart JJJJ – Recordkeeping Requirements

    In accordance with 40 CFR 60.4245 (a)(1) through (3) of this section, the permittee shall keep records of the following information:

    - For each engine notifications submitted and all documentation supporting any notification.
    - Maintenance conducted on each SI engine.
    - Documentation from the manufacturer that the engine is certified to meet emission standards and information in 40 CFR parts 90, 1048, 1054 and 1060, as applicable.

    The permittee shall maintain these records on-site and be made available to DEQ representatives upon request for a period of at least five years.

16. NSPS 40 CFR 60, Subpart JJJJ – Performance Test Submittal

    If a non-certified engine is purchased, in accordance with 60.4245 (d), the permittee must submit a copy of each performance test as conducted in 40 CFR 60.4244 within 60 days after the test has been completed.

17. NSPS 40 CFR 60, Subpart JJJJ – General Provisions of 40 CFR 60

    In accordance with 40 CFR 60.4246, the permittee shall comply with the applicable General Provisions of 40 CFR 60.

18. Iron Sponge Monitoring

    Hydrogen sulfide concentration shall be monitored a minimum of once a week at both the inlet and outlet of the iron sponge. The iron sponge media shall be replaced regularly to avoid corrosion to the engine from the H_2S in the biogas. All maintenance performed on the iron sponge shall be done as expeditiously as possible to limit use of the flare.

19. Iron Sponge Recordkeeping

Records shall include the results of each H_2S measurement.

The hand held H_2S monitor used to measure the H_2S concentration of the landfill gas stream shall have a certified accuracy of plus or minus 10%. The hand held monitor shall be calibrated and maintained in accordance with the manufacturer's specifications.

Records of this information shall be maintained in accordance with the Recordkeeping General Provision.

Incorporation by Reference

20. Unless expressly provided otherwise, any reference in this permit to any document identified in IDAPA 58.01.01.107.03 shall constitute the full incorporation into this permit of that document for the purposes of the reference, including any notes and appendices therein. Documents include, but are not limited to:

- Standards of Performance of New Stationary Sources (NSPS), 40 CFR Part 60, Subpart JJJJ.
- National Emission Standards for Hazardous Air Pollutants (NESHAPS) 40 CFR 63, Subpart ZZZZ.

For permit conditions referencing or cited in accordance with any document incorporated by reference (including permit conditions identified as NSPS), should there be any conflict between the requirements of the permit condition and the requirements of the document, the requirements of the document shall govern, including any amendments to that regulation.

PERMIT TO CONSTRUCT GENERAL PROVISIONS

General Compliance

21. The permittee has a continuing duty to comply with all terms and conditions of this permit. All emissions authorized herein shall be consistent with the terms and conditions of this permit and the Rules for the Control of Air Pollution in Idaho. The emissions of any pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit and the Rules for the Control of Air Pollution in Idaho, and the Environmental Protection and Health Act, Idaho Code §39-101, et seq.

[Idaho Code §39-101, et seq.]

22. The permittee shall at all times (except as provided in the Rules for the Control of Air Pollution in Idaho) maintain in good working order and operate as efficiently as practicable, all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable Idaho laws for the control of air pollution.

[IDAPA 58.01.01.211, 5/1/94]

23. Nothing in this permit is intended to relieve or exempt the permittee from the responsibility to comply with all applicable local, state, or federal statutes, rules and regulations.

[IDAPA 58.01.01.212.01, 5/1/94]

Inspection and Entry

24. Upon presentation of credentials, the permittee shall allow DEQ or an authorized representative of DEQ to do the following:

- Enter upon the permittee's premises where an emissions source is located or emissions related activity is conducted, or where records are kept under conditions of this permit;
- Have access to and copy, at reasonable times, any records that are kept under the conditions of this permit;
- Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
- As authorized by the Idaho Environmental Protection and Health Act, sample or monitor, at reasonable times, substances or parameters for the purpose of determining or ensuring compliance with this permit or applicable requirements.

[Idaho Code §39-108]

Construction and Operation

25. This permit shall expire if construction has not begun within two years of its issue date, or if construction is suspended for one year.

[IDAPA 58.01.01.211.02, 5/1/94]

26. The permittee shall furnish DEQ written notifications as follows in accordance with IDAPA 58.01.01.211:

- A notification of the date of initiation of construction, within five working days after occurrence; except in the case where pre-permit construction approval has been granted then notification shall be made within five working days after occurrence or within five working days after permit issuance whichever is later;

- A notification of the date of any suspension of construction, if such suspension lasts for one year or more;
- A notification of the anticipated date of initial start-up of the stationary source or facility not more than sixty days or less than thirty days prior to such date; and
- A notification of the actual date of initial start-up of the stationary source or facility within fifteen days after such date.

[IDAPA 58.01.01.211.03, 5/1/94]

Performance Testing

27. If performance testing (air emissions source test) is required by this permit, the permittee shall provide notice of intent to test to DEQ at least 15 days prior to the scheduled test date or shorter time period as approved by DEQ. DEQ, at its option, may have an observer present at any emissions tests conducted on a source. DEQ requests that such testing not be performed on weekends or state holidays.

28. All performance testing shall be conducted in accordance with the procedures in IDAPA 58.01.01.157. Without prior DEQ approval, any alternative testing is conducted solely at the permittee's risk. If the permittee fails to obtain prior written approval by DEQ for any testing deviations, DEQ may determine that the testing does not satisfy the testing requirements. Therefore, at least 30 days prior to conducting any performance test, the permittee is encouraged to submit a performance test protocol to DEQ for approval. The written protocol shall include a description of the test method(s) to be used, an explanation of any or unusual circumstances regarding the proposed test, and the proposed test schedule for conducting and reporting the test.

29. Within 30 days following the date in which a performance test required by this permit is concluded, the permittee shall submit to DEQ a performance test report. The written report shall include a description of the process, identification of the test method(s) used, equipment used, all process operating data collected during the test period, and test results, as well as raw test data and associated documentation, including any approved test protocol.

[IDAPA 58.01.01.157, 4/5/00]

Monitoring and Recordkeeping

30. The permittee shall maintain sufficient records to ensure compliance with all of the terms and conditions of this permit. Records of monitoring information shall include, but not be limited to the following: (a) the date, place, and times of sampling or measurements; (b) the date analyses were performed; (c) the company or entity that performed the analyses; (d) the analytical techniques or methods used; (e) the results of such analyses; and (f) the operating conditions existing at the time of sampling or measurement. All monitoring records and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Supporting information includes, but is not limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation and copies of all reports required by this permit. All records required to be maintained by this permit shall be made available in either hard copy or electronic format to DEQ representatives upon request.

[IDAPA 58.01.01.211, 5/1/94]

Excess Emissions

31. The permittee shall comply with the procedures and requirements of IDAPA 58.01.01.130-136 for excess emissions due to startup, shutdown, scheduled maintenance, safety measures, upsets and breakdowns.

[IDAPA 58.01.01.130-136, 4/5/00]

Certification

32. All documents submitted to DEQ, including, but not limited to, records, monitoring data, supporting information, requests for confidential treatment, testing reports, or compliance certification shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete.

[IDAPA 58.01.01.123, 5/1/94]

False Statements

33. No person shall knowingly make any false statement, representation, or certification in any form, notice, or report required under this permit, or any applicable rule or order in force pursuant thereto.

[IDAPA 58.01.01.125, 3/23/98]

Tampering

34. No person shall knowingly render inaccurate any monitoring device or method required under this permit or any applicable rule or order in force pursuant thereto.

[IDAPA 58.01.01.126, 3/23/98]

Transferability

35. This permit is transferable in accordance with procedures listed in IDAPA 58.01.01.209.06.

[IDAPA 58.01.01.209.06, 4/11/06]

Severability

36. The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

[IDAPA 58.01.01.211, 5/1/94]