



**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD  
OF THE STATE OF ILLINOIS**

WM RENEWABLE )  
ENERGY, LLC )  
Landfill Gas Fuel Preparation )  
)  
) PCB 18-  
) (Tax Certification - Air)  
)  
PARCEL NUMBER 02-05-.0-200-006 )

**APPEARANCE**

I hereby file my Appearance in this proceeding on behalf of the Illinois Environmental Protection Agency.

Respectfully submitted by,

/s/ Robb H. Layman

Robb H. Layman  
Assistant Counsel

Date: August 11, 2017

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, Illinois 62794-9276  
Telephone: (217) 524-9137

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**RECOMMENDATION**

NOW COMES the ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (“Illinois EPA”), through its attorneys, and pursuant to 35 Ill. Adm. Code 125.204 of the ILLINOIS POLLUTION CONTROL BOARD’S (“Board”) procedural regulations, files the Illinois EPA’s Recommendation in the above-referenced request for tax certification of pollution control facilities. The Illinois EPA recommends **issuance** of a tax certification covering the subject matter of the request. In support thereof, the Illinois EPA states as follows:

1. On or about May 1, 2017, the Illinois EPA received an application from WM RENEWABLE ENERGY, LLC, (“Waste Management”) concerning the proposed tax certification of a landfill gas fuel preparation facility operating at the Milam Recycling and Disposal Facility in East St. Louis, St. Clair County, Illinois. A revised application on current Illinois EPA Form APC-151 was submitted by electronic mail on June 29, 2017. A copy of the revised application is attached hereto. **[Exhibit A]**.

2. The applicant’s principal business address is as follows:

WM Renewable Energy LLC  
1001 Fannin, Suite 4000  
Houston, Texas 77002

3. The facility address is as follows:

WM Renewable Energy LLC  
601 Madison Road,  
East St. Louis, Illinois 62201

4. The subject matter of this request consists of process-related equipment used in association with a landfill gas-to-energy operation (also known as the High BTU facility) that produces pipeline quality natural gas from landfill gases generated at nearby landfills. Based on the Illinois EPA's review of the application, the request seeks tax certification of landfill gas fuel preparation process-related equipment involved in preparing the landfill gases for distribution into a natural gas pipeline. As described in the Process Overview attachment to the application, the key parts of the fuel preparation processes consist of: sulfur removal process (i.e., inlet condensate sump, inlet coalescing separators, collection blowers, sulfur removal vessels, heat exchangers, liquid separator and first stage compressors); carbon dioxide removal (i.e., pressure swing adsorber and particulate filters/selective membrane stages); nitrogen gas removal (i.e., four pressure swing adsorber vessels, vacuum pump and compressors) and final fuel preparation (i.e., aftercoolers and product compressors). The process-related equipment act collectively to remove impurities (i.e., water and particulates) from the landfill gases prior to distribution to the natural gas pipeline. In doing so, the processes act to prevent or reduce air pollution that would otherwise be emitted to the atmosphere.

5. Section 11-10 of the Property Tax Code, 35 ILCS 200/11-10 (2002), defines "pollution control facilities" as:

"any system, method, construction, device or appliance appurtenant thereto, or any portion of any building or equipment, that is designed, constructed, installed or operated for the primary purpose of: (a) eliminating, preventing, or reducing air or water pollution... or (b) treating, pretreating, modifying or disposing of any

potential solid, liquid, gaseous pollutant which if released without treatment, pretreatment, modification or disposal might be harmful, detrimental or offensive to human, plant or animal life, or to property.”

6. Pollution control facilities are entitled to preferential tax treatment, as provided by 35 ILCS 200/11-5 (2002).

7. Based on information in the application and the primary purpose of the Milam Recycling and Disposal facility’s landfill gas fuel preparation processes to prevent or reduce air pollution, it is the Illinois EPA’s engineering judgment that the process-related equipment, together with the associated building (or portions thereof), may be considered as “pollution control facilities” in accordance with the statutory definition and consistent with the Board’s regulations at 35 Ill. Adm. Code 125.200. **[Exhibit B]**.

8. Because information in the application demonstrates that the Milam Recycling and Disposal facility’s landfill gas fuel preparation processes satisfy the aforementioned statutory and regulatory criteria, the Illinois EPA recommends that the Board issue the applicant’s requested tax certification.

Respectfully submitted by,

/s/ Robb H. Layman

Robb H. Layman  
Assistant Counsel

DATED: August 11, 2017

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, Illinois 62794-9276  
Telephone: (217) 524-9137

**CERTIFICATE OF SERVICE**

I hereby certify that on the 11<sup>th</sup> day of August 2017, I electronically filed the following instruments entitled **NOTICE, APPEARANCE** and **RECOMMENDATION** with:

Don Brown, Clerk  
Illinois Pollution Control Board  
100 West Randolph Street  
Suite 11-500  
Chicago, Illinois 60601

and, further, that I did send a true and correct paper copy of the same foregoing instruments, by First Class Mail with postage thereon fully paid and deposited into the possession of the United States Postal Service, to:

Steve Santarelli  
Illinois Department of Revenue  
101 West Jefferson  
P.O. Box 19033  
Springfield, Illinois 62794

Thomas J. McNulty, Esq.  
Neal, Gerber & Eisenberg, LLP  
P.O. Box 1450  
Chicago, Illinois 60690

/s/ Robb H. Layman  
Robb H. Layman  
Assistant Counsel

Amanda E. Fraerman  
Attorney at Law

Tel 312.269-5279  
Fax 312.429-3559  
afraerman@ngelaw.com

April 19, 2017

RECEIVED  
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MAY 01 2017

Environmental Protection Agency  
DURHAM, NC

**VIA CERTIFIED MAIL**

Illinois Environmental Protection Agency  
P.O. Box 19276  
Springfield, IL 62794-9276

**Re: Application for Certification (Property Tax Treatment) Pollution Control  
Facility  
Parcel No. 02.05.0-200-006 (HIBTU Plant)**

Dear Illinois Environmental Protection Agency:

Enclosed please find the Application for Certification (Property Tax Treatment) Pollution Control Facility, as well as Exhibit B (copies of permits) and Exhibits C & D (process overview, pictures, plans, and process drawings).

Please contact the undersigned should you have any questions.

Sincerely,

Amanda E. Fraerman

AEK

013530.0599 26128377.1

Exhibit A

**Layman, Robb**

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**From:** McNulty, Thomas J. <TMcNulty@nge.com>  
**Sent:** Thursday, June 29, 2017 10:22 AM  
**To:** Layman, Robb  
**Subject:** [External] Pollution Control Application /Waste Management

Good Morning,

Per your telephone call of a few days ago, attached please find the pollution control application using your current form. I understand this will replace the previous form submitted as that form is now out of date. Please advise if you require any further information.

Tom McNulty

**Thomas J. McNulty**  
Partner  
Neal, Gerber & Eisenberg LLP



p: 312.269.8077 | f: 312.750.6444 | e: tmcnulty@nge.com  
Two North LaSalle Street, Suite 1700, Chicago, IL 60602  
www.nge.com

Confidentiality Notice: This communication is confidential and may contain privileged information. If you have received it in error, please notify the sender by reply e-mail and immediately delete it and any attachments without copying or further transmitting the same.



# Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

## Application for Certification (Property Tax Treatment) Pollution Control Facility

**FOR AGENCY USE ONLY**

File Number: _____	Date Rec'd: _____
Certification Number: _____	Date: _____

Facility Type (check one):  Air  Water

This form is to be used for any application for certification of property tax treatment for a pollution control facility for air or water from the Illinois EPA. Separate applications must be completed for each control facility claimed. Do not mix types (air and water). Where both air and water operations are related, file two applications.

If attachments are needed, record them consecutively on an index sheet.

You may complete this form online, save a copy locally, print, sign and submit it to:

Illinois EPA  
Attention: Ray E. Pilapil, Permit Section  
Division of Air Pollution Control  
1021 North Grand Avenue East, P.O. Box 19276  
Springfield, IL 62794-9276

### I. Applicant Information:

Company Name: <u>WM Renewable Energy LLC</u>	Person to Contact for Additional Details: <u>Thomas J. McNulty</u>
Person Authorized to Receive Certification: <u>Clayton Simpson</u>	Street Address: <u>PO Box 1450</u>
Street Address: <u>1001 Fannin, Suite 4000</u>	City: <u>Chicago</u> State: <u>IL</u>
City: <u>Houston</u> State: <u>TX</u>	Zip: <u>60690</u> Phone: <u>312.269.8077</u>
Zip: <u>77002</u> Phone: <u>210-619-7732</u>	Email Address: <u>tmcnulty@nqe.com</u>
Email Address: <u>csimpson2@wm.com</u>	

### II. Facility Information:

Facility Location: Quarter Section: 5 Township: 2N Range: 9W  
Municipality: Canteen Township: 2N

Note: A plat map location is requested for facilities located outside of municipal boundaries

Address: 601 Madison Road City: East St. Louis  
State: IL Zip Code: 62201 County: St. Clair Book Number: \_\_\_\_\_

Property Index Number: \_\_\_\_\_

Note: The Property Index Number is the numerical reference used to identify a parcel of real property for assessment and taxation purposes.

### Manufacturing Operations Information:

Nature of Operations Conducted at the Above Location:

The facility located at the Milam Recycling and Disposal Facility produces Renewable Natural Gas. The feedstock to the facility is landfill gas collected from the Milam Landfill. Carbon dioxide, nitrogen and oxygen are removed from the landfill gas

Permit Information: resulting in an end product that is close to 100% methane. The end product, known as Renewable Natural Gas, is delivered into a natural gas pipeline.

WPC Construction Permit Number: _____	Date Issued: _____
NPDES Permit Number: _____	Date Issued: _____ Exp. Date: _____
APC Construction Permit Number: <u>91110025</u>	Date Issued: <u>Mar 16, 2016</u>
APC Operating Permit Number: _____	Date Issued: _____ Exp. Date: _____

Note: Submit copies of all relevant permits issued by local pollution control agencies (e.g. MSD Construction Permit)

**Manufacturing Process Information:**

Please provide information on the manufacturing process and materials on which pollution control facility is used, including each major piece of equipment associated with the pollution control facility (or low sulfur dioxide emission coal fueled device).  
Description of the Process:

PLEASE SEE ATTACHED PROCESS OVERVIEW. PICTURES AND SCHEMATIC DRAWINGS.

**Materials Used in the Process:**

PLEASE SEE ATTACHED PROCESS OVERVIEW.

**Pollution Control Facility Information:**

Please provide a narrative description of the pollution control facility (or low sulfur dioxide emission coal fueled device), and an explanation of why its primary purpose is to eliminate, prevent or reduce pollution. State the type of control facility, as well as a narrative description and a process flow diagram describing the pollution control facility. Include an average analysis of the influent and effluent of the control facility stating the collection efficiency, if applicable.

Describe the Pollution Control Facility (or Low Sulfur Dioxide Emission Coal Fueled Device):

The facility is designed to utilize landfill gas to produce Renewable Natural Gas for sale into a natural gas pipeline.

Describe the Primary Purpose of the Pollution Control Facility (or Low Sulfur Dioxide Emission Coal Fueled Device):

Rather than combusting landfill gas in an on-site flare, the facility will produce Renewable Natural Gas fro off-site beneficial use.  
  
See process Overview, schematic drawings and photographs.

Identify the statute or regulation (federal or state), or local ordinance, if any, requiring the installation of the subject pollution control facility (or low sulfur dioxide emission coal fueled device).

**Nature of Contaminants or Pollutants:**

List air contaminants or water pollution substances released as effluents to the manufacturing processes. Also list the final disposal of any contaminants removed from the manufacturing processes

Contaminant or Pollutant	Material Retained, Captured or Recovered	
	Description	Disposal or Use
Methane	CH4	delivered to natural gas pipeline
Nitrogen	N	disposal
Oxygen	O2	disposal
Carbon Dioxide	CO2	disposal

Note: Contaminant or pollutant means that which is removed from the process by the pollution control facility.

**Point(s) of Waste Water Discharge:**

Identify the location of the discharge to the receiving stream. This will typically refer to a source of water pollution but can include water-carried wastes from air pollution control facilities.

Plans and Specifications Attached  Yes  No

Submit Drawings, which clearly show:

- (a) Point(s) of discharge to receiving stream; and
- (b) Sewers and process piping to and from the control facility.

Are contaminants (or residues) collected by the control facility?  Yes  No

Note: If the collected contaminants are disposed of other than as wastes, state the disposition of the materials, and the value dollars reclaimed by the sale or reuse of the collected substances. State the cost of reclamation and related expense.

**Project Status:**

Date Installation Completed: March 2015

Provide the date the pollution control facility was first placed into service and operated. If not, explain.

Status of installation on date of application.

In service as of March 2015

**III. Verification and Signature:**

The following information is submitted in accordance with the Illinois Property Tax Code, as amended, and to the best of my knowledge is true and correct.

*Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))*

Clayton Simpson	Financial Director
Printed Name:	Title:

For incorporated entities, signature should be from an authorized corporate representative.

	6.27-2017
Signature:	Date:



Electronic Filing: Received, Clerk's Office 8/14/2017 \* \* PCB 2018-004 \* \*  
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829  
BRUCE RAUNER, GOVERNOR LISA BONNETT, DIRECTOR

217/785-1705

CONSTRUCTION PERMIT - REVISED  
NESHAP SOURCE

PERMITTEE

Milam Recycling and Disposal Facility  
A Subsidiary of Waste Management of Illinois, Inc.  
Attn: Ernest H. Dennison, P.E.  
601 Madison Road  
East St. Louis, Illinois 62201

Application No.: 91110025 I.D. No.: 163050AAD  
Applicant's Designation: MILAMPLANT Date Received: December 14, 2015  
Subject: Gas Collection System and 3 Engines  
Date Issued: MAR 16 2016  
Location: Milam Landfill, 601 Madison Road, East St. Louis, St. Clair County

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of the landfill gas collection system and three engine/generator sets as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1. Introduction

- a. This permit addresses the construction of a landfill gas collection and control system and a gas-to-energy facility with three engine generator sets (the affected engines). This facility would use landfill gas (LFG) collected from the landfill as fuel.
- b. This revised permit addresses the use of natural gas in the affected engines as an alternative to LFG and installation of oxidation catalysts on the engines. This will enable collected LFG to be preferentially sent to the new High-Btu Gas Plant constructed pursuant to Permit 12100003. When natural gas is being used in an affected engine, certain requirements that apply for use of LFG will not be applicable and other requirements that apply for natural gas will be applicable, e.g., use of an oxidation catalyst for control of emissions.

2. Federal Emission Standards

- a. The affected engines are subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE), 40 CFR 63 Subpart ZZZZ (the Engine NESHAP).
- b. As the affected engines are "existing" four stroke lean-burn stationary RICE for purposes of the Engine NESHAP when natural gas provides or will provide more than 90 percent of the gross heat input to an affected engine on an annual basis:



- i. Pursuant to 40 CFR 63.6600(a), the Permittee shall comply with the requirements of Item 9, Table 2d of the Engine NESHAP, which provides that the Permittee shall install an oxidation catalyst to reduce HAP emissions from the affected engines.
  - ii. Pursuant to 40 CFR 63.6640(a), the Permittee shall demonstrate continuous compliance with this emission control requirement of the Engine NESHAP in accordance with Item 14, Table 6 of the Engine NESHAP.
  - iii. Pursuant to 40 CFR 63.6640(b), the Permittee shall report each instance in which the emission control requirement of the Engine NESHAP was not met.
- c. Pursuant to 40 CFR 63.6605(b), at all times the Permittee shall operate and maintain the affected engines, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required by the Engine NESHAP have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Illinois EPA which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

Note: The operational requirements of the Engine NESHAP that apply to an engine when using LFG are addressed in Condition 4.2(h) and (i) of the Clean Air Act Permit Program Permit (CAAPP) permit for the source, Permit 95090088, issued June 15, 2015. For periods when an affected engine uses natural gas, rather than LFG, the above requirements in Condition 2(b) shall apply.

3. State Emission Standards

- a. The affected engines are subject to 35 IAC 212.123(a), which provides that no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit except as allowed by 35 IAC 212.123(b) and 212.124.
- b. The affected engines are subject to 35 IAC 214.301, which provides that no person shall cause or allow the emissions of sulfur dioxide (SO<sub>2</sub>) into the atmosphere from any process emission unit to exceed 2000 ppm.
- c. When LFG is less than 50 percent of the heat input to an affected engine, the engine is subject to 35 IAC 217.388(a)(4)(A), which provides that the Permittee must inspect and perform periodic

maintenance on the engine in accordance with a Maintenance Plan as further specified in 35 IAC 217.388(a)(4)(A)(i) and (ii).

4. Nonapplicability Provisions

- a. i. This permit is issued based upon this gas-to-energy facility, as initially permitted for LFG, not constituting a major modification subject to the state rules for Major Stationary Source Construction and Modification (MSSCAM), 35 IAC Part 203, or the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21.
- ii. This revised permit is issued based upon the use of natural gas as an alternative to LFG not constituting a major modification subject to MSSCAM or PSD. (See Attachment 1 for a summary of potential or projected increases in emissions of various pollutants from use of natural gas.)
- b. i. This revised permit is issued based on the use of natural gas in the affected engines not constituting:
  - A. A modification of the affected engines under the federal New Source Performance Standards (NSPS), 40 CFR 60.14(e)(4). This is because the affected engines are designed and capable of using natural gas, as well as LFG.
  - B. Reconstruction of the affected engines under the NSPS, 40 CFR 60.15(b)(1). This is because the fixed capital cost entailed in using natural gas will not exceed 50 percent of the fixed capital cost to construct new engines.
- ii. As the affected engines are not being modified or reconstructed as defined by the NSPS, this permit is issued based on the affected engines continuing to not be subject to the NSPS for Stationary Spark Ignition Internal Combustion Engines, 40 CFR 60 Subpart JJJJ. This is because, as provided by 40 CFR 60.4230(a)(4), the engines are existing engines because they were constructed prior to June 12, 2006 and will not have been modified or reconstructed on or after June 12, 2006.
- c. For an affected engine that is using natural gas, this permit is issued based on that engine not being subject to the NSPS for Municipal Solid Waste Landfills, 40 CFR 60 Subpart WWW (Landfill NSPS). This includes the requirement that the fuel used in an engine be processed by a fuel treatment system if the source is complying by means of 40 CFR 60.752(b)(2)(iii)(B). This is because that engine would not be using LFG and would not be a control device for LFG for purposes of the Landfill NSPS.

- d. i. When LFG is used an affected engine, the engine is not subject to the requirements of 35 IAC 217 Subpart Q pursuant to 35 IAC 217.386(b)(3). In particular, 35 IAC 217.386(b)(3) provides that the requirements of 35 IAC 217 Subpart Q do not apply to an engine where at least 50 percent of the heat input is LFG.
- ii. When natural gas is used in an affected engine, the affected engine is not subject to the emission limitations in 35 IAC 217 Subpart Q pursuant to 217.388(a)(3)(A). In particular, the combined NOx emissions of all engines at the source that are not otherwise exempt from 35 IAC 217 Subpart Q pursuant to 35 IAC 217.386(b) are limited to less than 100 tons/year.

5. Operation and Emission Limits

- a. LFG and natural gas shall be the only fuels used in the affected engines. Each affected engine shall use one fuel at any time.
- b. i. Beginning when an affected engine first uses natural gas, emissions of nitrogen oxides (NOx), carbon monoxide (CO), volatile organic material (VOM), particulate matter (PM), PM<sub>10</sub>, PM<sub>2.5</sub>, and sulfur dioxide (SO<sub>2</sub>) from the affected engines shall not exceed the following limits.

Pollutant	Limits		
	Each Engine		Total
	Pounds/Hour	Tons/Year	Tons/Year
NOx	7.3/5.1*	22.1	66.3
CO	7.0	30.7	92.1
VOM	2.0	8.70	26.1
PM	0.30	1.33	3.99
PM <sub>10</sub> /PM <sub>2.5</sub>	0.30	1.33	3.99
SO <sub>2</sub>	1.8	7.88	23.7

\* Limits for LFG and natural gas, respectively.

Note: The above emission limits, which address use of natural gas as well as LFG by the affected engines, replace limits for VOM in Condition 4.1.2(a)(i)(A)(I) and for NOx in Condition 4.1.2(a)(i)(B)(I) of the CAAPP permit for the source. This permit also establishes emission limits for PM<sub>10</sub>/PM<sub>2.5</sub>.

- ii. Compliance with the above annual limits and other annual limits set by this permit shall be determined from a running total of 12 months of data.

6-1. NESHAP Testing

- a. i. Pursuant to 40 CFR 63.6612(a) and as provided in Item 13, Table 5 of the Engine NESHAP, within 180 days of first using natural gas in an affected engine, the Permittee conduct an

Page 5

initial compliance demonstration in accordance with 40 CFR 63.6630(e)(1) through (6).

- ii. Pursuant to 40 CFR 63.6645(g), the Permittee shall notify the Illinois EPA at least 60 days prior to the scheduled date of the test.

6-2. Emission Testing

- a. Within 180 days of a written request from the Illinois EPA, or the date agreed upon by the Illinois EPA, whichever is later, the Permittee shall have tests conducted for the affected engine(s) for emissions of NOx, CO and VOM when using natural gas by an approved independent testing service.
- b. The following USEPA methods and procedures shall be used for testing, unless another USEPA method is approved by the Illinois EPA as part of its review of the test plan required by Condition 6-2(c):

Location of Sample Points	Method 1
Gas Flow and Velocity	Method 2
Flue Gas Weight	Method 3
Moisture	Method 4
Nitrogen Oxide	Method 7, 7E or 19
Carbon Monoxide	Method 10
Volatile Organic Material	Methods 18 and 25 or 25A

- c. The Permittee shall submit a written test plan to the Illinois EPA for the initial testing and if a significant change in the procedures for this testing is planned from the procedures followed in the previous test. This plan shall be submitted at least 30 days prior to the actual date of testing and include the following information as a minimum:
  - i. A description of the planned test procedures.
  - ii. The person(s) who will be performing sampling and analysis and their experience with similar tests.
  - iii. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means or manner by which the operating parameters for the emission unit and any control equipment will be determined.
  - iv. The specific determinations of emissions and operation that are intended to be made, including sampling and monitoring locations.

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- v. The test method(s) that will be used, with the specific analysis method, if the method can be used with different analysis methods.
- d. The Permittee shall notify the Illinois EPA prior to conducting these measurements to enable the Illinois EPA to observe testing. Notification for the expected date of testing shall be submitted a minimum of 30 days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of the test. The Illinois EPA may accept shorter advance notice if it does not interfere with the Illinois EPA's ability to observe testing.
- e. Copies of the Final Report(s) for these tests shall be submitted to the Illinois EPA within 30 days after the test results are compiled and finalized but no later than 60 days after completion of sampling. The Final Report shall include as a minimum:
  - i. General information, i.e., date of test, names of testing personnel, and names of Illinois EPA observers.
  - ii. A summary of results, e.g., NOx, CO and VOM emissions, lbs/hour.
  - iii. A detailed description of operating conditions of the engine and oxidation catalyst during testing.
  - iv. Description of test method(s), including description of sampling points, sampling train, analysis equipment, and test schedule.
  - v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
  - vi. Conclusions.
- f. The Permittee shall retain copies of emission test reports for at least three years beyond the date that an emission test is superseded by a more recent test.

7. Monitoring

- a. i. Pursuant to 40 CFR 63.6635(a), the Permittee shall monitor and collect data for the operation of the oxidation catalysts.
- ii. Pursuant to 40 CFR 63.6635(b), except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, the Permittee shall monitor continuously at all times that the affected engines are operating. A monitoring

Page 7

malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

- iii. Pursuant to 40 CFR 63.6635(c), the Permittee may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. The Permittee must, however, use all the valid data collected during all other periods.

8-1. NESHAP Recordkeeping

- a. For the affected engines, the Permittee shall keep the records required by the Engine NESHAP, including 40 CFR 63.6655(a)(1) through (5), 63.6655(b)(1) through (3) and 63.6655(d).

8-2. Recordkeeping

- a. For the affected engines, the Permittee shall keep a copy of the manufacturer's data for the engines, including emissions guarantees, horsepower rating and rated heat input capacity (mmBtu/hour) and operating and maintenance procedures recommended by the manufacturer.
- b. For each affected engine, the Permittee shall maintain an operating log or other operating records that include the following information:
  - i. The operating schedule of the engine, with fuel used.
  - ii. If using natural gas, identification of any period when the engine was not operated with an oxidation catalyst, with date, time, duration and description.
  - iii. Identification of any period when the engine continued to operate after a malfunction or breakdown, with date, time, duration and description.
- c. For the affected engines, the Permittee shall maintain inspection, maintenance and repair logs with dates and the nature of such activities for the engine and, if using natural gas, the oxidation catalyst.
- d. For each affected engine, the Permittee shall maintain a file containing the maximum hourly emission rates (lbs/hour) for use of LFG and use of natural gas, with supporting data and calculations.
- e. For the affected engines, the Permittee shall maintain records for the amount of LFG and natural gas used (scf/month and scf/year).

Page 8

- f. For the affected engines, the Permittee shall maintain the following records related to the emissions of NO<sub>x</sub>, CO, VOM, PM, PM<sub>10</sub>/PM<sub>2.5</sub> and SO<sub>2</sub> of the engines:
  - i. Records for the measurement of the sulfur content of the LFG.
  - ii. A file containing the emission factors used by the Permittee for calculating emissions of pollutants other than SO<sub>2</sub> from the engine(s), with supporting documentation.
  - iii. Records of actual emissions of each pollutant from the engines (tons/month and tons/year), with supporting calculations.
- g. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Illinois EPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA request for records during the course of a source inspection.

9. Notifications and Reporting

- a. Pursuant to 40 CFR 63.6630(c), after completion of the initial performance test required by Condition 6-1(a)(i), the Permittee shall submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in 40 CFR 63.6645.
- b. The Permittee shall fulfill the reporting requirements of the Engine NESHAP, including 40 CFR 63.6650(b) and as required by Item 3, Table 7 of the Engine NESHAP.
- c. If there is a deviation from the requirements of this permit as determined by the records required by this permit or by other means, the Permittee shall submit a report to the Illinois EPA within 30 days after the deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the deviation and efforts to reduce emissions and future occurrences.

10. Authorization to Operate

- a. The Permittee may operate the affected engines using natural gas pursuant to this revised construction permit until the CAAPP permit for the source is revised to address this operating scenario, provided the Permittee submits to the Illinois EPA an application to revise the CAAPP permit within 180 days of the date

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that an affected engine first uses natural gas. This condition supersedes Standard Condition 6.

Please note that this permit has been revised at the request of the Permittee to address the use of natural gas in the affected engines, with increases in the permitted emissions of NOx and VOM, new limits for PM<sub>10</sub>/PM<sub>2.5</sub>, and new provisions addressing requirements of the NESHAP that apply to affected engines when using natural gas.

If you have any questions on this permit, please call Daniel Rowell at 217/785-1705.

*Raymond E. Pilapil*

Raymond E. Pilapil  
Acting Manager, Permit Section  
Division of Air Pollution Control

REP:DBR:jws

*DBR  
3/14/16*

ATTACHMENT 1:

Increases in Emissions of the Engines with Natural Gas (tons/year)<sup>1</sup>

Scenario	Emissions (tons/year)			
	PM	PM <sub>10</sub> /PM <sub>2.5</sub>	NOx	VOM
Baseline Emissions <sup>2</sup>	0.58	0.58	46.7	3.5
Future Emissions	3.99 <sup>3</sup>	3.99 <sup>3</sup>	66.3 <sup>4</sup>	26.1 <sup>4</sup>
Increase	3.41	3.41	19.6	22.6
Significant Emissions Rate	25	15/10	40	40
Significant?	No <sup>5</sup>	No <sup>5</sup>	No	No

Notes:

- 1) This table does not address emissions of CO and SO<sub>2</sub> because projected emissions of CO and SO<sub>2</sub> from the engines will be lower when natural gas is used.
- 2) Baseline actual emissions of the affected engines, as provided in the application.
- 3) Future projected emissions of the affected engines, as provided in the application.
- 4) Future potential emissions of the affected engines, as limited by Condition 5(b).
- 5) The source will also continue to not be a major source for emissions of PM, PM<sub>10</sub> or PM<sub>2.5</sub>.



STATE OF ILLINOIS  
ENVIRONMENTAL PROTECTION AGENCY  
DIVISION OF AIR POLLUTION CONTROL  
P. O. BOX 19506  
SPRINGFIELD, ILLINOIS 62794-9506

**STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS  
ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY**

July 1, 1985

The Illinois Environmental Protection Act (Illinois Revised Statutes, Chapter 111-1/2, Section 1039) authorizes the Environmental Protection Agency to impose conditions on permits which it issues.

The following conditions are applicable unless superseded by special condition(s).

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year from the date of issuance, unless a continuous program of construction or development on this project has started by such time.
2. The construction or development covered by this permit shall be done in compliance with applicable provisions of the Illinois Environmental Protection Act, and Regulations adopted by the Illinois Pollution Control Board.
3. There shall be no deviations from the approved plans and specifications unless a written request for modification, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.
4. The Permittee shall allow any duly authorized agent of the Agency upon the presentation of credentials, at reasonable times:
  - a. to enter the Permittee's property where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit,
  - b. to have access to and copy any records required to be kept under the terms and conditions of this permit,
  - c. to inspect, including during any hours of operation of equipment constructed or operated under this permit, such equipment and any equipment required to be kept, used, operated, calibrated and maintained under this permit,
  - d. to obtain and remove samples of any discharge or emission of pollutants, and
  - e. to enter and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.
5. The issuance of this permit:
  - a. shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located,
  - b. does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities,
  - c. does not release the Permittee from compliance with the other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations,
  - d. does not take into consideration or attest to the structural stability of any units or parts of the project, and

- e. in no manner implies or suggests that the Agency (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.
6.
    - a. Unless a joint construction/operation permit has been issued, a permit for operation shall be obtained from the Agency before the equipment covered by this permit is placed into operation.
    - b. For purposes of shakedown and testing, unless otherwise specified by a special permit condition, the equipment covered under this permit may be operated for a period not to exceed thirty (30) days.
  7. The Agency may file a complaint with the Board for modification, suspension or revocation of a permit:
    - a. upon discovery that the permit application contained misrepresentations, misinformation or false statements or that all relevant facts were not disclosed, or
    - b. upon finding that any standard or special conditions have been violated, or
    - c. upon any violations of the Environmental Protection Act or any regulation effective thereunder as a result of the construction or development authorized by this permit.



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19506, SPRINGFIELD, ILLINOIS 62794-9506-(217) 782-2113

PAT QUINN, GOVERNOR

JOHN J. KIM,

DIRECTOR

217/785-1705

CONSTRUCTION PERMIT  
NSPS/NESHAP SOURCE

PERMITTEE

Milam Recycling and Disposal Facility  
A Subsidiary of Waste Management of Illinois, Inc.  
Attn: Ernest H. Dennison, P.E.  
601 Madison Road  
East St. Louis, Illinois 62201

Application No.: 12100003

I.D. No.: 163050AAD

Applicant's Designation:

Date Received: October 1, 2012

Subject: Landfill Gas Conversion Plant

Date Issued: February 20, 2013

Location: Milam Landfill, 601 Madison Road, East St. Louis, St. Clair County

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a landfill gas conversion plant, with oxidizer control system, as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special conditions:

1. Introduction

- a. This permit authorizes construction of a landfill gas (LFG) conversion plant. This plant will have a nominal processing capacity of 3500 scfm of LFG, and will process a portion of the LFG collected from the Milam landfills to produce high-Btu fuel gas for sale. LFG gas that is not processed by the new plant would continue to be used as fuel in the existing gas-to-energy facility or be controlled by the flares at the landfills.

In the plant, LFG would first be processed by a closed pre-treatment unit to remove sulfur compounds. Carbon dioxide (CO<sub>2</sub>) would then be removed by membrane separation to produce a methane-rich gas. This gas would then be purified by adsorption. The off-gas streams from the membrane separation and adsorption units would be controlled by an oxidizer.

For the purpose of this permit, the new LFG conversion plant and associated oxidizer are referred to as the "affected plant" and the "affected oxidizer", respectively. The combination of existing Milam Landfill and new North Milam Landfill are referred to as the "affected landfill".

- b. i. This permit does not relax or revise any requirements and conditions that apply to the affected landfill and the associated LFG control systems, the existing gas-to-energy facility, tub grinder plants, and waste solidification process, including applicable monitoring, testing,

recordkeeping, and reporting requirements pursuant to the Clean Air Act Permit Program (CAAPP) permit issued for the source, Permit 95090088, and construction permits issued to the source that are not yet addressed in this CAAPP permit.

- ii. This permit does not relieve the Permittee of the responsibility to comply with all Local, State and Federal Regulations which are part of the applicable Illinois State Implementation Plan (Illinois SIP), as well as all other applicable Federal, State and Local requirements. In particular, this permit does not excuse the Permittee from the obligation to undertake further actions at the source as may be needed to eliminate air pollution, including nuisance due to odors or fugitive dust, such as implementation of additional work practices for handling of waste, enhancements to the gas collection system, or implementation of additional dust control measures.
- c. This permit is issued based on the project not constituting a major project for the purposes of state rules for Major Stationary Sources Construction and Modification (MSSCAM), 35 IAC Part 203 and federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21. This is because the emissions from the project are less than the significant emission thresholds for regulated NSR pollutants for purposes of applicability of MSSCAM and PSD rules. (See Condition 4.)

Note: This permit is issued based on the source being a major source of emissions for purposes of PSD and MSSCAM rules. For PSD, this is because, permitted CO emissions of the source are more than 250 tons/year. For MSSCAM, this is because the permitted emissions of NO<sub>x</sub> and SO<sub>2</sub>, which are precursors to nonattainment pollutants, are more than 100 tons/year.

2-1. Applicable Federal Standards - Landfill NSPS

- a. The affected landfill is subject to the applicable requirements of New Source Performance Standard (NSPS) for Municipal Solid Waste Landfills, 40 CFR 60 Subpart WWW (the Landfill NSPS) and related requirements in the General Provisions of the NSPS, 40 CFR 60 Subpart A, as further set forth in the Unit Specific Conditions in CAAPP Permit 95090088.
- b. As the affected oxidizer controls emissions of LFG from the affected landfill, the affected oxidizer is also subject to the Landfill NSPS and applicable requirements in the General Provisions of the NSPS. Pursuant to the Landfill NSPS:
  - i. The oxidizer shall be designed and operated in accordance with 40 CFR 60.752(b)(2)(iii)(B), 60.753(f), 60.755 and 60.756(b). [40 CFR 60.752(b)(2)(ii)]

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- ii. For the oxidizer, the Permittee shall install, calibrate, maintain, and operate a temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of +1 percent of the temperature being measured expressed in degrees Celsius or +0.5 degrees Celsius, whichever is greater. [40 CFR 60.756(b)(1)]
- iii. For the oxidizer, the Permittee shall either, install, calibrate, maintain, and operate a gas flow rate measuring device that records flow of LFG to the oxidize at least every 15 minutes or secure the bypass line valve for the oxidizer in the closed position with a car-seal or lock-and-key configuration to ensure that LFG flow is not diverted through the bypass line. [40 CFR 60.756(b)(2)]
- c. Pursuant to the Landfill NSPS, the Permittee shall at all times, maintain and operate the affected plant and the affected oxidizer in a manner consistent with good air pollution control practice for minimizing emissions, as required pursuant to 40 CFR 60.11(d).

2-2. Applicable Federal Standards - Landfill NESHAP

- a. The affected landfill is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Municipal Solid Waste Landfills, 40 CFR 63, Subpart AAAA (the Landfill NESHAP) and related requirements in 40 CFR 63 Subpart A, General Provisions. Pursuant to the NESHAP:
  - i. For the affected plant and the affected oxidizer, the Permittee must also develop and implement a written startup, shutdown and malfunction (SSM) plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site.
  - ii. As provided by 40 CFR 63.1965, for the purpose of the monitoring and SSM plan requirements, deviations include the following:
    - A. When the control device operating parameter boundaries described in 40 CFR 60.758(c)(1) are exceeded. [40 CFR 63.1965(a)]
    - B. When 1 hour or more of the hours during the 3-hour block averaging period does not constitute a valid hour of data. A valid hour of data must have measured values for at least three 15-minute monitoring periods within the hour. [40 CFR 63.1965(b)]

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C. Failure to develop or implement the SSM plan or maintain a copy of the SSM plan on-site. [40 CFR 63.1965(c)]

iii. The Permittee must keep records and reports as specified in the general provisions of 40 CFR Part 60 and 63 as shown in Table 1 of the Landfill NESHAP. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports. [40 CFR 63.1980(b)]

iv. If alternatives to provisions of the Landfill NSPS are approved by USEPA, these alternatives may also be used to comply with the Landfill NESHAP, except that: 1) The Permittee must comply with the startup, shutdown, and malfunction (SSM) requirements in the NESHAP, 40 CFR 63 Subpart A, as specified in Table 1 of the Landfill NESHAP, and 2) The Permittee must submit compliance reports every 6 months as specified in 40 CFR 63.1980(a) and (b), including information on all deviations that occurred during the 6-month reporting period. [40 CFR 63.1955(c)]

### 2-3. Applicable State Emission Standards

- a. The affected plant, i.e., the affected oxidizer, is subject to 35 IAC 212.123(a), which provides that no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit except as allowed by 35 IAC 212.123(b) and 212.124.
- b. The affected plant, i.e., the affected oxidizer, is subject to 35 IAC 214.301, which provides that no person shall cause or allow the emissions of sulfur dioxide (SO<sub>2</sub>) into the atmosphere from any process emission unit to exceed 2000 ppm.

### 3. Operational and Production Limits and Work Practices

- a. The Permittee shall route all the off-gas streams from the affected plant to the affected oxidizer or other control system that complies with the applicable requirements for control devices in the Landfill NSPS and Landfill NESHAP.
- b. The Permittee shall, in accordance with the manufacturer(s) and/or vendor(s) recommendations, perform periodic maintenance on the oxidizer covered under this permit such that the oxidizer be kept in proper working condition and shall not cause a violation of the Environmental Protection Act and regulations promulgated under.
- c. The rated capacity of the affected oxidizer shall not exceed 3,200 scfm of process gas.

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4. Emission limits

- a. i. Emissions from the affected plant shall not exceed the following limits. These limits are based on information provided in the application including maximum gas flow to the oxidizer.

Pollutant	Limits	
	Lbs/Hour	Tons/Year
NO <sub>x</sub>	4.2	18.3
CO	3.8	16.7
SO <sub>2</sub>	0.9	4.1
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	0.5	2.2
VOM/NMOC	1.5	6.6
Total HAPS	0.6	2.5

- ii. A. Compliance with annual limits shall be determined from a running total of 12 months of data.
- B. Emissions shall be determined using appropriate emission factors, which in order of preference shall be factors from on-site emission testing, manufacturer's emission data, and emission factors from USEPA's *Compilation of Air Pollutant Emission Factors* (AP-42), with appropriate adjustments to reflect any deficiencies in the operation of a unit.
- b. This permit is issued based on the affected plant having negligible emissions of GHG other than biogenic CO<sub>2</sub>, based on the emission determination methodology set forth in USEPA's Mandatory Reporting Rule, 40 CFR Part 98. For this purpose, emissions of GHG, as CO<sub>2</sub>e, excluding biogenic CO<sub>2</sub>, from this project shall not exceed 750 tons per year.
- c. This permit is issued based on the source not being a major source of emissions of hazardous air pollutants (HAPs). For this purpose, HAP emissions of the source, i.e., the combination of the affected landfill, flares, gas-to-energy facility, tub grinder plants, and waste solidification process, shall not exceed 8 tons per year for any individual HAP and 20 tons per year of any combination of HAPs.

Note: This provision is intended to ensure that the source continues to not be a major source of HAP emissions for purposes of Section 112 of the Clean Air Act.

5. Emission Testing Requirements

- a. i. The Permittee shall have an initial performance test for the affected plant (affected oxidizer) for NMOC emissions conducted in accordance with 40 CFR 60.754, to demonstrate

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compliance with the requirements of 40 CFR  
60.752(b)(2)(iii)(B).

- ii. In conjunction with this testing, the Permittee shall have observation of the opacity from the affected oxidizer conducted by a certified observer in accordance with USEPA Method 9.
  - iii. In conjunction with this testing, the Permittee shall also have sampling and analysis of the incoming LFG being processed by the plant and the stream of off-gas to the oxidizer conducted in accordance with Condition 7.
- b. These performance tests shall be conducted in accordance with the applicable requirements of the Landfill NSPS, with required test plans, test notifications and reports submitted to the Illinois EPA.
  - c. The Permittee shall submit the report for this testing to the Illinois EPA no later than 60 days after testing is conducted. This report shall also include information for the opacity observations and composition of off-gas, as addressed by Condition 5(a)(ii) and (iii).

6. Monitoring Requirements

- a. For the affected oxidizer, the Permittee shall comply with applicable monitoring requirements of the Landfill NSPS and Landfill NESHAP, including 40 CFR 60.755, 60.756, and 63.1960 for conducting continuous monitoring for the flow rate of the off-gas stream to the oxidizer and the temperature in the combustion chamber of the oxidizer.
- b. For the affected oxidizer, if the off-gas stream is supplemented with fuel quality gas, the Permittee shall install, operate and maintain instrumentation to measure the amount of fuel gas that is added.

7. Sampling and Analysis of Gas Streams

- a. The Permittee shall conduct sampling and analysis for the composition of the incoming LFG processed by the affected plant and the off-gas stream to the oxidizer as follows. The samples shall be analyzed for sulfur and NMOC content (ppm) and heat content (Btu/cubic foot). If USEPA Method 18 is used to determine NMOC content, the minimum list of compounds to be tested shall be those listed in the most recent version of USEPA's *Compilation of Air Pollutant Emission Factors (AP-42)*. These analyses may be performed by the Permittee or an independent company. Written notification or submittal of a formal testing protocol is not required for these activities.

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- i. Sampling and analysis for NMOC content and heat content shall be conducted on at least an annual basis.
- ii. Sampling and analysis for sulfur content shall be conducted on at least semi-annual basis.
- b. The Permittee shall keep records for this sampling and analysis activity, including both collected data and documentation for the sampling and analysis activities.

8. Recordkeeping Requirements

- a. For the affected plant and affected oxidizer, the Permittee shall fulfill applicable recordkeeping requirements of the Landfill NSPS and NESHAP, including 40 CFR 60.757 and 63.1980.
- b. The Permittee shall keep the following records for the affected plant:
  - i. A file containing the written procedures that are being followed as good air pollution control practice to minimize emissions in accordance with Conditions 2-1(c), which may incorporate procedures provided by the manufacturer and be combined with other procedures maintained for the affected plant by the Permittee.
  - ii. Records for the amount of LFG processed (scf/month and scf/year).
  - iii. An operating log or other records for the affected plant that at a minimum includes the following.
    - A. The operating schedule of the plant.
    - B. Identification of any period when the plant continued to operate after a malfunction or breakdown of the plant, with date, time, duration and description.
  - iv. Inspection, maintenance and repair logs or other records with dates and the nature of such activities for the plant, including the pre-treatment unit, membrane separation unit and adsorption unit. These records may be combined with other records that the Permittee keeps for the affected plant.
- d. The Permittee shall maintain the following records for the affected oxidizer:
  - i. A file containing the design specifications for the oxidizer including rated capacity, scfm, manufacturer's data for emissions guarantees and recommended operating and maintenance procedures, and a demonstration that the

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oxidizer complies with applicable operating requirements of the requirements of 40 CFR 60.752(b)(2)(iii)(B).

- ii. Records for the amount of off-gas combusted in the oxidizer and usage of supplemental fuel gas, on a daily basis.
- iii. An operating log or other records that at a minimum shall include the following. These records may be combined with other operational records that the Permittee keeps for the oxidizer.
  - A. Status of the oxidizer.
  - B. Adjustments of operating parameters for the oxidizer.
  - C. Identification of any period when the oxidizer was out of service with a detailed explanation of the cause and an explanation of actions taken to prevent or reduce the likelihood of similar occurrences in the future.
- iv. An inspection, maintenance and repair log or other records that shall include the following. These records may be combined with other records that the Permittee keeps for this equipment.
  - A. Date of inspection and observed condition of the oxidizer.
  - B. Date and description of maintenance performed.
- e. The Permittee shall keep the following records related to the emissions of the affected plant:
  - i. A file containing: the information used by the Permittee for calculating emissions of NO<sub>x</sub>, CO, SO<sub>2</sub>, PM/PM<sub>10</sub>/PM<sub>2.5</sub>, VOM/NMOC, HAPs, N<sub>2</sub>O, and methane from the affected plant, with supporting documentation and calculations, including: 1) The emission factors, and 2) The maximum hourly emission rates;
  - ii. The emissions of NO<sub>x</sub>, CO, SO<sub>2</sub>, PM/PM<sub>10</sub>/PM<sub>2.5</sub>, VOM/NMOC, HAPs, and GHG, as CO<sub>2</sub>e, excluding biogenic CO<sub>2</sub>, from the affected plant, with supporting calculations.
- f. The Permittee shall maintain records for all observations for visible emissions and opacity made in accordance with USEPA Method 22 or 9, respectively, for the affected oxidizer that the Permittee conducts or that are conducted on its behalf by individuals who are qualified to make such observations. For each occasion on which such observations are made, these records shall include the identity of the observer, a description of the

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various observations that were made, the observed opacity, and copies of the raw data sheets for the observations.

9. Retention of Records

Unless a longer retention period is specified by the NSPS or NESHAP for particular records, records and logs required by this permit shall be retained at a readily accessible location at the source for at least five years from the date of entry and shall be made available for inspection and copying by the Illinois EPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA request for records during the course of a source inspection.

10. Notification and Reporting Requirements

- a. For the affected plant, the Permittee shall fulfill the applicable notification and reporting requirements of the Landfill NSPS and NESHAP including 40 CFR 60.758 and 63.1980.
- b. If there is any deviation from the requirements of this permit, the Permittee shall submit a report to the Illinois EPA as follows. The report shall include a description of the deviation, the probable cause of the deviation, the corrective actions that were taken and any actions taken to reduce similar occurrences in the future.
  - i. Deviations from NSPS and NESHAP requirements shall be reported in accordance with the NSPS and NESHAP rules.
  - ii. Deviations from other requirements shall be reported in a semi-annual report unless more rapid reporting is required by the CAAPP permit for the source.
- c. The Permittee shall notify the Illinois EPA within 30 days of the following events for the affected plant:
  - i. Commencement of construction, with the anticipated date for initial start of operation.
  - ii. Commencement of operation.

11. General Requirements for Reports and Notifications

- a. Two copies of the required reports and notifications shall be sent to the Illinois EPA at the following address:

Illinois Environmental Protection Agency  
Bureau of Air  
Compliance Section (#40)  
P.O. Box 19276  
Springfield, Illinois 62794-9276  
217/782-5811

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- b. One copy of required reports and notifications shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
2009 Mall Street  
Collinsville, Illinois 62234

Tel: 618/346-5120 Fax: 618/346-5155

12. Authorization to Construct and Operate

- a. The Permittee may construct the affected plant pursuant to this permit, provided that construction is commenced by December 31, 2014. This condition supersedes Standard Condition 1.
- b. The Permittee may operate the affected plant pursuant to this permit, until a CAAPP permit for the source is issued that addresses this plant. This supersedes Standard Condition 6.

If you have any questions on this permit, please call Kunj Patel at 217/785-1705.



Edwin C. Bakowski, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

Date Signed:

February 20, 2013

ECB:CPR:KMP:psj

cc: Region 3

Attachment F2

Modification No. 57 to Permit No. 1991-152-LFM  
"approves proposal for ... high BTU gas plant"

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217)782-2829

PAT QUINN, GOVERNOR

LISA BONNETT, DIRECTOR

217/524-3301

March 28, 2013

Certified Mail

7012 0470 0001 2997 1877

Waste Management of Illinois, Inc.  
Attn: Ernest H. Dennison, P.E.  
601 Madison Road  
East St. Louis, Illinois 62201

Re: 1630450001 -- St. Clair County  
Milam RDF  
Permit No. 1991-152-LFM  
Modification No. 57  
Log No. 2012-352  
Expiration Date: March 1, 2013  
Permit Landfill 810-817 File  
Permit Approval

Dear Mr. Dennison:

Permit has been granted to Waste Management of Illinois, Inc., as owner, and as operator, allowing modification of an existing municipal solid waste and non-hazardous special waste landfill all in accordance with the application and plans approved by Permit No. 1991-152-LFM. Final plans, specifications, application, and supporting documents, as submitted and approved, shall constitute part of this permit and are identified in the records of the Illinois Environmental Protection Agency (the "Illinois EPA"), Bureau of Land, Division of Land Pollution Control by the permit number and log number designated in the heading above.

Permit No. 1991-152-LFM, issued on March 18, 1993, approved development of a new putrescible waste landfill unit pursuant to 35 Illinois Administrative Code Subtitle G Chapter I Subchapter i (hereinafter 35 IAC) Parts 811, 812, 813 and 814. This landfill was designed to handle municipal waste and non-hazardous special waste, with site boundaries encompassing approximately 208 acres, a waste footprint of approximately 176 acres, a waste capacity of approximately 14.7 million cubic yards and a maximum final elevation of 567 feet AMSL.

Modification No. 27 to Permit No. 1991-152-LFM approved a vertical expansion of the facility consisting of approximately 4,750,000 cubic yards of additional capacity with a maximum elevation of 630 feet above mean sea level. The total in-place capacity of the landfill is now approximately 19.45 million cubic yards excluding liner and final cover, but including daily and intermediate cover. The lower waste boundaries and the waste footprint have not changed. The

Page 2

final contours approved by this permit are shown on the drawing entitled "Milam Vertical Expansion Final Contours: Sheet 4"; furthermore, the upper waste boundaries approved by this permit are defined by the final contours within the waste footprint minus the design thickness of the final cover system (i.e., 4 feet). The sheet is in the June 23, 2003 addendum to Permit Application Log No. 2002-095.

Permit Modification No. 57 is hereby granted to Waste Management of Illinois, Inc. as owner and operator, allowing modification of an existing municipal solid waste and non-hazardous special waste landfill, all in accordance with application Log No. 2012-352 prepared, signed and sealed by Ernest H. Dennison, P.E. of Waste Management of Illinois, Inc., signature dated July 24, 2012.

The application approved by Modification No. 57 consists of the following documents:

<u>DOCUMENT</u>	<u>DATE OF DOCUMENT</u>	<u>DATE RECEIVED</u>
Log No. 2012-352	July 24, 2012	July 25, 2012
Waiver	October 18, 2012	October 25, 2012
Addendum	January 22, 2013	January 24, 2013

Modification No. 57 to Permit No. 1991-152- LFM approves the proposal for a landfill gas to high BTU gas plant.

Except for the differences described in the table below, the special conditions of the permit letter for Modification No. 57 to Permit No. 1991-152-LFM are identical to the special conditions to Modification No. 56, issued March 13, 2013.

Special Condition No. in Modification No. 56	Special Condition No. in Modification No. 57	Description of Revision
None	VII.12	New condition added.

Pursuant to Section 39(a) of Illinois Environmental Protection Act ("the Act") and 35 Ill. Adm. Code, 813.104(b), this permit is issued subject to the development, operating and reporting requirements for non-hazardous waste landfills in 35 Ill. Adm. Code Parts 810, 811, 812, 813 and 814, the standard conditions attached hereto, and the following special conditions. In case of conflict between the permit application and these conditions (both standard and special), the conditions of this permit shall govern.

I. CONSTRUCTION QUALITY ASSURANCE

1. All necessary surface drainage control facilities shall be constructed prior to other disturbance in any area.

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2. Except for Phase I, Phase III (North), Phase III (South), Phase IV (West), Phase IV (East), Phase IV (Northwest), Phase IV (Northeast), Phase V (Northwest), Phase V (North), and those areas permitted for operation pursuant to Item C of Permit No. 1991-152-LFM, no part of the unit subject to Permit No. 1991-152-LFM shall be placed into service (i.e. begin waste disposal) until an acceptance report for all the activities listed below has been submitted to and approved by the Illinois EPA as a significant modification pursuant to 35 IAC, 811.505(d) and 813.203.
  - a. Compaction of the subgrade and foundation to design parameters;
  - b. Installation of the compacted earth liner;
  - c. Installation of the leachate drainage and collection system; and
  - d. Construction of ponds, ditches, lagoons and berms.
3. The permittee shall designate an independent third party contractor as the Construction Quality Assurance (CQA) Officer(s). The CQA Officer(s) shall be an Illinois Certified Professional Engineer who is independent from and not under the control or influence of the operator, any employee of the operator, or any other corporation, company or legal entity that is a subsidiary, affiliate, parent corporation or holding corporation associated with the operator.
4. All standards for testing the characteristics and performance of materials, products, systems and services shall be those established by ASTM unless otherwise stated in the permit application.
5. The thickness of the soil layers in the liner and final cover shall be no less than the minimum thicknesses prescribed in 35 IAC 811.306 and 811.314. Furthermore, pursuant to 35 IAC 811.306(d)(5)(A)(i), any geomembrane used in the liner system shall have an average thickness of at least 60 mils, utilizing the proposed ASTM D 5199 test method.
6. All stakes and monuments marking the facility boundary and the permitted disposal area shall be maintained, inspected annually and surveyed no less frequently than once in five years by a professional land surveyor. Any missing or damaged stakes or monuments discovered shall be replaced and resurveyed.
7. Effective upon issuance of Modification No. 52 (Log No.2011-069), all testing including conformance and seaming of the geomembrane used shall meet Geosynthetic Research Institute's requirements with the following exceptions: For the geomembrane used in the bottom liner, the minimum thickness must be within 5% of nominal for all samples, i.e. 60 mil liner must be at least 57 mil; and

UV resistance testing is not necessary unless the geomembrane is exposed for more than 30 days.

II. OPERATING CONDITIONS

1. Pursuant to 35 IAC, 811.107(a) and 811.107(b), throughout the operating life of this landfill, waste shall not be placed in a manner or at a rate which results in unstable internal or external slopes or interference with construction, operation or monitoring activities.
2. The operator of this solid waste facility shall not conduct the operation in a manner which results in any of the following:
  - a. refuse in standing or flowing waters;
  - b. leachate flows entering waters of the State;
  - c. leachate flows exiting the landfill confines (i.e., the facility boundaries established for the landfill in a permit or permits issued by the Illinois EPA);
  - d. open burning of refuse in violation of Section 9 of the Environmental Protection Act;
  - e. uncovered refuse remaining from any previous operating day or at the conclusion of any operating day, unless authorized by permit;
  - f. failure to provide final cover within time limits established by Board regulations;
  - g. acceptance of wastes without necessary permits;
  - h. scavenging as defined by Board regulations;
  - i. deposition of refuse in any unpermitted (i.e., without an Illinois EPA approved significant modification authorizing operation) portion of the landfill;
  - j. acceptance of a special waste without a required manifest;
  - k. failure to submit reports required by permits or Board regulations;
  - l. failure to collect and contain litter from the site by the end of each operating day.

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3. Moveable, temporary fencing shall be used to prevent blowing litter when the refuse is above the natural ground line.
4. At the end of each day of operation, all exposed waste shall be covered with:
  - a. Clean soil at least six (6) inches thick (i.e., conventional daily cover);
  - b. Soil, at least six (6) inches thick, which has been bioremediated in the on-site vacuum heaps to the point that it meets the cleanup standards;
  - c. A 50:50 mixture of clean soil and compost, as defined in Section 3.69 of the Act, at least six (6) inches thick;
  - d. A biodegradable plastic with a minimum thickness of four (4) mils;
  - e. A geotextile fabric with a minimum weight of six (6) ounces (per square yard);
  - f. Paper pulp sludge at least 6 inches thick;
  - g. Clean construction and demolition debris at least six (6) inches thick;
  - h. Petroleum contaminated soil at least six (6) inches thick; or
  - i. Foundry sand at least six (6) inches thick.
  - j. Dried POTW sludge.
  - k. Incinerated POTW sludge.
  - l. Crushed glass.
  - m. Shredded tires at least six (6) inches thick.
  - n. Solidified liquid waste at least six (6) inches thick.
  - o. Processed scrap shredder waste.
  - p. Contaminated soil.
5. The mixture of clean soil and compost, the biodegradable plastic, the geotextile fabric, paper pulp sludge, soil bioremediated in the on-site vacuum heaps, clean construction and demolition debris and petroleum contaminated soil are alternate

daily cover pursuant to 35 IAC, 811.106(b) and 812.111(b). Their use as alternate daily cover shall be subject to the following conditions:

- a. If any alternate daily cover other than those approved by this permit are to be used, their use must be approved by the Illinois EPA through the permit process.
- b. At any one time, the total area, using alternate daily cover, shall be no more than 10,000 square yards. Beyond this maximum, conventional daily cover shall be used on all areas in which waste has been disposed and to which intermediate or final cover has not been applied.
- c. Areas, upon which alternate daily cover has been used, must be covered with either conventional cover or additional waste within 14 days.
- d. Conventional daily cover shall be used if weather or other conditions adversely affect the ability of the alternate daily cover to prevent problems with blowing litter, fire, odors, or vectors.
- e. Geotextile fabric and biodegradable plastic panels shall be anchored adequately to prevent wind damage. If the panels are torn during or after placement, they must be repaired immediately or the damaged area must be covered with six inches (6") of daily cover soil. If tires are used as weights for the alternate daily cover, they shall be converted tires, in accordance with 35 IAC, Part 848: Management of Used and Waste Tires.
- f. The compost, used in combination with clean soil as daily cover, shall be thoroughly biodegraded to the point that the potential for odors emanating from the material and the potential for fire sustainment by the material are minimized.
- g. When an alternate daily cover is applied, the operator shall keep a record including a description of the weather conditions, the type of alternate daily cover used and its performance. A summary of this information shall be provided with this facility's annual reports.
- h. Geotextile fabric and biodegradable plastic panels which have been used for alternate daily cover may not be reused for any purpose (including road underlayment and erosion control) outside of permitted disposal boundaries.
- i. Only "clean construction and demolition debris" that meets the definition contained in the Section 3.160(b) of the Illinois Environmental Protection Act and that can be placed without leaving unacceptably large voids or

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open passages to the waste mass may be used as alternate daily cover. Also, the requirements of 35 IAC 811.106(b)(1-4) must be met at all times.

- j. The following conditions apply to petroleum contaminated soil:
  - i. The petroleum contaminated soil must be non-hazardous waste.
  - ii. Each load of contaminated soil to be used as daily cover shall be inspected to ensure that its use will not generate odors and will minimize the threat of fire. The operator shall maintain a log of these inspections including, but not limited to, the date, a description of the soil contaminant, the generator name, number, and the amount of soil in cubic yards. The logs shall be maintained in the operating record for the facility and shall be available for the Illinois EPA's inspection upon request.
  - iii. The petroleum contaminated soil must only be used in areas of the land fill where any leachate flowing off the petroleum contaminated soil cover would drain into the leachate collection system.
  - iv. Petroleum contaminated soil with obnoxious odors or soil with debris shall not be used as alternate daily cover.
  - v. No stockpiling of petroleum daily cover will be allowed. All petroleum contaminated soil must be used as daily or disposed at the active face on the day of its receipt at the land fill.
  - vi. Once placed as daily cover or disposed, petroleum contaminated soil shall not be removed.
  - vii. The requirements of 35 IAC 811.106(b)(1-4) must be met at all times.
  - viii. It should be noted that this project includes air emission sources that may require a construction and operating permit from the Illinois EPA's Bureau of Air/Division of Air Pollution Control. (Any questions concerning this condition may be directed to permit analysis in the Division of Air Pollution Control at 217/782-2113.)
- k. The following conditions apply to foundry sand:
  - i. The foundry sand must be non-hazardous waste.

- ii. Measures shall be taken to prevent fugitive dust emissions, including use of the foundry sand only below the surrounding grade and use only when weather conditions (wind) will not cause fugitive dust emissions;
  - iii. "Wetting" disposal areas covered with foundry sand is prohibited;
  - iv. The minimum thickness of the applied cover shall be six (6) inches;
  - v. The foundry sand may only be used in areas of the landfill where leachate flowing off the foundry sand cover would drain into the leachate management system and not to surface water (e.g., never place foundry sand as alternate daily cover on outside slopes);
  - vi. No stockpiling of foundry sand is allowed. All foundry sand received each day must be used as daily cover or disposed of at the active face; and
  - vii. Once placed, foundry sand used as alternate daily cover shall not be removed.
- l. The following conditions shall apply to the use of dried/ incinerated POTW sludge:
- i. The sludge must be a non-hazardous waste;
  - ii. Measures shall be taken to prevent fugitive dust emissions, and use only when weather conditions (wind) will not cause fugitive dust emissions;
  - iii. The minimum thickness of the applied cover shall be six (6) inches;
  - iv. The dried/ incinerated POTW sludge may only be used in areas of the landfill where leachate flowing off the dried/ incinerated POTW sludge cover would drain into the leachate management system and not to surface water (e.g., never place dried/ incinerated POTW sludge as alternate daily cover on outside slopes);
  - v. Once placed, dried/ incinerated POTW sludge used as alternate daily cover shall not be removed.

- m. The crushed glass to be used as alternate daily cover or road base within the active face of the landfill shall be 3 inches in size or less. The crushed glass to be used as alternate daily cover or as road base shall not be trommel screen fines. The crushed glass may be stored in roll-off boxes or in stockpiles near the active area of the landfill for a period not more than 30 days.
- n. Shredded tires used as alternate daily cover shall be managed in accordance with 35 Ill. Adm. Code Part 848, Management of Used and Waste Tires. Shredded tires used as alternate daily cover shall be no longer than 2 inches in size.
- o. The use of solidified liquid wastes as alternate daily cover shall be subject to the following conditions:
  - i. The waste shall be managed as a special waste.
  - ii. The minimum thickness of the daily cover layer shall be 6 inches.
  - iii. Once placed, the solidified liquid waste shall not be removed.
  - iv. Any storm water runoff from areas in which solidified liquid waste has been used as alternate daily cover shall be collected and managed as leachate.
  - v. No storage/ stockpiling of solidified liquid waste is allowed.
- p. The following condition shall apply to the use of processed scrap shredder waste as alternate daily cover:
  - i. Waste must be non- hazardous.
  - ii. The minimum thickness of the applied processed scrap shredder waste is six (6) inches.
  - iii. Once applied as alternate daily cover, processed scrap shredder waste shall not be removed.
  - iv. Processed scrap shredder waste shall be used in areas of the landfill where leachate drains into the leachate drainage and collection systems and not to surface water.
  - v. Processed scrap shredder waste will only be used as alternate daily cover when wind speed is less than 20 mph.
  - vi. The operator shall maintain a log including, but not limited to, the date and the amount of processed scrap shredder waste used in

cubic yards. The logs shall be maintained in the operating record for the facility and shall be available for the Illinois EPA's inspection upon request.

- q. The following condition shall apply to the use of contaminated soil as alternate daily cover:
  - i. Only contaminated soil that has been classified in accordance with the requirements in Section 22.48 of the Act may be used as alternate daily cover.
  - ii. The minimum thickness of the applied contaminated soil is six (6) inches.
  - iii. Use of contaminated soil as alternate daily cover shall be limited to areas where runoff will be collected by the leachate collection system.
  - iv. Each load of contaminated soil to be used as daily cover shall be inspected to ensure that its use will not generate odors. The operator shall maintain a log of these inspections including, but not limited to, the date, a description of the soil contaminant, the generator name, number, and the amount of soil in cubic yards. The logs shall be maintained in the operating record for the facility and shall be available for the Illinois EPA's inspection upon request.
  - v. Once placed as alternate daily cover contaminated soil shall not be removed.
- r. Stockpiling of processed scrap shredder waste and contaminated soil to be used as alternate daily cover shall be subject to the following conditions.
  - i. Processed scrap shredder waste and contaminated soil shall be stockpiled in roll-off boxes or in tarped piles in an area of the landfill equipped with a bottom liner and leachate drainage layer and collection system that complies with the applicable standards in 35 IAC 811.
  - ii. Processed scrap shredder waste and contaminated soil shall not be stockpiled on areas of the landfill that have received final cover. Processed scrap shredder waste and contaminated soil shall not be stockpiled in an area of the landfill that would result in the exceedence of the permitted final waste elevations.

- iii. No more than 10,000 cy of processed scrap shredder waste and/ or contaminated soil is to be stockpiled at any one time. Processed scrap shredder waste and contaminated soil is not to be stockpiled more than 30 days.
  - iv. The operator shall maintain a record of the stockpiles of the processed scrap shredder waste and contaminated soil. The following information shall be recorded and maintained for each stockpile the generator's name and wastes profile number: the stockpile location, the quantity of soil received, the dates of receipt, the quantity of soil removed and date of removal. The record shall be maintained at the facility and shall be made available to the Illinois EPA or its delegate upon request.
  - s. If the Illinois EPA's Field Operations Section determines that any alternate material for daily cover is not performing satisfactorily pursuant to the criteria described in 35 IAC, 811.106(b), the operator shall cease using the material for daily cover immediately upon receipt of written notification of such determination.
6. No later than 60 days after placement of the final lift of waste in any area, the area shall have final cover system meeting the following design specifications:
- a. A six (6) inch vegetative layer, underlain by a 30 inch protective layer underlain by a geocomposite drainage layer (in areas specified in Sheet 4 of the May 6, 2003 addendum of Log No. 2002-095), underlain by a minimum 35 mil, textured HDPE geomembrane, underlain by a 12 inch layer of low permeability soil with a maximum hydraulic conductivity of  $5 \times 10^{-6}$  cm/sec, underlain by a six (6) inch grading layer.  
  
In the areas of final cover that require a drainage net over the geomembrane, minimum 50- mil LLDPE Super Gripnet overlain by a geotextile may be used to replace the geocomposite drainage layer and 35-mil textured HDPE geomembrane, and GSE Fabricap Light may be used to replace the geocomposite drainage layer. Use of these or equivalent materials shall not compromise the functional requirements of the final cover system.
  - b. A six (6) inch soil vegetative layer, underlain by a 30 inch soil protective layer underlain by a minimum 35-mil textured HDPE geomembrane , underlined by a geosynthetic clay liner (GCL) underlain by one (1) foot compacted soil layer with maximum hydraulic conductivity of  $1 \times 10^{-3}$  cm/sec, underlain by six (6) inch soil grading layer. This final cover system may be used on any portion of the landfill.

Compost may be used as a soil amendment in the vegetative layer. However, it must be thoroughly incorporated and shall not constitute more than fifty percent of the soil/compost mixture.

Dried/incinerated POTW sludge may be used as an amendment in the lower 30 inches of the final protective layer at a rate not to exceed 20% by volume. The dried/incinerated sludge must exhibit a minimum solids content of 60% and shall meet USEPA Part 503 pathogen requirements for a Class A sludge.

7. The following conditions apply to the storage of dried/ incinerated POTW sludge prior to use as an alternate daily cover or a final protective layer soil amendment.
  - a. Storage time shall not exceed 90 days. The volume of the stored sludge will be no more than 10,000 cubic yards.
  - b. Dried/ incinerated sludge shall be stored in a covered roll-off box or stockpiled and covered with 6 inches of clean soil.
  - c. Dried/ incinerated sludge shall only be stored/ stockpiled in an area of the landfill equipped with a bottom liner and leachate drainage layer and collection system that complies with applicable standard in 35 Ill. Adm. Code 811. The dried/incinerated sludge shall be stored/ stockpiled in an area of the landfill where runoff from the stockpile is tributary to the leachate drainage layer and collection system.
  - d. Dried/ incinerated sludge shall not be stored/ stockpiled in an area of the landfill that would result in the exceedance of the permitted final waste elevations.
8. This facility shall request a modification of NPDES Permit Number IL0062138 prior to utilizing biosolids or bioremediated soils as final protective cover, final cover, intermediate cover or daily cover. Any questions regarding the NPDES permit process may be directed to the Division of Water Pollution Control, Permit Section at 217/782-0610. This modification request shall be submitted to the following address:

Illinois Environmental Protection Agency  
Division of Water Pollution Control- Permit Section  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, Illinois 62794-9276

9. All waste, which is not covered within 60 days of placement of another lift of waste or final cover, shall have an intermediate cover of compacted clean soil with a minimum thickness of one (1) foot applied to it.
10. The operator shall implement a load checking program that meets the requirements of 35 IAC, 811.323. If regulated hazardous waste or other unacceptable wastes are discovered, the Illinois EPA shall be notified no later than 5:00 p.m. the day it is detected. The load checker shall prepare a report describing the results of each inspection. A summary of these reports shall be submitted to the Illinois EPA as part of this facility's annual report.
11. The spent spray from washing the on-site heavy equipment or waste hauling vehicles with a low volume, high pressure sprayer in the active area (as approved in Modification Nos. 7 and 12 to Permit No. 1991-152-LFM) is leachate, as defined in 35 IAC, 810.103, and shall be managed as such.
12. The permittee shall submit an annual report to the Illinois EPA for all non-hazardous special waste in accordance with 35 IAC, Subtitle G, Part 809, Subpart E.
13. The operating hours for this facility shall be limited to between 3:00 A.M. - midnight, seven (7) days a week. Operating hours are those hours during which waste may be accepted at this facility.
14. If it is required for the facility to be open beyond normal operating hours to respond to emergency situations, a written record of the date(s), times and reason the facility was open shall be made part of the operating record for the facility. The Illinois EPA-FOS Regional Office and, when applicable, the county authority responsible for inspections of this facility per a delegation agreement with the Illinois EPA shall be notified no later than 5:00 p.m. the next business day following the acceptance of waste outside the specified operating hours.
15. The operation of this facility shall not cause a violation of the Noise Control Regulations in 35 IAC Subtitle H, Section 901.
16. The operator shall not allow construction or operation of the truck wash, sanctioned by Modification No. 12 to Permit No. 1991-152-LFM, in any way impair proper construction, operation or maintenance of the landfill. If surfaces which have come into direct contact with waste, such as the interior of the beds of waste hauling trucks, are washed at the onsite truck wash, the sludge from the truck wash will be considered a special waste and must be tested in accordance with the procedures described in Condition No. X.3 of Modification No. 16. However, the manifesting and hauling procedures described in Condition No.

X.1(b) and (c) of Modification No. 16 shall not apply to this sludge if it is disposed at the Milam Landfill.

17. The use of a pug mill to wet dry or dusty waste prior to disposal to control fugitive dust is hereby approved. The use of pug mill is subject to the following conditions:
  - a. The pug mill shall be located over lined portions of the landfill equipped with a bottom liner and leachate drainage layer and collection system that complies with the applicable standards in 35 Ill. Adm. Code 811.
  - b. The dry or dusty waste shall be wetted using water and/or on-site generated leachate.
  - c. Please note that this project includes air emission units, which may require a permit(s) from the Illinois EPA Bureau of Air. Pursuant to 35 Ill. Adm. Code 201.142 and 143 this project requires a construction permit prior to construction and an operating permit prior to operation of the emission units referenced in the above referenced permit application. You may apply for both a construction and operating permit simultaneously. If you have any questions regarding these requirements, contact the Illinois EPA's bureau of Air- Division of Air Pollution Control – Permit Section at 217/ 782-2113
  
18. Management of Unauthorized Waste
  - a. Landscape waste found to be mixed with municipal waste will be removed the same day and transported to a facility that is operating in accordance with the Act, Title V, Section 21.
  - b. Lead-acid batteries will be removed the same day and transported either to a drop-off center handling such waste, or to a lead-acid battery retailer.
  - c. Potentially infectious medical waste (PIMW) found to be mixed with municipal waste shall be managed in accordance with 35 IAC, Subtitle M.
  - d. Tires found to be mixed with municipal waste shall be removed and managed in accordance with 35 IAC, Part 848.
  - e. White good components mixed with municipal waste shall be removed and managed in accordance with Section 22.28 of the Act.
  - f. This facility is prohibited from disposing any waste containing polychlorinated biphenyls (PCBs) in concentration greater than allowed, pursuant to the Toxic Substance Control Act (TSCA).

- g. No liquid waste (special or non-special) as determined by the Paint Filter Test shall be disposed unless the waste is from a household or is in a small container similar in size to that normally found in household waste and the container was designed for use other than storage. The prohibition applies to on-site generated wastes except for leachate or gas condensate that is specifically approved by permit for recirculation into the landfill. However, minor amounts of liquid resulting from precipitation (rain, sleet, hail or snow) during transport and disposal operations shall not be construed as a violation of this condition.
  - h. In accordance with Section 21.6 of the Act, beginning July 1, 1996, no owner or operator of a sanitary landfill shall accept liquid used oil for final disposal that is discernable in the course of prudent business operation.
  - i. After the unauthorized waste has been removed, a thorough cleanup of the affected area will be made according to the type of unauthorized waste managed. Records shall be kept for three (3) years and will be made available to the Illinois EPA.
  - j. In accordance with Subsection 95(b) of the Electronics Products Recycling and Reuse Act (415 ILCS 150), *beginning January 1, 2012, no person may knowingly cause or allow the disposal of a CED [covered electronic device] or any other computer, computer monitor, printer, television, electronic keyboard, facsimile machine, videocassette recorder, portable digital music player, digital video disc player, video game console, electronic mouse, scanner, digital converter box, cable receiver, satellite receiver, digital video disc recorder, or small-scale server in a sanitary landfill, except as may be allowed by a waiver obtained pursuant to Subsection 95(e) of the Electronics Products Recycling and Reuse Act.*
19. The use of steel slag as road base material shall be subject to the following conditions:
- a. The slag shall undergo all appropriate testing to ensure that it is non-hazardous;
  - b. The slag shall not contribute to a malodor. If the slag becomes odiferous, then it shall be removed and be disposed of at the active face immediately;
  - c. All water coming in contact with the slag shall be treated as leachate and not runoff; and
  - d. No stockpiling of slag is allowed. All slag received each day must be used either as road base or disposed of at the active face.

III. GENERAL CONDITIONS

1. This permit is issued with the expressed understanding that no process discharge to Waters of the State or to a sanitary sewer will occur from these facilities except as authorized by a permit issued by the Bureau of Water Pollution Control.
2. Site surface drainage, during development, during operation and after the site is closed, shall be managed in accordance with the approved drainage control plan.
3. If changes occur which modify any of the information the Permittee has used in obtaining a permit for this facility, the Permittee shall notify the Illinois EPA. Such changes would include but not be limited to any changes in the names or addresses of both beneficial and legal titleholders to the herein-permitted site. The notification shall be submitted to the Illinois EPA within fifteen (15) days of the change and shall include the name or names of any parties in interest and the address of their place of abode; or, if a corporation, the name and address of its registered agent.
4. The Illinois EPA reserves the right to require installation of additional monitoring devices, to require analyses for certain parameters, to alter the sample parameters list and to modify the method of evaluating the monitoring results as necessary to fulfill the intent and purpose of the Environmental Protection Act or Pollution Control Board Regulations.
5. This permit is subject to review and modification by the Illinois EPA as deemed necessary to fulfill the intent and purpose of the Environmental Protection Act, and all applicable environmental rules and regulations.
6. Pursuant to 35 IAC, 813.201(a), any modifications to this facility shall be proposed in the form of a permit application and submitted to the Illinois EPA.
7. Any deviation from the dates specified in the special conditions of this permit (e.g., dates by which analyses must be performed, reports submitted, etc.) must be approved by the Illinois EPA in writing.
8. Pursuant to 35 IAC, 813.301, an application for permit renewal shall be filed with the Illinois EPA at least 90 days prior to the expiration date of this permit.

The Illinois EPA is in receipt of an application that purports to address this condition. Application Log No. 2012-471 was timely filed and currently under review and the current decision date is March 31, 2013.

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9. All elements of this permit, which do not require a significant modification authorizing operation pursuant to 35 IAC, 811.505(d) and 813.203, shall be implemented immediately. Examples of such elements include, but are not limited to, groundwater and leachate monitoring of existing monitoring points and the load checking programs required by 35 IAC, 811.323 and 811.401 - 811.406.
10. The operator shall take all measures necessary to ensure that the short-term parking for patrons of the Gateway International Race Track, approved by Modification No. 18 to Permit No. 1991-152-LFM, does not interfere with the proper operation or maintenance of the land fill.
11. The permittee(s) shall submit a 39(i) certification and supporting documentation within 30 days of the following events:
  - a. The owner or officer of the owner, or operator, or any employee who has control over operating decisions regarding the facility has violated federal, State, or local laws, regulations, standards, or ordinances in the operation of waste management facilities or sites; or
  - b. The owner or operator or officer of the owner, or operator, or any employee who has control over operating decisions regarding the facility has been convicted in this or another State of any crime which is a felony under the laws of this State, or conviction of a felony in a federal court; or
  - c. The owner or operator or officer of the owner, or operator, or any employee who has control over operating decisions regarding this facility has committed an act of gross carelessness or incompetence in handling, storing, processing, transporting, or disposing of waste.
  - d. A new person is associated with the owner or operator who can sign the application form(s) or who has control over operating decisions regarding the facility, such as corporate officer or a delegated employee.

#### IV. LEACHATE MANAGEMENT/MONITORING

1. The following monitoring points indicated in the following table are to be used in the Leachate Monitoring Program for this facility. These points, approved by Modification No. 20 to Permit No. 1991-152-LFM, are shown in the drawing entitled "Leachate Sampling Points" included in the addendum to Log No. 1998-170 received by the Illinois EPA on October 10, 1998. Application Log No. 2005-465 removed 16 monitoring points that no longer existed from the monitoring program.

Leachate Collection Manholes	
Applicant Designation	Illinois EPA Designation
L306	L306
L307	L307
L311	L322
L312	L312
L313	L313
L314	L314
L315	L315
L317	L317
L318	L318
L320	L320
L332	L332
L337	L337
L338	L338
L339	L339
L340	L340
L341	L341
L342	L342
L343	L343
L346	L346
L347	L347
L350	L350
L351	L351
L354	L354
L359	L359
L360	L360
L361	L361
L362	L362
L363	L362
L365	L365
L367	L367
L372	L372
L399	L399
L404	L404
L412	L412
L413	L413
L414	L414
L415	L415
L416	L416
L421	L421
L422	L422
L501	L501

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2. Pursuant to 35 IAC, Sections 811.309(g), 722.111 and 721, Subpart C, leachate monitoring (i.e., sampling, measurements and analysis) must be conducted in accordance with the permit for this facility. The concentrations of values for the parameters contained in List L1 (below) must be determined on a semi-annual basis and the results must be submitted with the groundwater reports.

Condition VII.3. presents the sampling, testing and reporting schedules in tabular form. Leachate monitoring at each monitoring point shall continue as long as groundwater monitoring at this landfill is necessary pursuant to 35 IAC, Section 811.319(a)(1)(C).

## LIST L1

<u>Leachate Monitoring Parameters</u>	<u>STORET</u>
pH (S.U.)	00400
Elevation Leachate Surface (ft. MSL)	71993
Bottom of Well Elevation (ft. MSL)	72020
Leachate Level from Measuring Point (ft.)	72109
Arsenic (total)	01002
Barium (total)	01007
Cadmium (total)	01027
Iron (total)	01045
Ammonia Nitrogen – N (mg/L)	00610
Bacteria (Fecal Coliform) (FCBR/100 mL)	31616
Biochemical Oxygen Demand (BOD5) (mg/L)	00310
1,1,1,2-Tetrachloroethane	77562
1,1,1-Trichloroethane	34506
1,1,2,2-Tetrachloroethane	34516
1,1,2-Trichloroethane	34511
1,1-Dichloroethane	34496
1,1-Dichloroethylene	34501
1,1-Dichloropropene	77168
1,2,3-Trichlorobenzene	77613
1,2,3-Trichloropropane	77443
1,2,4-Trichlorobenzene	34551
1,2,4-Trimethylbenzene	77222
1,2-Dibromo-3-Chloropropane	38760
1,2-Dichloroethane	34531
1,2-Dichloropropane	34541

## LIST L1

<u>Leachate Monitoring Parameters</u>	<u>STORET</u>
1,3,5-Trimethylbenzene	77226
1,3-Dichloropropane	77173
1,3-Dichloropropene	34561
1,4-Dichloro-2-Butene	73547
1-Propanol	77018
2,2-Dichloropropane	77170
2,4,5-tp (Silvex)	39760
2,4,6-Trichlorophenol	34621
2,4-Dichlorophenol	34601
2,4-Dichlorophenoxyacetic Acid (2,4-D)	39730
2,4-Dimethylphenol	34606
2,4-Dinitrotoluene	34611
2,4-Dinitrophenol	34616
2,6-Dinitrotoluene	34626
2-Chloroethyl Vinyl Ether	34576
2-Chloronaphthalene	34581
2-Chlorophenol	34586
2-Hexanone	77103
2-Propanol (Isopropyl Alcohol)	81310
3,3-Dichlorobenzidine	34631
4,4-DDD	39310
4,4-DDE	39320
4,6-Dinitro-O-Cresol	34657
4-Bromophenyl Phenyl Ether	34636
4-Chlorophenyl Phenyl Ether	34641
4-Methyl-2-Pentanone	78133
4-Nitrophenol	34646
Acenaphthene	34205
Acetone	81552
Alachlor	77825
Aldicarb	39053
Aldrin	39330
Alpha - BHC	39337
Aluminum	01105
Anthracene	34220

## LIST L1

<u>Leachate Monitoring Parameters</u>	<u>STORET</u>
Antimony	01097
Atrazine	39033
Benzene	34030
Benzo (a) Anthracene	34526
Benzo (a) Pyrene	34247
Benzo (b) Fluoranthene	34230
Benzo (ghi) Perylene	34521
Benzo (k) Fluoranthene	34242
Beryllium (total)	01012
Beta – BHC	39338
Bicarbonate (mg/L as CaCO <sub>3</sub> )	00425
Bis (2-Chloro-1-Methylethyl) Ether	73522
Bis (2-Chloroethoxy) Methane	34278
Bis (2-Chloroethyl) Ether	34273
Bis (2-Ethylhexyl) Phthalate	39100
Bis(Chloromethyl) Ether	34268
Boron	01022
Bromobenzene	81555
Bromochloromethane	77297
Bromodichloromethane	32101
Bromoform	32104
Bromomethane	34413
Butanol	45265
Butyl Benzyl Phthalate	34292
Calcium (mg/L)	00916
Carbofuran	81405
Carbon Disulfide	77041
Carbon Tetrachloride	32102
Chemical Oxygen Demand (COD) (mg/L)	00335
Chlordane	39350
Chloride (mg/L)	00940
Chlorobenzene	34301
Chloroethane	34311
Chloroform	32106
Chloromethane	34418

## LIST L1

<u>Leachate Monitoring Parameters</u>	<u>STORET</u>
Chromium (total)	01034
Chrysene	34320
Cis-1,2-Dichloroethylene	77093
Cobalt (total)	01037
Copper (total)	01042
Cyanide (mg/L)	00720
DDT	39370
Delta - BHC	46323
Di-N-Butyl Phthalate	39110
Di-N-Octyl Phthalate	34596
Dibenzo (a,h) Anthracene	34556
Dibromochloromethane	32105
Dibromomethane	77596
Dichlorodifluoromethane	34668
Dichloromethane	34423
Dieldrin	39380
Diethyl Phthalate	34336
Dimethyl Phthalate	34341
Endosulfan I	34361
Endosulfan II	34356
Endosulfan Sulfate	34351
Endrin	39390
Endrin Aldehyde	34366
Ethyl Acetate	81585
Ethylbenzene	78113
Ethylene Dibromide (EDB)	77651
Fluoranthene	34376
Flourene	34381
Fluoride (mg/L)	00951
Heptachlor Epoxide	39420
Heptachlor	39410
Hexachlorobenzene	39700
Hexachlorobutadiene	39702
Hexachlorocyclopentadiene	34386
Hexachloroethane	34396

## LIST L1

<u>Leachate Monitoring Parameters</u>	<u>STORET</u>
Ideno (1,2,3-cd) Pyrene	34403
Iodomethane	77424
Isopropylbenzene	77223
Lead (total)	01051
Lindane	39782
Magnesium (total) (mg/L)	00927
Manganese (total)	01055
Mercury (total)	71900
Methoxychlor	39480
Methyl Ethyl Ketone	81595
Naphthalene	34696
Nickel (total)	01067
Nitrate-Nitrogen (mg/L)	00620
Nitrobenzene	34447
Oil. Hexane Soluble (or Equivalent) (mg/L)	00550 or 00552
Parathion	39540
Pentachlorophenol	39032
Phenanthrene	34461
Phenols	32730
Phosphorous (mg/L)	00665
Polychlorinated Biphenyls	39516
Potassium (mg/L)	00937
Pyrene	34469
Selenium	01147
Silver (total)	01077
Specific Conductance (umhos/cm)	00094
Sodium (mg/L)	00929
Styrene	77128
Sulfate (mg/L)	00945
Temperature of Leachate Sample (°F)	00011
Tert-Butylbenzene	77353
Tetrachlorodibenzo-p-Dioxins	34675
Tetrachloroethylene	34475
Tetrahydrofuran	81607

## LIST L1

<u>Leachate Monitoring Parameters</u>	<u>STORET</u>
Thallium	01059
Tin	01102
Toluene	34010
Total Organic Carbon (TOC) (mg/L)	00680
Total Dissolved Solids (TDS) (mg/L)	70300
Total Suspended Solids (TSS) (mg/L)	00530
Toxaphene	39400
Trans-1,2-Dichloroethylene	34546
Trans-1,3-Dichloropropene	34699
Trichloroethylene	39180
Trichlorofluoromethane	34488
Vinyl Acetate	77057
Vinyl Chloride	39175
Xylene	81551
Zinc (total)	01092
m-Dichlorobenzene	34566
m+p-Xylene	61283
n-Butylbenzene	77342
n-Nitrosodimethylamine	34438
n-Nitrosodiphenylamine	34433
n-Nitrosodipropylamine	34428
n-Propylbenzene	77224
o-Chlorotoluene	77275
o-Dichlorobenzene	34536
o-Nitrophenol	34591
o-Xylene	77135
p-Chlorotoluene	77277
p-Cresol	77146
p-Dichlorobenzene	34571
p-Isopropyltoluene	77356
sec-Butylbenzene	77350

\*If 2,4,5-Trichlorophenoxyacetic acid is detected in leachate, Tetrachlorodibenzo-p-Dioxins (Storet No. 34675)

Notes for all leachate monitoring parameters:

- a. The test methods for leachate monitoring shall be those approved in the USEPA's Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846), Third Edition or the equivalent thereof.
  - b. All parameters shall be determined from unfiltered samples.
  - c. The monitoring results should be reported in ug/l units unless otherwise indicated.
3. The schedule for leachate sample collection and submission of monitoring data is illustrated below:

<u>Sampling Period</u>	<u>Sampling Point</u>	<u>List</u>	<u>Report Due Date</u>
Oct- Nov 2010	L314 and L399	L1	January 15, 2011
April- May 2011	L315 and L404	L1	July 15, 2011
Oct- Nov 2011	L332 and L501	L1	January 15, 2012
April- May 2012	L361	L1	July 15, 2012
Oct- Nov 2012	L314 and L399	L1	January 15, 2013
April- May 2013	L315 and L404	L1	July 15, 2013
Oct- Nov 2013	L332 and L501	L1	January 15, 2014
April- May 2014	L361	L1	July 15, 2014
Oct- Nov 2014	L314 and L399	L1	January 15, 2015
April- May 2015	L315 and L404	L1	July 15, 2015
Oct- Nov 2015	L332 and L501	L1	January 15, 2016
April- May 2016	L361	L1	July 15, 2016

L1 - Leachate Monitoring Parameters

4. The leachate monitoring data must be submitted in an electronic format. The information is to be submitted as fixed-width text files formatted as found at [www.epa.state.il.us/land/waste-mgmt/groundwater-monitoring.html](http://www.epa.state.il.us/land/waste-mgmt/groundwater-monitoring.html).
5. The Elevation [of the] Leachate Surface (STORET No. 71993) shall be determined for all of the leachate manholes listed in Condition No. IV.1 on a quarterly basis and the results shall be reported to the Illinois EPA with the groundwater report. Furthermore, if the leachate surface elevation in any manhole indicates that there may be a malfunction in the leachate collection system, the system shall be inspected and repaired if necessary.
6. Pursuant to 35 IAC, Section 811.309(h)(1), leachate from this MSWLF landfill shall be collected and disposed beginning as soon as it is first produced and

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continuing for at least five (5) years after closure. Collection and disposal of leachate may cease only when the conditions described in 35 IAC, Section 811.309(h)(2) have been achieved. Leachate removed from this landfill shall be treated at an IEPA permitted facility in accordance with the leachate management plan proposed in Permit Application Log No. 1991-152-LFM.

7. Pursuant to 35 IAC, Sections 811.307(a) and (b), 811.308(a) and (h), and 811.309(a), throughout the period that the leachate collection/ management system must be operated, the maximum leachate head above the liner shall be one (1) foot.

V. GROUNDWATER MONITORING

1. The groundwater monitoring program must be capable of determining background groundwater quality hydraulically upgradient of and unaffected by the units and to detect, from all potential sources of discharge, any releases to groundwater within the facility. The Illinois EPA reserves the right to require installation of additional monitoring wells as may be necessary to satisfy the requirements of this permit.
2. The groundwater monitoring wells shall be constructed and maintained in accordance with the requirements of 35 IAC, 811.318(d) and designs approved by the Illinois EPA.
3. Groundwater monitoring wells shall be maintained in the locations shown in Drawing No. 1 of the October 22, 2012 addendum to Application Log No. 2012-062 and screened in the hydrogeologic unit(s) identified as potential contaminant pathway(s) within the uppermost aquifer. Wells G031 and G032 shall be installed such that the first samples may be gathered by the 1st quarter 1999 monitoring event.
4. Within 60 days of installation of any groundwater monitoring well, boring logs compiled by a qualified geologist, well development data and as-built diagrams shall be submitted to the Illinois EPA utilizing the enclosed "Well Completion Report" form. For each well installed pursuant to this permit, one form must be completed.
5. Groundwater monitoring wells shall be easily visible, labeled with their Illinois EPA monitoring point designations and fitted with padlocked protective covers.
6. In the event that any well becomes consistently dry or unserviceable and therefore requires replacement, a replacement well shall be installed within ten (10) feet of the existing well. The Illinois EPA shall be notified in writing at least 15 days prior to the installation of all replacement wells. A replacement well that is more

than ten feet from the existing well or which does not monitor the same geologic zone is considered to be a new well and must be approved via a significant modification permit.

- 7. All borings, wells and piezometers not used as monitoring points shall be abandoned in accordance with the standards in 35 IAC 811.316, and the decommissioning and reporting procedures contained in the Illinois Department of Public Health's (IDPH) Water Well Construction Code, 77 IAC, Part 920 (effective 1/1/92). In the event specific guidance is not provided by IDPH procedures, the enclosed Illinois EPA monitoring well plugging procedures shall be followed.
- 8. Groundwater sampling and analysis shall be performed in accordance with the requirements of 35 IAC 811.318(e) and the specific procedures and methods approved by the Illinois EPA.
- 9. The following monitoring points are to be used in the groundwater detection monitoring program for this facility:

Upgradient Wells

<u>Applicant Designation</u>	<u>Illinois EPA Designation</u>
G010	G010
G012	G012

Wells Within Zone of Attenuation

<u>Applicant Designation</u>	<u>Illinois EPA Designation</u>
G001	G001
G01S	G01S
G01D	G01D
G002	G002
G003	G003
G004	G004
G013	G013
G014	G014
G015	G015
G016	G016
G017	G017
G17S	G17S
G17D	G17D
G020	G020

G022	G022
G025	G025
G027	G027
G028	G028
G029	G029
G031	G031
G032	G032
G035	G035
G036	G036
G041 (P01S)	G041 (P01S)

Compliance Boundary Well(s)

<u>Applicant Designation</u>	<u>Illinois EPA Designation</u>
G021	G021
G026	G026

Bedrock Wells Within Zone of Attenuation

<u>Applicant Designation</u>	<u>Illinois EPA Designation</u>
G024	G024
G030	G030

Piezometer Wells

<u>Applicant Designation</u>	<u>Illinois EPA Designation</u>
P01D	P01D
P02S	P02S
P02D	P02D
P03S	P03S
P03D	P03D

Groundwater Extraction Wells

<u>Applicant Designation</u>	<u>Illinois EPA Designation</u>
EW-1	T601
EW-2	T602
EW-3	T603
----	T604
----	T605

----	T606
*T607	*T607

Surface Water Monitoring Points

<u>Applicant Designation</u>	<u>Illinois EPA Designation</u>
S101	S101

GMZ Wells

<u>Applicant Designation</u>	<u>Illinois EPA Designation</u>
G037	G037
G37M	G37M
G37D	G37D
G038	G038
G38M	G38M
G38D	G38D
#G039	#G039
#G39M	#G39M
#G39D	#G39D

\*Represents points added to the monitoring plan.  
 #Represents points deleted from the monitoring plan.

10. The monitoring program, approved by Permit No. 1991-152-LFM, shall continue for a minimum period of 30 years after closure and shall not cease until the conditions described in 35 IAC, 811.319(a)(1)(C) have been achieved. The operator shall collect samples from all of the monitoring points listed in Condition V.9, test the samples for the parameters listed in Condition V.12 (Lists G1 and G2), and report the results to the Illinois EPA, all in accordance with the schedule in Condition V.16. However, the operator shall monitor the two upgradient wells, G010 and G012, for the List G2 parameters on a biennial basis (on even years); the chemical parameters of List G1 shall be monitored on an annual basis; and the field parameters of List G1 shall continue to be monitored on a quarterly basis.
  
11. The applicable groundwater quality standards (AGQS) and the maximum allowable predicted concentrations (MAPC), as listed in Condition 12 below, are subject to the following conditions:
  - a. Temperature and the field parameters involving depth or elevation are not considered groundwater constituents and do not need AGQS.

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- b. For constituents which have not been detected in the groundwater, the practical quantitation limit (PQL) shall be used as the AGQS.
  - c. MAPCs are only applicable to those wells within the zone of attenuation.
  - d. AGQS are only applicable to upgradient/background and compliance boundary wells.
12. The AGQS and MAPC values for the parameters listed below are given in Attachment I of this permit letter.

## LIST G1 (Groundwater - Quarterly)

<u>FIELD PARAMETERS</u>	<u>STORETS</u>	<u>MAPC</u>	<u>AGQS</u>
pH (S.U)	00400		
Specific Conductance ( $\mu$ mhos/cm)	00094		
Temperature of Water Sample ( $^{\circ}$ F)	00011	----	----
Depth to Water (ft. below land surface)	72019	----	----
Depth to Water (ft. below measuring point)	72109	----	----
Elevation of Measuring Point (Top of casing ft. MSL)	72110	----	----
Elevation of Groundwater Surface (ft. MSL)	71993	----	----
Elevation of Bottom of Well (ft. MSL)	72020	----	----
<u>INDICATOR PARAMETERS</u>	<u>STORETS</u>	<u>MAPC</u>	<u>AGQS</u>
Ammonia (as Nitrogen) (Dissolved mg/L)	00608		
Barium (Dissolved, ug/L)	01005		
Arsenic (Dissolved ug/L)	01000		
Boron (Dissolved) ug/L	01020		
Chloride (Dissolved, mg/L)	00941		
Lead (Dissolved) ug/L	01049		
Iron (Dissolved) ug/L	01046		
Manganese (Dissolved) ug/L	01056		
Nitrate (as N) (Dissolved) mg/L	00618		
Phenol (Total) ug/L	32730		
Sulfate (Dissolved, mg/L)	00946		
Total Dissolved Solids (TDS, Dried at 180 $^{\circ}$ C) (Dissolved) mg/L	70300		
TOC (mg/L)	00680		
TOX	78115		
Zinc (Dissolved) mg/L	01090		
Vinyl Chloride	39175		

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1,1-Dichloroethane	34496
cis-1,2-dichloroethylene	77093
chlorobenzene	34301

NOTE:

- i. All parameters with the "(Dissolved)" label to the right shall be determined using groundwater samples which have been filtered through a 0.45 micron filter. All other parameters shall be determined from unfiltered samples.
- ii. Maximum allowable predicted concentrations (MAPCs) and applicable groundwater quality standards (AGQS) are given in ug/L except as otherwise noted. Also, the monitoring results should be reported in ug/L units unless otherwise indicated.

LIST G2 (Groundwater - Annual)

<u>PARAMETERS</u> (ug/L)	<u>STORETS</u>	<u>MAPC</u>	<u>AGQS</u>
<u>UNFILTERED</u> (totals)			
Acetone	81552		
Acrolein	34210		
Acrylonitrile	34215		
# Alachlor	77825		
# Aldicarb	39053		
Aldrin	39330		
Aluminum	01105		
Ammonia (as N) (mg/L)	00610		
Antimony	01097		
# Arsenic	01002		
# Atrazine	39033		
# Barium	01007		
# Benzene	34030		
Beryllium	01012		
BOD (mg/L)	00310		
# Boron	01022		
*Bromobenzene	81555		
*Bromochloromethane (chlorobromomethane)	77297		
*Bromodichloromethane	32101		
*Bromofom (Tribromomethane)	32104		
*Bromomethane (Methyl Bromide)	34413		
*n-Butylbenzene	77342		

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## LIST G2 (Groundwater - Annual) (cont.)

<u>PARAMETERS</u> (ug/L)	<u>STORETS</u>	<u>MAPC</u>	<u>AGQS</u>
<u>UNFILTERED</u> (totals)			
*sec-Butylbenzene	77350		
*tert-Butylbenzene	77353		
Butyl Benzyl Phthalate	34292		
# Cadmium	01027		
Calcium (mg/L)	00916		
# Carbofuran	81405		
Carbon Disulfide	77041		
# Carbon Tetrachloride	32102		
Chemical Oxygen Demand (COD) (mg/L)	00335		
# Chlordane	39350		
# Chloride (mg/L)	00940		
##*Chlorobenzene	34301		
*Chloroethane (Ethyl Chloride)	34311		
*Chloroform (Trichloromethane)	32106		
*Chloromethane (Methyl Chloride)	34418		
bis(chloromethyl)Ether	34268		
*o-Chlorotoluene	77275		
*p-Chlorotoluene	77277		
# Chromium	01034		
*Chlorodibromomethane (Dibromochloromethane)	32105		
# Cobalt	01037		
# Copper	01042		
p-Cresol	77146		
# Cyanide (mg/L)	00720		
DDT	39370		
*Dibromomethane (Methylene Bromide)	77596		
*m-Dichlorobenzene (1,3 Dichlorobenzene)	34566		
##*o-Dichlorobenzene (1,2 Dichlorobenzene)	34536		
# p-Dichlorobenzene (1,4 Dichlorobenzene)	34571		
*Dichlorodifluoromethane	34668		
*Dichloromethane (Methylene Chloride)	34423		
Dieldrin	39380		
Diethyl Phthalate	34336		
Dimethyl Phthalate	34341		
Di-N-Butyl Phthalate	39110		
# Endrin	39390		
bis(2-Ethylhexyl)Phthalate	39100		
##*Ethylbenzene	78113		

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## LIST G2 (Groundwater - Annual) (cont.)

<u>PARAMETERS</u> (ug/L)	<u>STORETS</u>	<u>MAPC</u>	<u>AGQS</u>
<u>UNFILTERED</u> (totals)			
*Ethylene Dibromide (EDB)(1,2-Dibromo ethane)	77651		
# Fluoride (mg/L)	00951		
# Heptachlor	39410		
# Heptachlor Epoxide	39420		
*Hexachlorobutadiene	39702		
Iodomethane (Methyl Iodide)	77424		
# Iron	01045		
Isophrone	34408		
*Isopropylbenzene	77223		
*p-Isopropyltoluene	77356		
# Lead	01051		
# Lindane	39782		
Magnesium (mg/L)	00927		
# Manganese	01055		
# Mercury	71900		
# Methoxychlor	39480		
*Naphthalene	34696		
# Nickel	01067		
# Nitrate-Nitrogen (mg/L)	00620		
Oil(Hexane-Soluble or Equivalent) (mg/L)	(00556)	00560,	00550
Parathion	39540		
# Pentachlorophenol	39032		
# Phenols	32730		
Phosphorus (mg/L)	00665		
# Polychlorinated Biphenyls	39516		
Potassium (mg/L)	00937		
*n-Propylbenzene	77224		
# Selenium	01147		
# Silver	01077		
Sodium (mg/L)	00929		
##*Styrene	77128		
# Sulfate (mg/L)	00945		
TOC (mg/L)	00680		
##*Tetrachloroethylene (Perchloroethylene)	34475		
Tetrahydrofuran	81607		
Thallium	01059		
##*Toluene	34010		
# Toxaphene	39400		

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## LIST G2 (Groundwater - Annual) (cont.)

<u>PARAMETERS</u> (ug/L)	<u>STORETS</u>	<u>MAPC</u>	<u>AGQS</u>
<u>UNFILTERED</u> (totals)			
# Trichloroethylene (Trichloroethene)	39180		
*Trichlorofluoromethane	34488		
Vanadium	01087		
# Vinyl Chloride	39175		
Vinyl Acetate	77057		
# Xylenes	81551		
m&p-Xylene	85795		
*o-Xylene	77135		
# Zinc	01092		
*1,1,1,2-Tetrachloroethane	77562		
# 1,1,1-Trichloroethane	34506		
*1,1,2,2-Tetrachloroethane	34516		
*1,1,2-Trichloroethane (Methylchloroform)	34511		
*1,1-Dichloroethane	34496		
# 1,1-Dichloroethylene	34501		
*1,1-Dichloropropene	77168		
*1,2,3-Trichlorobenzene	77613		
*1,2,3-Trichloropropane	77443		
*1,2,4-Trichlorobenzene	34551		
*1,2,4-Trimethylbenzene	77222		
*1,2-Dibromo-3-Chloropropane (DBCP)	38760		
##*cis-1,2-Dichloroethylene	77093		
##*trans-1,2-Dichloroethylene	34546		
# 1,2-Dichloroethane	34531		
##*1,2-Dichloropropane (Propylene Dichloride)	34541		
*1,3,5-Trimethylbenzene	77226		
*1,3-Dichloropropane	77173		
*1,3-Dichloropropene	34561		
cis-1,3-Dichloropropene	34704		
trans-1,3-Dichloropropene	34699		
trans-1,4-Dichloro-2-Butene	73547		
*2,2-Dichloropropane	77170		
# 2,4,5-TP (Silvex)	39760		
# 2,4-Dichlorophenoxyacetic Acid (2,4-D)	39730		
2-Butanone(Methyl Ethyl Ketone)	81595		
2-Hexanone (Methyl Butyl Ketone)	77103		
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	78133		

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NOTE:

- i. All parameters with the "(Dissolved)" label to the right shall be determined using groundwater samples which have been filtered through a 0.45 micron filter. All other parameters shall be determined from unfiltered samples.
  - ii. Maximum allowable predicted concentrations (MAPCs) and applicable groundwater quality standards (AGQS) are given in ug/L except as otherwise noted. Also, the monitoring results should be reported in ug/L units unless otherwise indicated.
  - iii. The preceding list of parameters (G2) includes all those found in Attachment 1 to Appendix C to LPC-PA2. The 51 constituents from 40 CFR 141.40 and the parameters from 35 IAC 620.410, designated with (\*) and (#) respectively are required to be monitored annually and may not be deleted.
13. Pursuant to 35 IAC, 811.319(a)(4)(A), any of the following events shall constitute an observed increase only if the concentrations of the constituents monitored can be measured at or above the practical quantitation limit (PQL):
    - a. The concentration of any constituent in List G1 of Condition V.12 shows a progressive increase over four (4) consecutive quarters.
    - b. The concentration of any constituent monitored in accordance with List G1 or List G2 of Condition V.12 exceeds the MAPC at an established monitoring point within the zone of attenuation.
    - c. The concentration of any organic constituent in List G2, monitored in accordance with Condition V.12 exceeds the preceding measured concentration at any established point.
    - d. The concentration of any constituent monitored at or beyond the edge of the zone of attenuation (compliance boundary) exceeds its AGQS, or pursuant to 811.320(d)(1) any constituent monitored at an upgradient well, exceeds its AGQS.
  14. For each round of sampling described in Condition 10 of this Section, the operator must determine if an observed increase has occurred within 45 days of the date the samples were collected. If an observed increase is identified, the operator must also notify the Illinois EPA in writing within 10 days and follow the confirmation procedures of 35 IAC, 811.319(a)(4)(B). Furthermore, the operator must complete the confirmation procedures within 90 days of the initial sampling event.

15. Within 90 days of confirmation of any monitored increase, the operator shall submit a permit application for a significant modification to begin an assessment monitoring program in order to determine whether the solid waste disposal facility is the source of the contamination and to provide information needed to carry out a groundwater impact assessment in accordance with 35 IAC 811.319(b).
16. The schedule for sample collection and submission of quarterly monitoring results is as follows:

<u>Sampling Quarter</u>	<u>Sampling Due</u>	<u>Report Due Date</u>
Jan-Feb (1st)	List G1	April 15
April-May (2nd)	List G1 and G2	July 15
July-Aug (3rd)	List G1	October 15
Oct-Nov (4th)	List G1	January 15

G1 - Routine Groundwater Parameters  
 G2 - Annual Groundwater Parameters

Note: The operator shall monitor the two upgradient wells, G010 and G012, for the List G2 parameters on a biennial basis; the chemical parameters of List G1 shall be monitored on an annual basis; and the field parameters of List G1 shall continue to be monitored on a quarterly basis.

17. Elevation of stick-up is to be surveyed and reported to the Illinois EPA:
  - a. When the well is installed (with the as-built diagrams),
  - b. Every two years thereafter, or
  - c. Whenever there is reason to believe that the elevation has changed.
18. All monitoring points shall be maintained in accordance with the approved permit application such that the required samples and measurements may be obtained.
19. Information required by Conditions V.10 and V.16 must be submitted in an electronic format. The information is to be submitted as fixed-width text files formatted as found at [www.epa.state.il.us/land/waste-mgmt/groundwater-monitoring.html](http://www.epa.state.il.us/land/waste-mgmt/groundwater-monitoring.html).
20. As originally proposed in Application Log No. 2011-070 and continued in Application Log No. 2012-062, the operator shall conduct an investigation in the areas of wells G002, G013, G014, G17S, G021, G022, G025, G026, and G027,

which are located in the southwestern corner of the facility. The investigation shall include installation of new monitoring points G041, P01X, P02X, P03X, P004, P005, and P006 as shown on Drawing 1 of the October 22, 2012 addendum to Application Log No. 2012-062.

At a minimum, P02S, P03S, P004, P005, and P006, along with existing piezometer P01S (to be renamed G041), shall be sampled and analyzed quarterly for List G1 parameters, as well as the parameters benzene, methylene chloride, trans-1,2-dichloroethylene, trichloroethylene, acetone, tetrahydrofuran, and tetrachloroethene. Groundwater elevations shall be measured at these new monitoring points, as well as at P01D, P02S, P02D, P03S, P03D, G002, G013, G014, G17S, G021, G022, G025, G026, and G027 to determine the effectiveness of the groundwater extraction trench. The monitoring wells and piezometers along the southern waste boundary of the GMZ will be evaluated prior to each quarterly sampling event for the presence of landfill gas, to determine if methane is present. If a piezometer shows the presence of methane, that piezometer will be sampled for the G1 and investigation parameter list.

Exceedences of any of the required parameters to be monitored in the investigation will require further investigation, including, but not limited to, additional borings downgradient to determine the rate and extent of groundwater impact. If groundwater impact is determined to be beyond the zone of attenuation, then the operator shall submit a map showing a revised groundwater management zone (GMZ). The results, conclusions, and any other supporting information regarding this assessment shall be submitted to the Illinois EPA in the form of an application for significant permit modification, no later than January 31, 2014.

21. The operator shall conduct assessment monitoring activities for the following parameters: ammonia(d), chloride(d), manganese(d), phenols(t), TDS, and TOX at well G036; chloride(d), manganese(d), phenols(t), and TOX at G035; and chlorobenzene at R004. Assessment monitoring shall include, but is not limited to, quarterly monitoring of parameters of concern (beginning 1<sup>st</sup> quarter 2012), as well as quarterly monitoring of the List G1 parameters, and semi-annual monitoring (beginning 2<sup>nd</sup> quarter 2012) of the 40 CFR 258 Appendix II and 35 Ill. Adm. Code 620.410 parameters, as required by 35 Ill. Adm. Code 811.319(b). The results and conclusions of the assessment monitoring shall be submitted to the Illinois EPA in the form of an application for significant permit modification, no later than February 28, 2013.

If it is concluded that the exceedences at these wells are a result of the facility, then, as stated in Condition VI.10 of the permit, the facility shall immediately implement the contingent remediation plan.

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The Illinois EPA is in receipt of an application that purports to address this condition. Application Log No. 2013-091 is currently under review and the current decision date is May 28, 2013.

NOTE: Conditions V.13, V.14 and V.15 are not applicable until the groundwater remediation program, approved by Permit No. 1991-152-LFM has been completed.

VI. CONDITIONS FOR ESTABLISHING THE GROUNDWATER MANAGEMENT ZONE (GMZ)

1. Failure to comply with this part shall be cause for termination of the Illinois EPA approval of the established groundwater management zone (GMZ).
2. At completion of remediation the groundwater standards shall be 1) the MAPCs within the zone of attenuation and 2) AGQS at and beyond the edge of the zone of attenuation.
3. The groundwater interceptor trench shall be maintained in accordance with plans and drawings submitted as Document Log No. 1992-015, Section 620, Appendix D, dated January, 1992, and received by the Illinois EPA on August 7, 1992.
4. The pumping rate of 100 gpm in the trench shall be maintained until groundwater remediation has been completed except for those occasions upon which pumping must be interrupted for purposes of maintenance, repair or monitoring.
5. Extraction wells shall be pumped at a rate 5.7 gpm and maintained except for those occasions upon which pumping must be interrupted for purposes of maintenance, repair or monitoring.
6. The statistical analysis method described in the application for permit, Log No. 1995-159 shall be performed quarterly to estimate the trend of the ground water quality. This statistical analysis shall evaluate the groundwater monitoring data from the downgradient groundwater monitoring wells listed in Condition V.9 that are within the GMZ for the following indicator parameters: Ammonia (as Nitrogen), Chloride, Sulfate, Total Organic Carbon (TOC), Vinyl Chloride, 1,1-Dichloroethane, cis-1,2-dichloroethylene, and chlorobenzene. Drawing 1 contained in the December 21, 2011 addendum to Application Log No. 2011-069 contains a facility map showing the South GMZ and the West GMZ areas.

As approved in Application Log No. 2009-413, wells G037, G37M, G37D, G038, G38M, G38D, G039, G39M, and G39D shall be monitored semi-annually for the parameters ammonia (as nitrogen), chloride, sulfate, total organic carbon (TOC), vinyl chloride, 1,1-dichloroethane, cis-1,2-dichloroethylene, chlorobenzene, 4-chloro-3-methylphenol (p-chloro-m-cresol), 2,4-D, 2,4,5-T, oil & grease,

tetrachloroethene, and trichloroethene, and annually for the 40 CFR 258 Appendix II and 35 IAC 620 parameters. Wells G037, G37M, G37D, G038, G38M, and G38D shall monitor the edge of the South GMZ.

At least one new well should be installed along the southern side, between wells G028 and the G37 well nest, to monitor the edge of the GMZ. Boring logs and well completion reports of the well installation(s) shall be submitted with the next remedial activities report.

The results of the monitoring at wells G037, G37M, G37D, G038, G38M, G38D, G039, G39M, G39D, and the new well(s) (if installed in time for sampling) shall be submitted to the Illinois EPA as part of the annual Evaluation of Remedial Activities, by March 1, 2012.

The Illinois EPA is in receipt of an application that purports to address this condition. Application Log No. 2012-064 is currently under review and the current decision date is April 30, 2013.

7. If in any given quarter it is determined that there are more cases of degradation than improvements, using the approved Trend Analysis Method, the permittee shall submit to the Illinois EPA within 90 days, an application for a significant modification reporting the results of the evaluation and addressing the requirements for implementing corrective action pursuant to 35 IAC 811.326(b).
8. Pursuant to Condition III.4., the Illinois EPA reserves the right to require a more appropriate statistical method if the characteristics of the groundwater data make the currently permitted Method unsuitable for analyzing trends in groundwater quality at this site.
9. Annually, commencing December 1, 2005, an Evaluation of Remedial Activities (ERA) shall be submitted to the Illinois EPA as part of an application for significant modification. As approved in Application Log No. 2009-561, the ERA shall be submitted as an application for significant modification no later than March 1 each year and shall include:
  - a. The results of the quarterly trend analysis required by Condition VI.6, described both narratively and with graphs.
  - b. Beginning December 1, 2010, the results of the groundwater monitoring at wells G037, G37M, G37D, G038, G38M, G38D, G039, G39M, and G39D, as referenced in Condition VI.6.
  - c. An assessment of the performance of the leachate extraction system.

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- d. A summary of quarterly leachate volumes extracted from the trench, the extraction wells and the entire site.
- e. A summary of the quarterly leachate level measurements in the leachate collection manholes.
- f. A summary of the quarterly water levels and for each quarter a potentiometric surface map to show the effects of leachate/groundwater extraction.
- g. A summary of remedial activities conducted at the site during the year.

The Illinois EPA is in receipt of an application that purports to address this condition. Application Log No. 2012-064 is currently under review and the current decision date is April 30, 2013.

- 10. Wells G035 and G036 shall be addressed in the ERA. Should impacts be found in these wells, the operator shall propose the implementation of the contingent remediation plan, installation of groundwater extraction wells, or propose an alternate plan if more appropriate.

VII. LANDFILL GAS MANAGEMENT/MONITORING

- 1. This permit approves the development and construction of an active gas collection/management system. As construction of each stage is completed, the applicant shall submit "as built" construction plans that fully describe the system as part of an acceptance report pursuant to 35 IAC 811.505(d). Note: This condition does not apply to those parts of the collection/management system permitted and constructed prior to issuance of Permit No. 1991-152-LFM.
- 2. The gas collection devices and gas monitoring probes shown in Permit Application, Log No. 1991-152, shall be installed and put into service within 90 days after final cover has been applied to the various areas in which they are located.
- 3. Gas monitoring, collection and disposal shall continue at least fifteen (15) years after closure and may be discontinued only after the conditions described in 35 IAC, 811.310(c)(4) have been achieved.
- 4. The gas monitoring probes both inside and outside the waste boundary shall be monitored on a monthly and an annual basis, respectively, for the following parameters:

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- a. Methane;
- b. Pressure;
- c. Nitrogen;
- d. Oxygen; and
- e. Carbon Dioxide

5. Pursuant to 35 IAC 811.311, in the event of any of the occurrences listed below, the operator must take the steps described in the last two paragraphs of this condition to ensure the protection of human health:

- a. A methane concentration greater than 50 percent of the lower explosive limit in air is detected in any of the below ground monitoring devices outside the waste boundary;
- b. A methane concentration greater than 50 percent of the lower explosive limit in air is detected during ambient air monitoring;
- c. A methane concentration greater than 25 percent of the lower explosive limit in air is detected in any building on or near the facility; or
- d. Malodors attributed to the unit are detected beyond the property boundary.

First, within two business days of the occurrence, the operator must notify the Illinois EPA in writing using the form LPC-591, pursuant to 35 IAC 811.311(b)(1). The notification must identify the location of the occurrence and describe its nature (quantitatively if possible). If the gas exceedance is corrected within 30 days, a follow up LPC-591 form may be submitted to the Illinois EPA describing the correction and providing confirmation test results.

Second, if a follow up LPC-591 is not submitted, then within 180 days of the occurrence, the operator must submit to the Illinois EPA an application for a significant modification that either: 1) proposes a gas collection/management system or modifications to the existing gas collection/management system, or 2) demonstrates that the facility is not the cause of the occurrence.

6. The ambient air monitoring devices shall be used to test the air downwind of the landfill for methane on an annual basis.
7. All buildings within the site boundaries shall be monitored continuously for methane.
8. The gas wells and probes shall be inspected for structural integrity and proper operation during routine monitoring events.

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9. The test results from gas monitoring for each year, ending on March 31, shall be submitted to the Illinois EPA in the annual report required by 35 IAC, 813.504.
10. In decommissioning the gas collection system and the gas monitoring probes within the waste boundaries, the pipes shall be cut off at least two (2) feet below the low permeability layer and plugged. Then the low permeability layer, the protective layer and the vegetation shall be restored in the excavated areas.
11. Please note that this project includes air emission units, which may require a permit from the Illinois EPA Bureau of Air. Pursuant to 35 Ill. Adm. Code 201.142 this project requires a construction permit prior to construction or modification of the emission units referenced in the above referenced permit application. If you have any questions regarding these requirements, contact the Illinois EPA's Bureau of Air - Division of Air Pollution Control - Permit Section at 217/782-2113.
12. Please note that this permit does not relieve the Permittee of the responsibility of complying with the provisions of the State of Illinois Rules and Regulations, 35 Ill. Adm. Code Subtitle B, Air Pollution Control, Chapter 1. The Illinois EPA's Bureau of Air (BOA)- Division of Air Pollution Control (DAPC) - Permit Section, has indicated that this project requires an Air Pollution Control Construction Permit, pursuant to 35 Ill. Adm. Code 201.142.

#### VIII. VACUUM HEAP SOIL REMEDIATION

1. Acceptance of waste for treatment in the Vacuum Heaps at the Milam Landfill is subject to the following conditions:
  - a. The Permittee shall obtain separate waste stream permit authorization numbers/permits for petroleum contaminated soils going specifically for treatment, rather than direct disposal. These authorization numbers must be used to complete manifests for all soils accepted for treatment in the Vacuum Heaps at the Milam Landfill.
  - b. The Permittee is prohibited from accepting any listed or characteristically hazardous waste.
  - c. The Permittee shall complete a TCLP analysis to insure that the waste is not hazardous as defined in 35 IAC Part 721, Subpart C. Soils specifically exempted in accordance with 35 IAC 721.104(b)(10) are not required to conduct TCLP analysis for the constituents identified in 35 IAC 721.124(b) as D018 through D043.

2. This facility must be operated in accordance with the approved permit application, subject to the following revisions:
  - a. All bio-remediation activities, including waste piles, equipment, etc. must be located within areas of the landfill underlain by composite liner and leachate collection systems which have been permitted as operational;
  - b. During construction of a waste pile, the pile must remain covered by an impermeable membrane at all times other than when soil is being added and/or when construction of a new lift begins;
  - c. The soil temperature in each waste pile must be maintained at or above 45°F during treatment;
  - d. Any soil pile which has not been treated to the specified cleanup objectives in Condition No. VIII.4. within 90 days after completion of construction of the pile shall be removed and disposed of as a special waste.
3. Each waste pile and its associated ancillary equipment (including the impermeable membrane cover, pumps, piping, etc.) must be inspected each operating day to ensure the unit is operating in accordance with this permit and the approved permit application.
4. The Permittee shall perform the following waste analysis on the treated soil to determine the effectiveness of the treatment process.
  - a. For soils to be used as final cover, a minimum of one (1) random (grab) sample shall be collected from each 100<sup>3</sup> yd of treated soil. Samples shall not be composited, and all samples shall be analyzed as follows:

- i. Gasoline Contaminated Soil Shall be Analyzed for the Following Constituents:

<u>Constituent</u>	<u>Soil Objective (mg/kg)</u>
Benzene	.005
Total BETX*	11.705

- ii. Diesel and Kerosene Contaminated Soil Shall be Analyzed for the Constituents in VIII (4)(a)(i) above and the Following:

<u>Constituent</u>	<u>Soil Objective (mg/kg)</u>
Naphthalene	.660
Acenaphthene	8.4
Anthracene	42.0
Fluoranthene	5.6
Fluorene	5.6
Pyrene	4.2
Acenaphthylene	
Benzo(g,h,i)perylene	
Phenanthrene	4.2 (Total)**
Benzo(a)anthracene	.0087
Benzo(a)pyrene	.015
Benzo(b)fluoranthene	.012
Benzo(k)fluoranthene	.011
Chrysene	.1
Dibenzo(a,h)anthracene	.02
Indeno(1,2,3-cd)pyrene	.029

\*Total BETX is the sum of the Benzene, Ethylbenzene, Toluene, and Xylene concentrations.

\*\*Total concentration for Acenaphthylene, Benzo(g,h,i)perylene, and Phenanthrene.

b. For soils to be used as daily cover, a minimum of one (1) random (grab) sample shall be collected from each 300 yd<sup>3</sup> of treated soil. Samples shall not be composited, and all samples shall be analyzed as follows:

i. Gasoline Contaminated Soil Shall be Analyzed for the Following Constituents:

<u>Constituent</u>	<u>Soil Objective (mg/kg)</u>
Benzene	.025
Total BETX*	13.525

ii. Diesel, Kerosene, and Fuel Oil Contaminated Soil Shall be Analyzed for the Constituents in VIII (4)(b)(i) above and the following:

<u>Constituent</u>	<u>Soil Objective (mg/kg)</u>
Naphthalene	.039
Acenaphthene	42.0

Anthracene	210.0
Fluoranthene	28.0
Fluorene	28.0
Pyrene	21.0
Acenaphthylene	
Benzo(g,h,i)perylene	
Phenanthrene	21.0 (Total)
Benzo(a)anthracene	.013
Benzo(a)pyrene	.023
Benzo(b)fluoranthene	.018
Benzo(k)fluoranthene	.017
Chrysene	.15
Dibenzo(a,h)anthracene	.03
Indeno(1,2,3-cd)pyrene	.043

- iii. For soils contaminated with anything other than gasoline, diesel fuel, or unused lubricating oils (i.e. used oils), the following parameters must be added to the waste acceptance analysis:

Volatile Compounds

Chloromethane	10 ug/kg
Bromomethane	10
Vinyl chloride	10
Chloroethane	10
Methylene chloride	5
Acetone	10
Carbon disulfide	5
1,1-Dichloroethene	5
1,1-Dichloroethane	5
1,2-Dichloroethene (total)	5
1,2-Dichloropropane	5
Chloroform	5
1,2-Dichloroethane	5
2-Butanone	10
1,1,1-Trichloroethane	5
Carbon tetrachloride	5
Vinyl acetate	10
Dichlorobromomethane	5
cis-1,3-Dichloropropene	5
Trichloroethene	5
Benzene	5

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Chlorodibromomethane	5
1,1,2-Trichloroethane	5
trans-1,3-Dichloropropene	5
Bromoform	5
2-Hexanone	10
4-Methyl-2-pentanone	10
1,1,2,2-Tetrachloroethane	5
Tetrachloroethene	5
Toluene	5
Chlorobenzene	5
Ethylbenzene	5
Styrene	5
total Xylenes	5

## Base/Neutral Compounds

Compound	Soil SDL
Hexachloroethane	330 ug/kg
Bis (2-chloroethyl) ether	330
Benzyl alcohol	330
Bis (2-chloroisopropyl) ether	330
N-nitrosodi-n-propylamine	330
Nitrobenzene	330
Hexachlorobutadiene	330
2-Methylnaphthalene	330
1,2,4-trichlorobenzene	330
Isophorone	330
Naphthalene	330
4-Chloroaniline	330
Bis (2-chloroethoxy)methane	330
Hexachlorocyclopentadiene	330
2-Chloronaphthalene	330
2-Nitroaniline	1600
Acenaphthylene	330
3-Nitroaniline	1600
Acenaphthene	330
Dibenzofuran	330
Dimethylphthalate	330
2,6-Dinitrotoluene	330
Fluorene	330
4-Nitroaniline	1600
4-Chlorophenyl-phenyl ether	330
2,4-Dinitrotoluene	330

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Diethylphthalate	330
N-Nitrosodiphenylamine	330
Hexachlorobenzene	330
Phenanthrene	330
4-Bromophenyl-phenyl ether	330
Anthracene	330
Dibutylphthalate	330
Fluoranthene	330
Pyrene	330
Butyl benzyl phthalate	330
Bis (2-ethylhexyl) phthalate	330
Chrysene	330
Benzo (a) anthracene	330
3,3'-Dichlorobenzidene	660
Di-n-octyl phthalate	330
Benzo (b) fluoranthene	330
Benzo (k) fluoranthene	330
Benzo (a) pyrene	330
Indeno (1,2,3-cd) pyrene	330
Dibenzo (a,h) anthracene	330
Benzo (g,h,i) perylene	330
1,2-Dichlorobenzene	330
1,3-Dichlorobenzene	330
1,4-Dichlorobenzene	330
Benzoic Acid	1600 ug/kg
Phenol	330
2-Chlorophenol	330
2-Nitrophenol	1600
2-Methylphenol	330

## Acid Compounds

Compound	Soil SDL
2,4-dimethylphenol	330
4-methylphenol	330
2,4-Dichlorophenol	330
2,4,6-Trichlorophenol	330
2,4,5-Trichlorophenol	1600
4-Chloro-3-Methylphenol	330
2,4-Dinitrophenol	1600
2-Methyl-4,6-Dinitrophenol	1600
Pentachlorophenol	1600
4-Nitrophenol	1600

## Metal Compounds

Compound	Soil SDL
Arsenic	.05 mg/kg
Barium	2.0
Cadmium	.005
Chromium	.1
Lead	.0075
Mercury	.002
Selenium	.05
Silver	

## Pesticide Compounds

Compound	Soil SDL
alpha-BHC	8.0 ug/kg
beta-BHC	8.0
delta-BHC	8.0
Lindane (gamma-BHC)	8.0
Heptachlor	8.0
Aldrin	8.0
Heptachlor epoxide	8.0
Endosulfan I	8.0
4,4'-DDE	16.0
Dieldrin	16.0
Endrin	16.0
4,4'-DDD	16.0
Endosulfan II	16.0
4,4'-DDT	16.0
Endrin aldehyde	16.0
Endosulfan sulfate	16.0
Methoxychlor	80.0
alpha-Chlordane	80.0
gamma-Chlordane	80.0
Toxaphene	80.0
Arochlor-1016	160.0
Arochlor-1221	80.0
Arochlor-1232	80.0
Arochlor-1242	80.0
Arochlor-1248	80.0
Arochlor-1254	160.0
Arochlor-1260	160.0

SDL - Screening Detection Limit

If any of the compounds are detected above the Screening Detection Limits (SDLs) listed, the Permittee must request site specific cleanup objectives for these compounds from the Illinois EPA.

- c. Laboratory quality control data and results shall be included in the standard analytical report included in the operating record and submitted to the Illinois EPA upon request.
  - d. Chain of Custody forms for samples shall be included in the operating record.
  - e. The waste analysis shall be conducted by a laboratory which follows the QA/QC procedures identified in SW846, "Test Methods for Evaluating Solid Wastes."
5. Treated soils which meet the cleanup levels in accordance with Condition No. VIII.4. above are no longer considered to be a waste by the Illinois EPA when used on-site as daily or final cover. Off-site treatment, reuse or disposal of soils which were accepted at this facility for treatment is prohibited without prior Illinois EPA approval.
  6. Treated soil which does not meet the cleanup objectives for daily or final cover specified above must be re-treated and sampled in accordance with Condition No. VIII.4. above until cleanup objectives are met, subject to the time restriction given in Condition No. VIII.2.d. No soils which test above specified constituent concentrations may be used as daily or final cover.
  7. The Permittee shall record the location of the area of the facility where each treated pile of soil is deposited (used as cover). This information should be recorded on a facility map (drawn to a scale of 1" equal to not more than 200') and kept as part of the facility operating record.
  8. Final cover shall be limited to treated soil which has only been contaminated with gasoline and/or diesel fuel. No soils contaminated with a heavier waste petroleum fraction than #2 Diesel (i.e. oils) may be used as final cover.
  9. All vacuum heaps in operation at the time the landfill goes through closure, either premature or routine, shall be closed as part of closing the landfill. That is, the Illinois EPA shall not approve an affidavit certifying closure of the landfill unless all vacuum heaps have also been closed and properly decommissioned.

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10. This facility shall be operated in accordance with the Illinois EPA's Division of Air Pollution Control's permit number 93120123.

IX. MOBILE SOLIDIFICATION UNIT

1. Ten (10) working days prior to operation of the treatment unit, the permittee shall submit to the Illinois EPA the following documentations certified by an Illinois registered professional engineer so a pre-operational site inspection may be conducted.
  - a. The unit has been developed in accordance with the approved supplemental permit;
  - b. All secondary containment systems are in place.
2. The solidification shall take place in a mixing chamber equipped with secondary containment systems equivalent to the protection provided by a five (5) foot thick clay liner having a permeability no greater than  $1 \times 10^{-7}$  cm/sec or; leakproof, inspectable containers placed over the area of the landfill that has both a certified liner and an operating leachate collection system.
3. All special waste generators which send liquid waste to this facility for treatment and disposal must have an Illinois EPA generator number.
4. Special waste received at the facility for treatment or disposal shall be transported to the facility in accordance with Conditions X.1 through X.7 of this permit letter.
5. This permit approves the use of the following reagents and absorbents in the solidification process;
  - a. Reagents
    1. Cement Kiln Dust
    2. Lime Kiln Dust
    3. Portland Cement
    4. Lime
    5. Coal Combustion Ash
  - b. Absorbents
    1. Soil
    2. Petroleum contaminated soil (to be used only if waste has a  $5 \leq \text{pH} \leq 9$ )
    3. Sand

4. Foundry Sand
5. Oil Dry
6. Sawdust
7. Kitty Litter
8. Corn Cobs
9. Straw
10. Foundry Dust (as approved by Modification No. 25)
11. Processed scrap shredder waste.

All reagents and absorbents used must not exhibit any characteristic which would classify it as a hazardous waste. Use of materials other than the above list shall be subject to Illinois EPA approval.

Portland cement, purchased lime, uncontaminated soil and sand, unused oil dry, purchased kitty litter and uncontaminated straw are not considered waste. All other solidification agents are considered waste and must be managed as such, unless approval for their use as solidification agents has been obtained through one of the beneficial use determination (BUD) processes described in Sections 3.135 and 22.54 of the Act.

6. All wastes received at the site that fails the paint filter test and has a pH value outside the range of 5-9 ( $5 < \text{pH} < 9$ ) shall be treated in accordance with the facility's waste analysis plan.
7. The permittee shall not perform solidification if the compatibility test of the waste analysis plan determines incompatibility of the waste and reagent.
8. The following information shall be documented in the facility's operating record for each load of waste received for solidification:
  - a. Date the load was received;
  - b. Supplemental waste stream permit number (authorization number), if needed, and manifest number associated with the waste load;
  - c. Waste name;
  - d. Volume of waste received;
  - e. Generator name, location and Illinois EPA generator number or hauler number, if not a special waste;
  - f. Results of all analyses conducted on the load of waste;

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- g. Type of reagent and/or absorbent used to solidify the waste;
  - h. Documentation that the (treated/mixed) waste does not exhibit hazardous characteristics as defined in 35 IAC 721 Subpart C, e.g. result of the compatibility test done in accordance with the facility's waste analysis plan.
9. Each load of the solidified waste shall be sampled and tested by the paint filter test described in 35 IAC 729.320 prior to disposal. No wastes that yield fluid may be disposed.
  10. A complete TCLP analysis shall be performed on solidified waste resulting from a liquid waste with a  $\text{pH} \leq 5$  to determine that no hazardous waste has been produced.
  11. All liquid waste shall be stored in the staging area in covered, leakproof containers and processed through the solidification facility within seven (7) days of their receipt at the facility (i.e., maximum storage of 7 days).
  12. This permit allows the storage of reagents and absorbents to be used in the solidification process. However, storage shall not contribute to a violation of Section 21(a), Section 12, or Section 9 of the Illinois Environmental Protection Act (Act).
  13. Stored reagents and absorbents shall be covered and protected from precipitation events.
  14. All wash water generated from the solidification unit shall be managed in the same manner as leachate.
  15. The solidification unit may be operated from 3:00 a.m. to 12:00 a.m. (midnight), seven days a week.
  16. In the event of a spill, such materials and equipment necessary must be available on-site in order to prevent leachate migration from the containment area.
  17. This solidification unit shall be operated in accordance with the Illinois EPA's Bureau of Water and Air permits.
  18. The permittee may use Material Safety Data Sheets (MSDSs) in lieu of analytical analysis, for determination if over-the-counter pharmaceuticals can be accepted for solidification operations if the following condition is met:

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- a) The MSDS must contain all information on the particular analytical parameter required by the analytical analysis, Special Condition X.1, or an analysis must be conducted for that parameter.
19. The permittee may use ingredient list in lieu of analytical analysis, to determine if food products can be accepted for solidification if the following condition is met:
    - a) The ingredient list must contain all information on the particular analytical parameter required by the analytical analysis, Special Condition X.1, or an analysis must be conducted for that parameter.
  20. If the facility cannot meet either Special Condition IX.18 or IX.19, the facility must comply with the testing requirements of Special Condition X.1.
  21. Modification No. 46 approves the proposal to spray the dry waste streams used as reagents and/or absorbents in the solidification process with water and/or on-site generated leachate at the active face and over lined portion of the landfill as a dust control method. All runoff generated during the spraying process is to be managed as leachate.

It should be noted that this permit does not relieve the Permittee of the responsibility of complying with the provisions of the State of Illinois Rules and Regulations, 35 Ill. Adm. Code Subtitle B, Air Pollution Control, Chapter 1. The Permittee may be required to file reports and/or obtain applicable permits through the BOA's Division of Air Pollution Control.

This project includes air emission units, which may require a permit from the Illinois EPA Bureau of Air. Pursuant to 35 Ill. Adm. Code 201.142 this project may require a construction permit prior to construction or modification of the emission units referenced in the above referenced permit application. If you have any questions regarding these requirements, contact the Illinois EPA's Bureau of Air - Division of Air Pollution Control - Permit Section at 217/782-2113.

22. The following conditions shall apply when processed scrap shredder waste is stockpiled prior to use as a liquid waste solidification absorbent:
  - i. Processed scrap shredder waste shall be stockpiled in roll-off boxes or in tarped piles in an area of the landfill equipped with a bottom liner and leachate drainage layer and collection system that complies with the applicable standards in 35 IAC 811.
  - ii. Processed scrap shredder waste shall not be stockpiled on areas of the landfill that have received final cover. Processed scrap shredder waste shall not be stockpiled in an area of the landfill that would result in the exceedence of the permitted final waste elevations.

- iii. No more than 10,000 cy of processed scrap shredder waste is to be stockpiled at any one time. Processed scrap shredder waste is not to be stored more than 30 days.
- iv. The operator shall maintain a record of the stockpiles of the processed scrap shredder waste. The following information shall be recorded and maintained for each stockpile the generator's name and wastes profile number: the stockpile location, the quantity of soil received, the dates of receipt, the quantity of soil removed and date of removal. The record shall be maintained at the facility and shall be made available to the Illinois EPA or its delegate upon request.

X. SPECIAL WASTE ACCEPTANCE

- 1. The permittee is authorized to accept the wastes identified in Condition X.2. provided the generator complies with the following requirements:
  - a. The waste is analyzed in accordance with the requirements of Condition X.3. and complies with the acceptance criteria in the approved waste analysis plan;
  - b. The waste is delivered by an Illinois licensed special waste hauler or an exempt hauler as defined in 35 IAC 809.211; and
  - c. The waste is accompanied by a manifest, if required.
- 2. This facility is authorized to accept non-hazardous special waste that meets the definition of industrial process waste or pollution control waste as found in Sections 3.235 and 3.335, respectively, of the Illinois Environmental Protection Act.
- 3. The permittee shall obtain a completed Special Waste Preacceptance form (Attachment 1 to the permit letter for Modification No. 10) and a preacceptance analysis from each generator. In addition, the Annual Generator Special Waste and Recertification for Disposal of Special Waste form (Attachment 2 to the permit letter for Modification No. 10), which certifies the waste has not changed since the last analysis, must be completed and included in the operating record. A complete lab analysis must be provided with the exceptions listed below. Analysis shall be conducted using SW-846 test methods. The waste shall be reanalyzed at least every five years and must identify the actual concentration of each chemical constituent and state of each physical parameter. In all cases, a copy of the lab analysis (on lab letterhead and signed by a responsible party such as the person conducting the analysis or his supervisor) must be included in the

operating record with the generator's certification. The analysis may not be greater than one year old at the time. A new analysis is required if the composition of the waste changes (normal variations in waste composition are expected and are not included in this requirement). All waste must be analyzed as follows:

- a. The permittee shall conduct lab analyses to determine the concentrations of the following parameters.

- Paint Filter Test
- Flash point
- Sulfide (reactive)
- Cyanide (reactive)
- Phenol (total)
- pH
- Toxicity Characteristic Constituents

- b. For any waste streams containing a liquid phase(s) (fails paint filter), each phase must be analyzed for total organic halogen (TOX) using the test method specified in 35 IAC 729. Any waste containing 10,000 PPM or greater of TOX must be analyzed to determine the specific constituents, and their concentrations, that make up TOX. These constituents and their concentrations should be reported on the lab analysis report. Any liquid containing multiple phases must include individual analyses for each phase.
- c. The permittee shall conduct analysis for reactive sulfides ( $H_2S$ ) and cyanides (HCN). For waste containing 250 ppm or greater reactive cyanide or 500 ppm or greater reactive sulfide, it is presumed hazardous pursuant to 35 IAC 721.123(a)(5) unless specific information to show it does not present a danger to human health or the environment is provided. Analysis for total sulfide and/or cyanide may be substituted for reactive concentrations if they are equal to or less than 10 ppm. For wastes containing greater than 10 ppm reactive cyanide or reactive sulfide, the permittee shall not accept the waste unless the generator provides a signed and dated statement indicating the following:
  - i. The waste has never caused injury to a worker because of  $H_2S$  and/or HCN generation;
  - ii. That the OSHA work place air concentration limits for  $H_2S$  and/or HCN have not been exceeded in areas where the waste is generated stored or otherwise handled; and

- iii. That air concentrations of H<sub>2</sub>S and/or HCN above 10 ppm have not been encountered in areas where the waste is generated, stored or otherwise handled.
- d. The Permittee shall conduct analysis for phenols. If the total phenol concentration is greater than 1000 ppm, the waste will be required to be drummed and labeled, unless justification that this precaution is not necessary is provided. The justification must demonstrate skin contact is unlikely during transport or disposal.
- e. The Permittee shall conduct metals and organics analysis. You may utilize either procedure (i.e., total or TCLP), but any constituent whose total concentration exceeds the TCLP limit specified in 35 IAC 721.124 must be analyzed using the TCLP test and the results reported, unless an alternative test has been approved by the Illinois EPA. TCLP test methods must be in accordance with SW 846-1311.
- f. EXCEPTIONS:
  - i. The generator may certify that the eight pesticides (D012, D013, D014, D015, D016, D017, D020 and D031) would not reasonably be expected to be present in the waste based on the nature of the process generating the waste.
  - ii. Petroleum contaminated media and debris from LUST sites subject to corrective action regulation under 35 IAC, Parts 731 and 732 are temporarily exempt from complete TCLP analysis and the generator may limit analyses to flashpoint, paint filter test and TCLP lead.
  - iii. Off-specification unused or discarded commercial or chemical products may be accepted with an MDA sheet to determine the hazardous constituents present in lieu of analytical results, in accordance with Log No. 1995-301. If the product is contaminated other than with water or food grade product, full analyses shall be provided prior to acceptance of the waste.
- g. CLARIFICATIONS:

Notwithstanding the exception for manufactured gas plant waste contained in 35 IAC 721.124(a), no manufactured gas plant waste shall be disposed in a non-hazardous waste landfill, unless the waste: i) has been tested in accordance with subsection (e) of this special condition, and ii) the analysis has demonstrated that the waste does not exceed the regulatory



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- c. All containers must meet the definition of empty as described in 35 IAC. Section 721.107(b).
- d. Additionally, where possible, a copy of the material safety data sheets for products last present in the container shall be obtained and kept on file.
- e. For drums, at least one end must be removed and the drums must be crushed flat.

XI. CLOSURE/POST CLOSURE CARE

1. Upon completion of closure activities, the operator shall notify the Illinois EPA that the site has been closed in accordance with the approved closure plan utilizing the Illinois EPA's "Affidavit for Certification of Closure of Solid Waste Landfills permitted under 35 Ill. Adm. Code Parts 813 and 814."
2. Inspections of the closed landfill shall be conducted in accordance with the approved post-closure care plan. Records of field investigations, inspections, sampling and corrective action taken are to be maintained at the site and made available to Illinois EPA personnel. During the post-closure care period, these records are to be maintained at the office of the site operator.
3. If necessary, the soil over the entire planting area shall be amended with lime, fertilizer and/or organic matter. On sideslopes, mulch or some other form of stabilizing material is to be provided to hold seed in place and conserve moisture.
4. The minimum post-closure care period for this municipal solid waste landfill (MSWLF) is thirty years. When the post-closure care period has been completed, the operator shall notify the Illinois EPA utilizing the Illinois EPA's LPC-PA1 application.
5. The current cost estimate for closure and post- closure of the entire facility, provided in the application for Modification No. 53 to Permit No. 1991-152-LFM, pursuant to 35 IAC, 811.704, is \$22,478,900.00.
6. The operator shall increase the total amount of financial assurance so as to equal the current cost estimate within 90 days of an increase in the current cost estimate in accordance with 35 IAC, 811.701(b).
7. The owner or operator shall adjust the cost estimates for closure, post-closure, and corrective action for inflation on an annual basis during the following time periods:
  - a. The active life of the unit for the closure cost;

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- b. The active life and post-closure care period for the post-closure cost; or
- c. Until any corrective action program is completed in accordance with 35 IAC, Section 811.326, for the cost of corrective action.

If there are no changes to the cost estimates, certification for the above shall be provided to the Illinois EPA in the annual report. Any increase to the cost estimates shall be submitted as an application for significant modification to the permit, and shall be due the same time as the annual report.

## XII. REPORTING REQUIREMENTS

- 1. The annual certification shall be submitted to the Illinois EPA during operation and for the entire post-closure monitoring period, pursuant to 35 IAC 813.501. The certification shall be signed by the operator or duly authorized agent, shall be filed each year by May 1 of the following year, and shall state:
  - a. All records required to be submitted to the Illinois EPA pursuant to 35 IAC 858.207 and 858.308 have been timely and accurately submitted; and
  - b. All applicable fees required by the Act have been paid in full.
- 2. The annual report for each calendar year shall be submitted to the Illinois EPA by May 1 of the following year pursuant to 35 IAC 813.504. The annual report shall include:
  - a. Information relating to monitoring data from the leachate collection system, groundwater monitoring network, gas monitoring system and any other monitoring data specified in this permit, including:
    - 1) Summary of monitoring data for the calendar year;
    - 2) Dates of submittal of comprehensive monitoring data to the Illinois EPA during the calendar year;
    - 3) Statistical summaries and analysis of trends;
    - 4) Changes to the monitoring program; and
    - 5) Discussion of error analysis, detection limits and observed trends.
  - b. Proposed activities:

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- 1) Amount of waste expected in the next year;
  - 2) Structures to be built within the next year; and
  - 3) New monitoring stations to be installed within the next year.
- c. Any modification or significant modification affecting operation of the facility; and
- d. The signature of the operator or duly authorized agent as specified in 35 IAC 815.102.
3. The permittee shall submit a completed "Solid Waste Landfill Groundwater, Leachate, Facility and Gas Reporting Form" (LPC 591) as a cover sheet for any notices or reports required by the facility's permit for identification purposes. One copy of the LPC 591 form must accompany each report; however, except for electronically formatted data, the permittee must submit one (1) original and a minimum of two (2) copies of each report you submit to the Illinois EPA. The form is not to be used for applications for supplemental permit or significant modification.
4. All certifications, logs, reports, plan sheets and groundwater and leachate monitoring data required to be submitted to the Illinois EPA by the permittee shall be mailed to the following address:

Illinois Environmental Protection Agency  
Permit Section  
Bureau of Land -- #33  
1021 North Grand Avenue East  
Post Office Box 19276  
Springfield, Illinois 62794-9276

Except for electronic groundwater and leachate monitoring data, the operator shall provide the Illinois EPA the original and two (2) copies of all certifications, logs, reports and plan sheets required by this permit.

The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Act by filing a petition for a hearing within 35 days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed 90 days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

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For information regarding the request for an extension, please contact:

Illinois Environmental Protection Agency  
Division of Legal Counsel  
1021 North Grand Avenue East  
Post Office Box 19276  
Springfield, IL 62794-9276  
217/782-5544

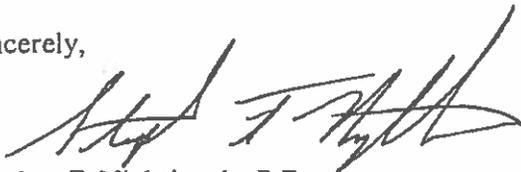
For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk  
State of Illinois Center  
100 West Randolph, Suite 11-500  
Chicago, IL 60601  
312/814-3620

Work required by this permit, your application or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This permit does not relieve anyone

from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Sincerely,



Stephen F. Nightingale, P.E.  
Manager, Permit Section  
Bureau of Land

<sup>PES</sup>  
SFN: SMS: 1630450001-811LF-SM57-2012352-Approval.doc  
<sub>CJLNS</sub>

Attachments: Standard Conditions  
Attachment I: MAPCs

cc: Barbara Hohlt, St. Clair County Health Department

Milam RDF  
 Site No. 1630450001  
 Permit No. 1991-152-LFM  
 Log Nos. 2012-352

ATTACHMENT I  
 MILAM RECYCLING AND DISPOSAL FACILITY  
 MAXIMUM ALLOWABLE PREDICED CONCENTRATIONS

Parameter	Storet	AGQS 100 FT	Distance of Well from Edge of Refuse						
			80 FT	70 FT	60 FT	40 FT	30 FT	10 FT	0 FT
ALKALINITY, mg/l	00410	404.1	414.6	419.8	425.1	435.6	440.8	451.4	456.6
ALUMINUM-TOTAL, ug/l	01105	200	205	208	210	216	218	223	226
ALUMINUM-DISS, ug/l	01106	200	205	208	210	216	218	223	226
AMMONIA, Nitrogen, mg/l	00608	1.79	1.84	1.86	1.88	1.93	1.95	2.00	2.02
ARSENIC-TOTAL, ug/l	01002	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
ARSENIC-DISS, ug/l	01000	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
BARIUM-TOTAL, ug/l	01007	693.7	711.7	720.7	729.8	747.8	756.8	774.9	783.9
BARIUM-DISS, ug/l	01005	949.9	974.6	986.9	999.3	1023.9	1036.3	1061.0	1073.3
BORON-TOTAL, ug/l	01022	132.5	135.9	137.6	139.3	142.8	144.5	148.0	149.7
BORON-DISS, ug/l	01020	324.6	333.0	337.2	341.5	349.9	354.1	362.6	366.8
CADMIUM-TOTAL, ug/l	01027	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
CADMIUM-DISS, ug/l	01025	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
CALCIUM-TOTAL, ug/l	00916	115,337	118,336	119,836	121,335	124,334	125,833	128,832	130,331
CALCIUM-DISS, ug/l	00915	113,093	116,033	117,503	118,974	121,914	123,384	126,325	127,795
CHLORIDE-TOTAL, ug/l	00940	28.5	29.2	29.6	30.0	30.7	31.1	31.8	32.2
CHLORIDE-DISS, ug/l	00941	28.5	29.1	29.4	29.8	30.5	30.9	31.6	32.0
CHROMIUM-TOTAL, ug/l	01034	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
CHROMIUM-DISS, ug/l	01030	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
COBALT-TOTAL, ug/l	01037	50	51.3	52.0	52.6	53.9	54.6	55.9	56.5
COBALT-DISS, ug/l	01035	50	51.3	52.0	52.6	53.9	54.6	55.9	56.5
COPPER-TOTAL, ug/l	01042	25	25.7	26.0	26.3	27.0	27.3	27.9	28.3
COPPER-DISS, ug/l	01040	25	25.7	26.0	26.3	27.0	27.3	27.9	28.3
CYANIDE-TOTAL, mg/l	00720	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
FLUORIDE-TOTAL, mg/l	00951	0.28	0.29	0.29	0.29	0.30	0.31	0.31	0.32
FLUORIDE-DISS, mg/l	00950	1	1.03	1.04	1.05	1.08	1.09	1.12	1.13
IRON-TOTAL, ug/l	01045	17,649	18,108	18,337	18,567	19,026	19,255	19,714	19,944
IRON-DISSOLVED, ug/l	01046	17,535	17,991	18,219	18,446	18,902	19,130	19,586	19,814
LEAD-TOTAL, ug/l	01051	3	3.1	3.1	3.2	3.2	3.3	3.4	3.4
LEAD-DISS, ug/l	01049	3	3.1	3.1	3.2	3.2	3.3	3.4	3.4
MAGNESIUM-TOTAL, ug/l	00927	37,707	38,687	39,177	39,668	40,648	41,138	42,119	42,609
MAGNESIUM-DISS, ug/l	00925	37,002	37,965	38,446	38,927	39,889	40,370	41,332	41,813
MANGANESE-TOTAL, ug/l	01055	316	324	328	332	340	344	352	357
MANGANESE-DISS, ug/l	01056	332	341	345	350	358	363	371	376
MERCURY-TOTAL, ug/l	71900	0.2	0.21	0.21	0.21	0.22	0.22	0.22	0.23
MERCURY-DISS, ug/l	71890	0.2	0.21	0.21	0.21	0.22	0.22	0.22	0.23
NICKEL-TOTAL, ug/l	01067	40	41.0	41.6	42.1	43.1	43.6	44.7	45.2
NICKEL-DISS, ug/l	01065	40	41.0	41.6	42.1	43.1	43.6	44.7	45.2
NITRATE-TOTAL, mg/l	00620	0.05	0.051	0.052	0.053	0.054	0.055	0.056	0.057
NITRATE-DISS, mg/l	00618	0.05	0.051	0.052	0.053	0.054	0.055	0.056	0.057

ATTACHMENT I

MILAM RECYCLING AND DISPOSAL FACILITY  
 MAXIMUM ALLOWABLE PREDICTED CONCENTRATIONS

Parameter	Storet	AGQS 100 FT	Distance of Well from Edge of Refuse						
			80 FT	70 FT	60 FT	40 FT	30 FT	10 FT	0 FT
PHENOL, ug/l		10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
PHOSPHORUS, mg/l	00665	0.83	0.85	0.86	0.87	0.89	0.9	0.92	0.93
POTASSIUM-TOTAL, ug/l	00937	5,000	5,130	5,195	5,260	5,390	5,455	5,585	5,650
POTASSIUM-DISS, ug/l	00935	5,000	5,130	5,195	5,260	5,390	5,455	5,585	5,650
SELENIUM-TOTAL, ug/l	01147	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
SELENIUM-DISS, ug/l	01145	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
SILVER-TOTAL, ug/l	01077	25	25.7	26.0	26.3	27.0	27.3	27.9	28.3
SILVER-DISS, ug/l	01075	25	25.7	26.0	26.3	27.0	27.3	27.9	28.3
SODIUM-TOTAL, ug/l	00929	11,026	11,312	11,456	11,599	11,886	12,029	12,316	12,459
SODIUM-DISS, ug/l	00930	10,934	11,218	11,360	11,502	11,787	11,929	12,213	12,355
SPEC CONDUCT FIELD	00094	830	851	862	873	895	905	927	938
SULFATE-TOTAL, mg/l	00945	75.6	77.6	78.6	79.6	81.5	82.5	84.5	85.5
SULFATE-DISS, mg/l	00946	72.7	74.6	75.6	76.5	78.4	79.4	81.3	82.2
TOTAL DISS SOLIDS, mg/l	70300	506	519	526	533	546	552	565	572
TOTAL ORG CARBON, mg/l	00680	4.36	4.47	4.53	4.58	4.70	4.75	4.87	4.92
TOTAL ORG HALOGEN, ug/l	78115	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
ZINC-TOTAL, ug/l	01092	20	20.5	20.8	21.0	21.6	21.8	22.3	22.6
ZINC-DISS, ug/l	01090	20	20.5	20.8	21.0	21.6	21.8	22.3	22.6
GROSS ALPHA		15	15.4	15.6	15.8	16.2	16.4	16.8	17.0
GROSS BETA		30	30.8	31.2	31.6	32.3	32.7	33.5	33.9
RADIUM 226	09501	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
RADIUM 228	11501	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
STRONTIUM 90	13501	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
TRITIUM	82126	1,200	1,231	1,247	1,262	1,294	1,309	1,340	1,356

- 100 FT WELLS - G021, G026
- 80 FT WELLS - G002
- 70 FT WELLS - R003, G022
- 60 FT WELLS - G027
- 40 FT WELLS - G014, G017, G17D, G17S, G020
- 30 FT WELLS - G016, G025
- 10 FT WELLS - G013
- 0 FT WELLS - G001, G01S, G004, G015, G028, G029

ATTACHMENT I  
MILAM RECYCLING AND DISPOSAL FACILITY  
MAXIMUM ALLOWABLE PREDICTED CONCENTRATIONS  
Concentration in ug/l

Parameter	Storet	AGQS 100 FT	Distance from Well to Edge of Refuse						
			80 FT	70 FT	60 FT	40 FT	30 FT	10 FT	0 FT
1,1,1,2-TETRACHLOROETHANE	77562	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,1,1-TRICHLOROETHANE	34506	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,1,2,2-TETRACHLOROETHANE	34516	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,1-DICHLOROETHANE	34496	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,1-DICHLOROETHENE	34501	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,1-DICHLOROPROPENE	77168	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,2,3-TRICHLOROENZENE	77613	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,2,3-TRICHLOROPROPANE	77443	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,2,4-TRICHLOROENZENE	34551	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,2,4-TRIMETHYLBENZENE	77222	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,2-DIBROMO-3-CHLOROPROPANE	38760	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,2-DIBROMOETHANE (EDB)	77651	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,2-DICHLOROENZENE	34536	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,2-DICHLOROETHANE	34531	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,2-DICHLOROETHENE (TOTAL)	77090	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,2-DICHLOROPROPANE	34541	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,3,5-TRIMETHYLBENZENE	77226	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,3-DICHLOROENZENE	34566	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,3-DICHLOROPROPANE	77173	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,3-DICHLOROPROPENE (TOTAL)	34561	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
1,4-DICHLOROENZENE	34571	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
2,2-DICHLOROPROPANE	77170	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
2,4,5-TP (Silvex)	39760	2	2.1	2.1	2.1	2.2	2.2	2.2	2.3
2,4-DICHLOROPHENOXYACETIC ACID	39730	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
2,4-DIMETHYLPHENOL	34606	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
2-BUTANONE (MEK)	81595	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
2-CHLOROTOLUENE	34536	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
2-HEXANONE	77103	50	51.3	52.0	52.6	53.9	54.6	55.9	56.5
DDT	39370	0.1	0.10	0.10	0.11	0.11	0.11	0.11	0.11
4-CHLOROTOLUENE	77146	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
4-ISOPROPYLTOLUENE	34723	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
ACETONE	81552	100	102.6	103.9	105.2	107.8	109.1	111.7	113.0
ALACHLOR		0.02	0.021	0.021	0.021	0.022	0.022	0.022	0.023
ALDICARB		0.02	0.021	0.021	0.021	0.022	0.022	0.022	0.023
ATRAZINE	39033	3	3.1	3.1	3.2	3.2	3.3	3.4	3.4
BENZENE	34030	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
BENZYL ALCOHOL	77147	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
BIS(2-ETHYLHEXYL)PHTHALATE	39100	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
BIS(CHLOROMETHYL)ETHER	34268	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
BROMOFORM	32014	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
BROMOMETHANE	34413	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
BUTYLBENZYLPHTHALATE	78721	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
CARBOFURAN	81405	0.02	0.021	0.021	0.021	0.022	0.022	0.022	0.023
CARBON TETRACHLORIDE	32102	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7

## ATTACHMENT I

MILAM RECYCLING AND DISPOSAL FACILITY  
MAXIMUM ALLOWABLE PREDICTED CONCENTRATIONS  
Concentration in ug/l

Parameter	Storet	AGQS 100 FT	Distance from Well to Edge of Refuse						
			80 FT	70 FT	60 FT	40 FT	30 FT	10 FT	0 FT
CHLORDANE	39350	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
CHLOROENZENE	34301	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
CHLOROETHANE	34311	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
CHLOROFORM	32106	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
CHLROMETHANE	34418	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
CIS-1,2-DICHLOROETHENE	77093	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
CRESOLS	79778	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
DI-N-BUTYLPHTHALATE	39110	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
DIBROMOCHLOROMETHANE	32105	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
DIBROMOMETHANE	77596	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
DICHLORODIFLUOROMETHANE	34668	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
DIELDRIN	39380	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
ENDRIN		0.1	0.10	0.10	0.11	0.11	0.11	0.11	0.11
ETHYLBENZENE	78113	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
HEXANES	81590	0.7	0.72	0.73	0.74	0.75	0.76	0.78	0.79
HEPTACHLOR	39410	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
HEPTACHLOR EPOXIDE	39420	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
HEXACHLOROBUTADIENE	39702	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
HEXANE SOLUBLE OIL	00550	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
IODOMETHANE	77424	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
ISOPROPYLBENZENE	77223	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
LINDANE (GAMMA-BHC)	39782	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
METHOXYCHLOR	39480	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
METHYLENE CHLORIDE	34418	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
N-BUTYLBENZENE	77342	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
N-PROPYLBENZENE	77224	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
NAPHTHALENE	34696	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
PARATHION	39540	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
PENTACHLOROPHENOL	39032	50	51.3	52.0	52.6	53.9	54.6	55.9	56.5
PHENOLS	32730	0.01	0.010	0.010	0.011	0.011	0.011	0.011	0.011
POLYCHLORINATED BIPHENYLS	39516	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
SEC-BUTYLBENZENE	77350	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
STYRENE	77128	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
TERT-BUTYLBENZENE	77353	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
TETRACHLOROETHENE	34475	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
TOLUENE	34010	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
TOXAPHENE	39400	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
TRANS-1,2-DICHLOROETHENE	34546	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
TRICHLOROETHENE	39180	10	10.3	10.4	10.5	10.8	10.9	11.2	11.3
TRICHLOROFLUOROMETHANE	34488	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
VINYL CHLORIDE	39175	2	2.1	2.1	2.1	2.2	2.2	2.2	2.3
M-XYLENE	77134	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
P-XYLENE	77133	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7

ATTACHMENT I

MILAM RECYCLING AND DISPOSAL FACILITY  
 MAXIMUM ALLOWABLE PREDICTED CONCENTRATIONS  
 Concentration in ug/l

Parameter	Storet	AGQS 100 FT	Distance from Well to Edge of Refuse						
			80 FT	70 FT	60 FT	40 FT	30 FT	10 FT	0 FT
O-XYLENE	77135	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7
XYLENE (TOTAL)	81551	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7

- 100 FT WELLS - G021, G026
- 80 FT WELLS - G002
- 70 FT WELLS - R003, G022
- 60 FT WELLS - G027
- 40 FT WELLS - G014, G017, G17D, G17S, G020
- 30 FT WELLS - G016, G025
- 10 FT WELLS - G013
- 0 FT WELLS - G001, G01S, G004, G015, G028, G029

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**Process Overview**

## Milam HBTU PROCESS OVERVIEW

Landfill Gas (LFG) is delivered to the plant inlet condensate sump from the existing LFG collection system. LFG continues on to the LFG collection blowers (Tuthills) at the High BTU facility.

The raw LFG first enters the inlet condensate sump 00-S-001 and then flows to the inlet coalescing separators (01-101-V-300) where entrained liquids are separated out. The LFG pressure is then boosted by the LFG collection blowers (01-101-B-100 and 01-111-B-100) and sent to the sulfur removal vessels. These vessels (02-TK-001 and 002) use a non-regenerative adsorption media to capture sulfur and are set up in a lead-lag flow configuration, allowing the plant to organize a media change out when breakthrough is detected on the lead vessel.

From the sulfur removal system, the LFG is cooled to remove moisture in the chilled glycol solution heat exchangers. From the chiller heat exchanger, the LFG flows through the liquid separator to allow free liquids to drop out. The LFG exits the separator and continues to the 1st Stage Compressors (Vilters).

The 1st stage compressors boost the gas pressure to 205 PSIG. The compressors are oil flooded single screw type units that have two stage gas/oil separation in order to remove the oil away from the LFG. The LFG is cooled to 105°F by an air cooled aftercooler located downstream of the 1st stage compressor gas/oil separator.

The next process is removal of CO<sub>2</sub>. A Pressure Swing Adsorber (PSA) unit on the pretreat section of the CO<sub>2</sub> Removal system removes any particulates, oil, or NMOCs, after which the gas passes into a two adsorber activated carbon polishing stage. The LFG flows through several particulate filters and enters two stages of selective membrane. In the first stage membrane, the CO<sub>2</sub> rich permeate stream passes out as tail gas to the thermal oxidizer and the methane rich stream continues through to the second stage membrane where additional CO<sub>2</sub> is removed to reach high BTU pipeline specification for CO<sub>2</sub> concentration. The second stage permeate along with the PSA blowdown stream contains enough methane that they are recycled to the feed gas compressor inlet to improve methane recovery. CO<sub>2</sub> concentration is controlled by adjusting the membrane backpressure using a modulating control valve.

After CO<sub>2</sub> removal the process gas enters the N<sub>2</sub> removal unit, where nitrogen is removed in a pressure swing process using a carbon molecular sieve media (CMS). Four vessels operate simultaneously at different stages of the cycle. Methane collects on the media sites while nitrogen passes through. The methane is recovered by a pressure swing process in which a vacuum pump is used to reduce pressure and extract as much methane as possible from the media in each adsorber vessel as the cycles complete. The methane rich stream from each vessel is collected and compressed by the recycle gas compressor in preparation for final boost compression to pipeline pressure. Pressure swings caused by staggered discharge of the four vessels are minimized by use of a buffer bag on the compressor suction.

From the recycle gas compressor discharge, the product gas enters an air cooled aftercooler before heading to the final product compressors to be boosted to pipeline pressure. The product gas is again cooled in another air cooled aftercooler before it is analyzed for quality and finally odorized before continuing into the transmission pipeline.

Custody metering and odorization control are the responsibility of the utility, Ameren.

Condensate collected from the discharge of the compressor's coalescers is treated by an oil/water separator before being sent to the landfill's condensate collection system. Condensate collected from the other processes goes directly to the Landfill's condensate collection system.



**Plans**



**Process Drawings**

VALVES		SPECIALTIES & FITTINGS			PIPE LINE TYPES & TAGGING CONVENTIONS				
NO = NORMALLY OPEN NC = NORMALLY CLOSED LO = LOCK OPEN LC = LOCK CLOSED									
NO NC 1 1 1 BUTTERFLY VALVE 2 2 2 CHECK VALVE 3 3 3 DIAPHRAGM VALVE 4 4 4 EXCESS FLOW VALVE 5 5 5 GATE VALVE 6 6 6 GLOBE VALVE 7 7 7 KNIFE GATE VALVE 8 8 8 NEEDLE VALVE 9 9 9 PINCH VALVE 10 10 10 PLUG VALVE 11 11 11 ROTARY VALVE 12 12 12 STOP CHECK VALVE 13 13 13 ANGLE VALVE 14 14 14 3-WAY VALVE 15 15 15 4-WAY VALVE	(SG) SIGHT GLASS (M) IN-LINE MIXER (T) STEAM TRAP (Y) Y-STRAINER WITH BLOW OFF VALVE (E) EXPANSION JOINT (H) FLEXIBLE HOSE (R) RUPTURE DISC (PRESSURE) (V) RUPTURE DISC (VACUUM) (F) FLAME ARRESTOR (A) VENT TO ATMOSPHERE (T) MIXING TEE (C) CONE STRAINER (CT) CONE STRAINER TEMPORARY	(D) DUPLEX STRAINER (IN-LINE FILTER) (B) BASKET STRAINER (SIMPLEX STRAINER IN-LINE FILTER) (S) VENT SILENCER (D) DRAIN (P) PULSATION DAMPER (C) PIPE CAP (H) HOSE CONNECTION (F) FLANGED (U) UNION (T) THREADED PLUG (E) EJECTOR OR EJECTOR	(C) CONCENTRIC REDUCER (E) ECCENTRIC REDUCER (Q) QUICK DISCONNECT (I) PIPE INSULATION (IT) PIPE INSULATION WITH HEAT TRACE (EQ) EQUIPMENT INSULATION (G) GAP IN-LINE	<b>PIPE LINE TYPES</b> ——— PROCESS PIPING - - - SECONDARY FLOW - - - EXISTING OR FUTURE PIPING AND EQUIPMENT					
					<b>PIPE LINE IDENTIFICATION</b> PIPE SPEC PIPE SERVICE CODE PIPE LINE DIAMETER PRESSURE CLASS RATING LAST (2) DIGITS OF P&ID PIPE LINE NUMBER P-U-351-150-0101				
					<b>PRESSURE CLASS RATINGS</b> 125 CLASS 125 150 CLASS 150 300 CLASS 300 600 CLASS 600 800 CLASS 800 1500 CLASS 1500 2500 CLASS 2500 SDR11 SDR17				
					<b>PIPE SPECIFICATION (MATERIAL)</b> AL20 ALLOY 20 BR5 BRASS CPVC CHLORINATED POLYVINYL CHLORIDE CS1 CS A33 ERW CS2 CS A108 SEAMLESS CU COPPER HAST C HASTELLOY C HDPE HIGH DENSITY POLYETHYLENE PP POLYPROPYLENE PVC POLYVINYL CHLORIDE SS1 304 SS2 316 SS3 OTHER				

TAGGING CONVENTIONS AND MODIFIERS		PIPING SERVICE CODES		PAGE CONNECTORS			
<b>VALVE IDENTIFICATION</b> SIZE VALVE BODY TYPE VALVE NUMBER LAST TWO (2) NUMBERS OF P&ID TYPE V = MANUAL VALVE CX = CHECK VALVE END CONNECTIONS (F) FLANGED		<b>PIPING INSULATION INDEX</b> INSULATION THICKNESS INSULATION MATERIAL INSULATION THICKNESS INSULATION MATERIAL INSULATION THICKNESS INSULATION MATERIAL TEMPERATURE TRACING TYPE (ELECTRICAL) TRACING TYPE (STEAM) <b>PIPE LINE CLASSIFICATIONS</b> TIE-IN POINT CHANGE IN SPEC FLANGED TIE-IN POINT <b>PIPING INSULATION INDEX</b> C CALCIUM SILICATE F FIBERGLASS G FOAM GLASS R FLEX RUBBER		A AMBIENT AIR AH ASH HANDLING AM AMMONIA (AQUEOUS OR ANHYDROUS) AR ARGON BA BOTTOM ASH BD BIODIESEL BFW BOILER FEED WATER CC CONDENSATE CF CHILLED GAS CHNG CHILLED LANDFILL GAS CHNR CHILLED WATER RETURN CHNS CHILLED WATER SUPPLY CL CHLORINE CLFG CLEANED LANDFILL GAS CO CARBON DIOXIDE CO2 CARBON DIOXIDE CRH COLD REHEAT CS CAUSTIC CTRW COOLING TOWER WATER RETURN CTWS COOLING TOWER WATER SUPPLY DF DEDRAMER DG DIGESTER GAS DW DEMINERALIZED WATER ED EQUIPMENT DRAIN EX EXHAUST F FIRE SUPPRESSION FA FLY ASH FD FORCED DRAFT FG FUEL GAS FGD FLUE GAS DESULFURIZATION FO FUEL OIL FS FEEDSTOCK FW FEED WATER GL GLYCOL GY GLYCERIN H HYDROGEN HC HYDROCARBON GASES HE HELIUM HRH HOT REHEAT HSO SULFURIC ACID HW HOT WATER IA INSTRUMENT AIR LA INDUCED DRAFT LFG LANDFILL GAS LO LUBRICATION OIL ME METHYL ESTERS MET METHANE MDM METHANOL MWU MAKE-UP WATER MV METHANOL VAPORS N NITROGEN NG NATURAL GAS O OXYGEN P PROCESS PA PLANT AIR PC PRIMARY COMBUSTION AIR PD PETROLEUM BIODIESEL PMW PROCESS MAKE-UP WATER PROP PROPANE PW POTABLE WATER (CITY WATER) RF REFRIGERANT RG REFINERY GAS RW RIVER WATER S STEAM SA SERVICE AIR SAN SANITARY WASTE WATER SCA SECONDARY COMBUSTION AIR SW STORM WATER SW SERVICE WATER TG TAIL GAS TW TREATED WATER V VENT WE WELL WATER WC WASTE GAS WW INDUSTRIAL WASTE WATER		<b>NOTE: LINE NUMBERS GO IN THE DIRECTION OF FLOW SO LINES GOING FROM ONE PAGE TO THE NEXT RETAIN THE SAME PIPE LINE IDENTIFICATION TAG.</b> TO SERVICE LOCATION STREAM NUMBER (TYP.) OFF SITE CONNECTOR EXISTING PIPE LINE TAG PIPE SERVICE CODE SHEET GRID COORDINATE DESTINATION P&ID NUMBER EXISTING DESTINATION (EQUIPMENT NUMBER) ORIGINATING P&ID NUMBER SHEET GRID COORDINATE PIPE SERVICE CODE ENTERING PIPE LINE TAG ENTERING ORIGINATING (EQUIPMENT NUMBER)	

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BY RENEWABLE ENERGY 1001 FARMER SUITE 4000, HOUSTON, TX 77002		MILAM LANDFILL HIGH BTU FACILITY PIPING & SPECIALTY PROCESS DIAGRAM LEAD SHEET		DRAWING NUMBER <b>PDL-0001</b>	
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A | B | C | D | E | F | G | H | J | K

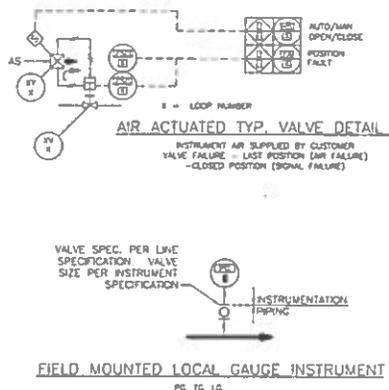
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**CONTROL & RELIEF VALVES**

BODY STYLE CAN DIFFER BASED ON APPLICATION AND PIPE LINE SIZE. GATE VALVE BODY STYLE SHOWN FOR CLARITY.



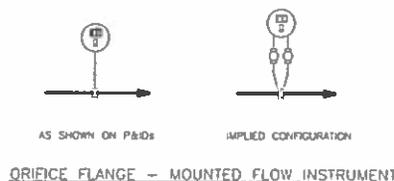
**INSTRUMENTATION DETAILS**



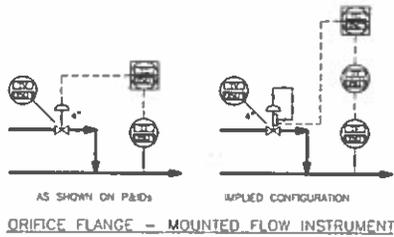
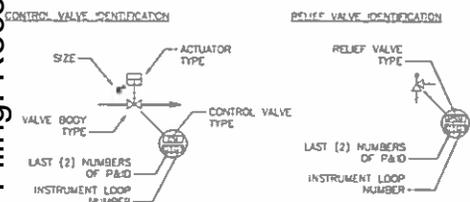
**AREA UNIT CLASSIFICATION**

PREFIX AREA NUMBER	AREA UNIT CLASSIFICATION
-01	WELL FIELD BLOWER SYSTEM
-02	H2S REMOVAL SYSTEM
-03	DEHYDRATION SYSTEM
-04	1ST STAGE COMPRESSION
-05	SELECTIVE GAS ADSORPTION
-06	CO2 REMOVAL SYSTEM
-07	O2/N2 REMOVAL SYSTEM
-08	PRODUCT GAS BOOST COMPRESSION & ODOORIZATION
-09	THERMAL OXIDIZER UNIT W/WASTE GAS REGEN PROCESSING
-10	ENCLOSED FLARES
-11	INSTRUMENT AIR UTILITIES
-12	CONDENSATE COLLECTION
-13	BUILDING HVAC

**ACTUATOR FAILURE STATES**



**TAGGING CONVENTION AND MODIFIERS**



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 1001 FARMER, SUITE 4000, HOUSTON, TX 77002  
 MILAM LANDFILL  
 HIGH BTU FACILITY  
 INSTRUMENT, CONTROLS &  
 AREA CLASS LEAD SHEET

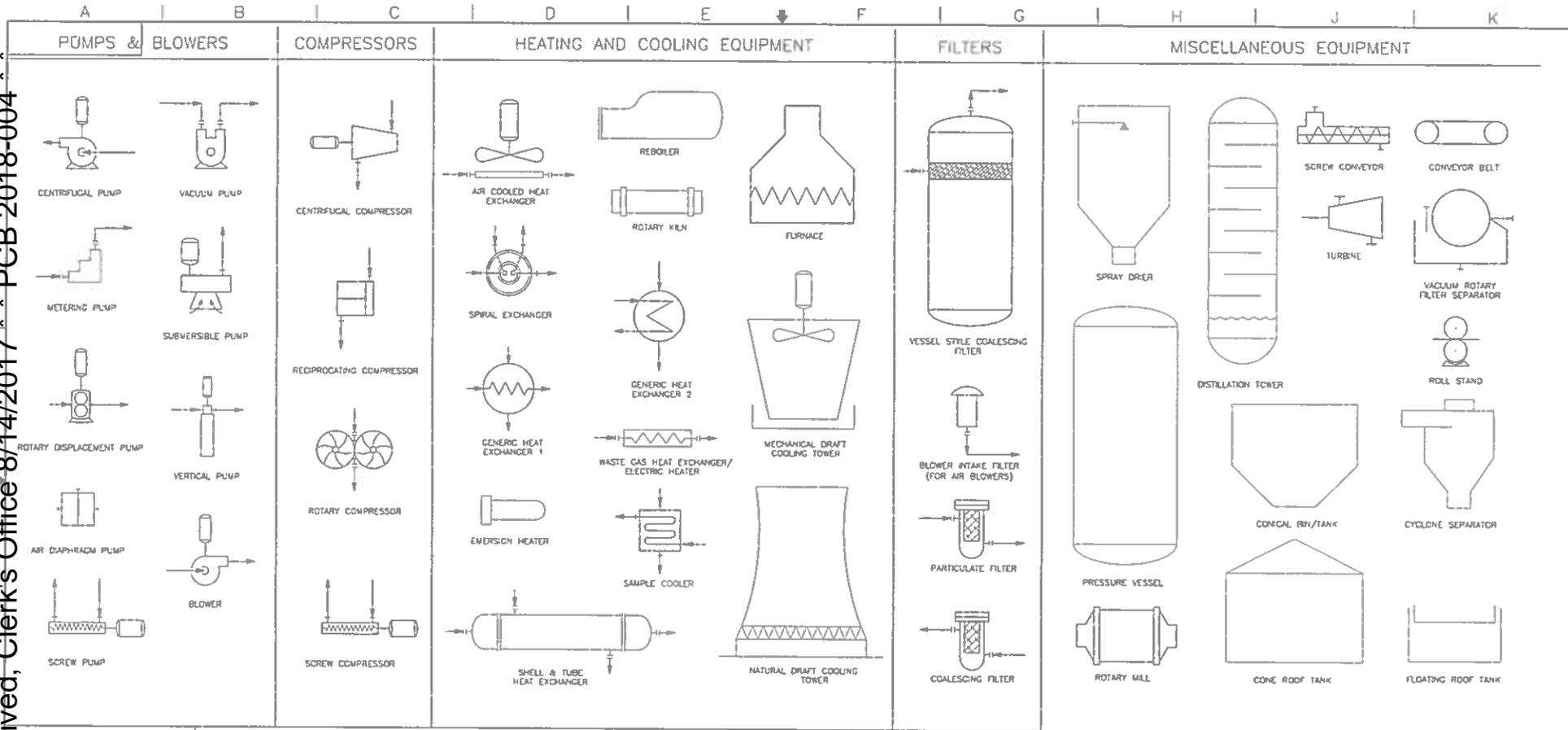
DRIVING BLANKET PDL-0003 REV. 0

NO.	REVISION	DATE	BY	CHKD	APP'D	DATE	REVISION	DATE	BY	CHKD	APP'D
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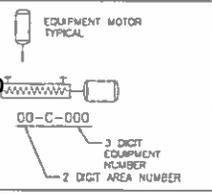


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102  
1  
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6



MISC EQUIPMENT



TAGGING CONVENTIONS AND MODIFIERS

TYPICAL PROCESS EQUIPMENT IDENTIFICATION LETTERS:			
AD AGITATOR	C COMPRESSOR	FP FILTER PRESS	IES ION EXCHANGE SYSTEM
AS AIR DRYER	CTC COMBUSTION TURBINE GENERATOR	FGD FLUE GAS DESULFURIZATION	IA INSTRUMENT AIR SYSTEM
BF BAC FILTER	CON CONDENSER	GB GEAR BOX	ISA INSTRUMENT AND SERVICE AIR SYSTEM
BH BACHOUSE	CV CONVEYOR	G GENERATOR	KOP KADCK OUT POT SYSTEM
BCV BELT CONVEYOR	DMPR DAMPER	CCA GRANULAR CARBON ADSORPTION SYSTEM	LTD LOW TEMPERATURE THERMAL DESORPTION SYSTEM
BFP BELT FILTER PRESS	DA DENATURATOR	HTR HEATER	MX MIXER OR AGITATOR
B BOILER	DAM DEMANERIZER	HX HEAT EXCHANGER	PV PRESSURE VESSEL
BL BLOWER	DF DUPLEX FILTER	HST HOST	P PLUMP
CC CENTRIFUGE	ESP ELECTROSTATIC PRECIPITATOR	HGM HUMIDIFIER	RD REVERSE OSMOSIS
CF CHEMICAL FEED SYSTEM	ENG ENGINE	INC INCHEATOR SYSTEM	SF SAND FILTER
CH CHILLER	EXH EXHAUSTER	IPS INCLINED PLATE SEPARATOR (LAMELLA)	SCR SELECTIVE CATALYTIC REMOVAL
CLF CLARIFIER	FAN FAN		
CA COMBUSTION AIR SYSTEM	F FILTER		



REV	REVISION	DATE	NO.	REV	DATE	BY	CHK	APP
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Venture Engineering & Construction

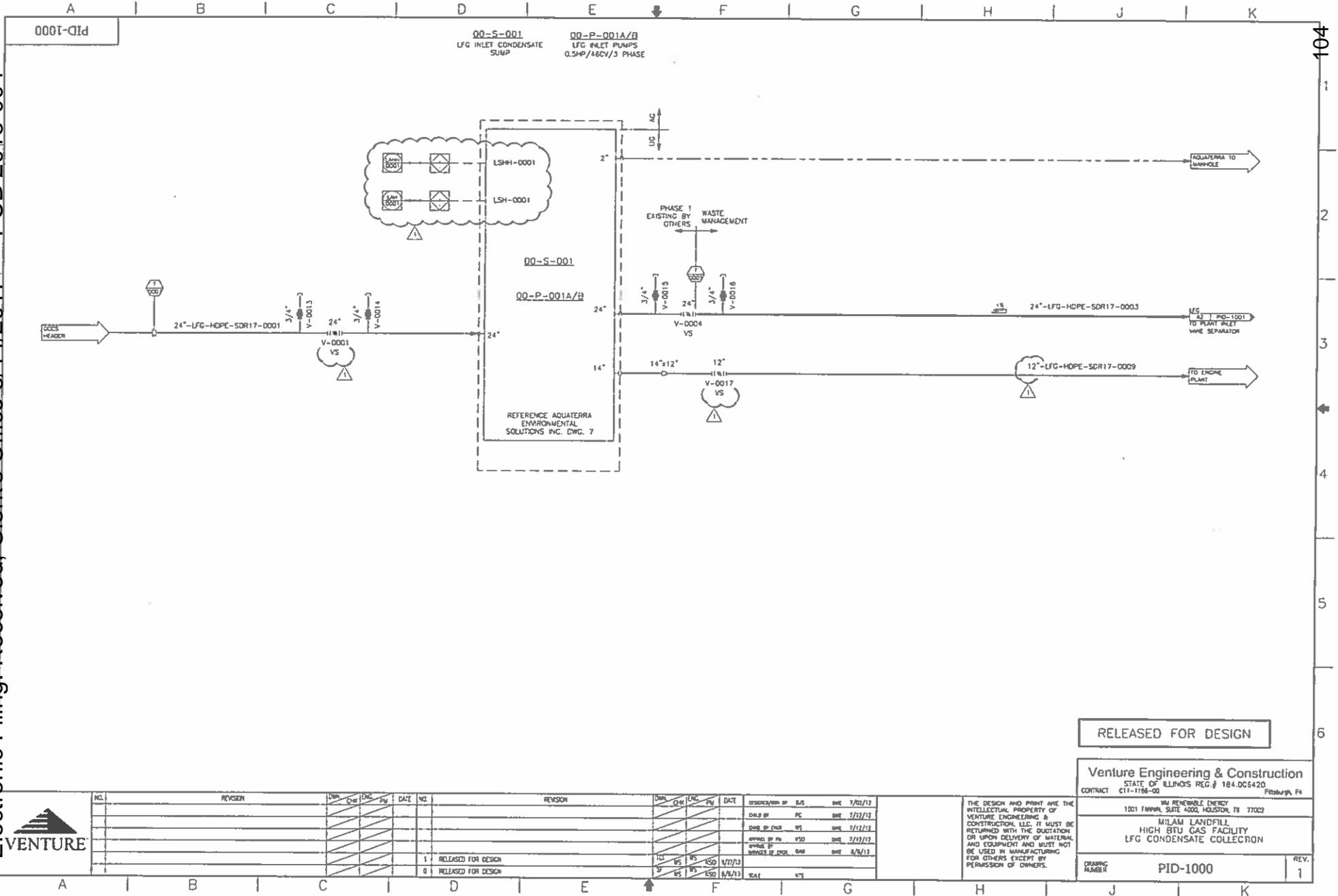
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MILAM LANDFILL  
PROCESS EQUIPMENT  
SYMBOLOLOGY LEAD SHEET

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DRAWING NUMBER **PDL-0004** REV. **0**



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0	RELEASED FOR DESIGN								

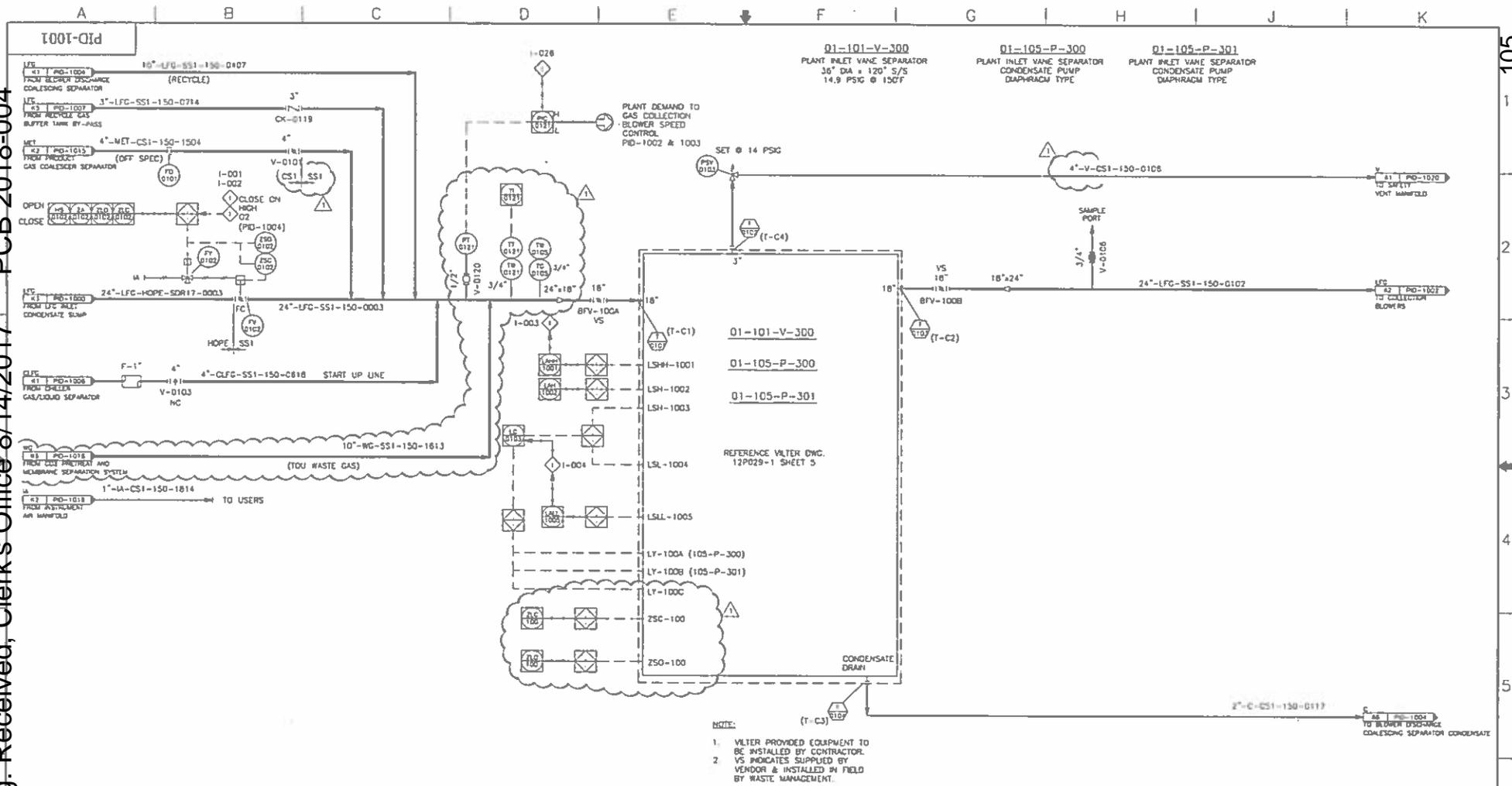
RELEASED FOR DESIGN

Venture Engineering & Construction  
 STATE OF ILLINOIS REG # 184.066420  
 CONTRACT C11-1188-02

100% RENEWABLE ENERGY  
 1001 FARMER SLATE 4000, HUNTSVILLE, TN 37002  
 MILAM LANDFILL  
 HIGH BTU GAS FACILITY  
 LFG CONDENSATE COLLECTION

DRAWING NUMBER: PID-1000  
 REV. 1

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- NOTE:
1. FILTER PROVIDED EQUIPMENT TO BE INSTALLED BY CONTRACTOR.
  2. VS INDICATES SUPPLIED BY VENDOR & INSTALLED BY FIELD BY WASTE MANAGEMENT.

RELEASED FOR DESIGN

Venture Engineering & Construction  
 STATE OF ILLINOIS REG # 184.006420  
 CONTRACT 011-1116-00 Pittsburgh, PA

IN RENEWABLE ENERGY  
 1001 FANNIN SUITE 4000, HOUSTON, TX 77002  
 MILAM LANDFILL  
 HIGH BTU GAS FACILITY  
 PLANT INLET VANE SEPARATOR

DRAWING NUMBER PID-1001 REV. 1

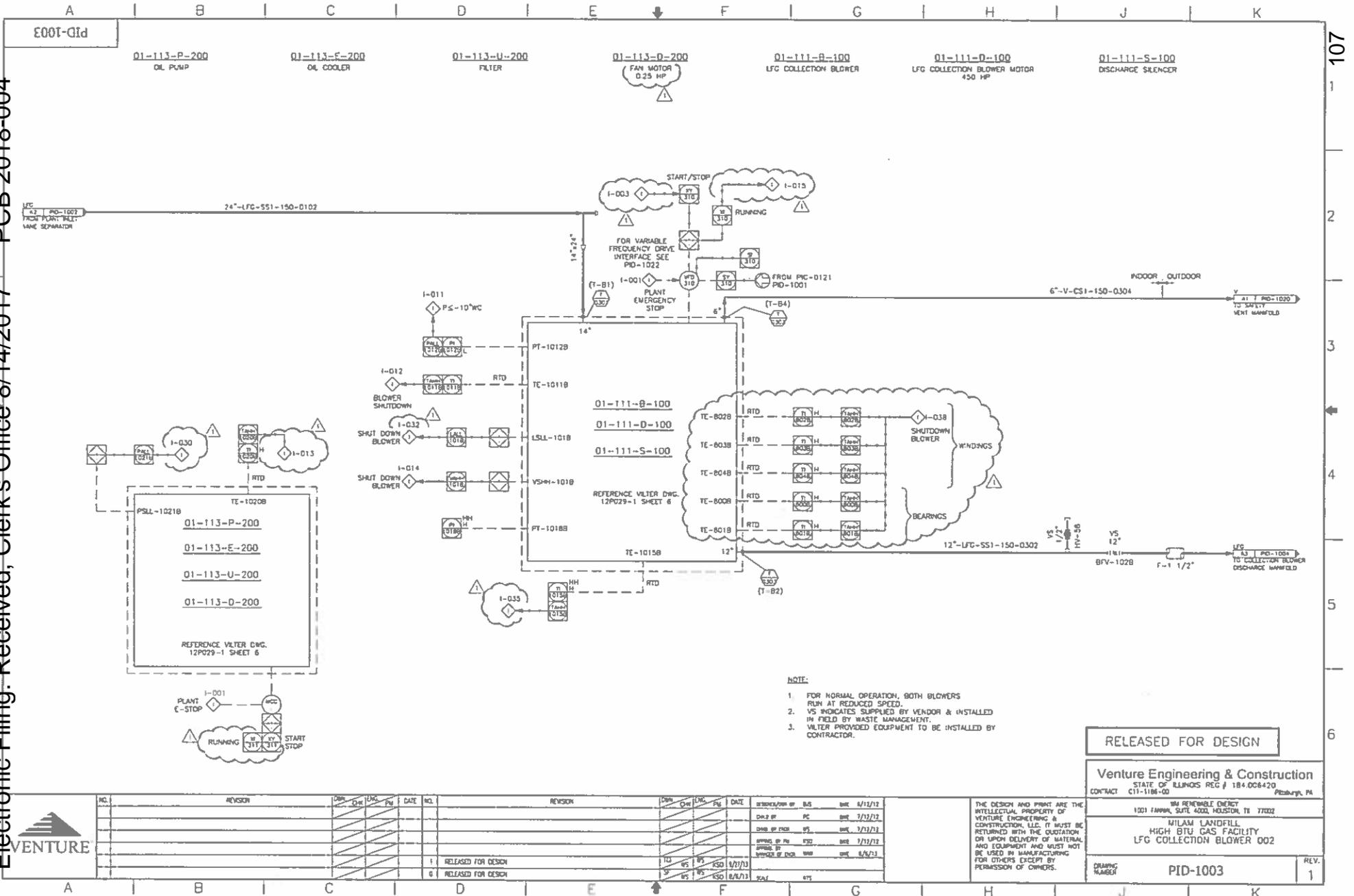


NO.	REVISION	DATE	NO.	REVISION	DATE	NO.	REVISION	DATE
1	RELEASED FOR DESIGN	6/12/12	1	RELEASED FOR DESIGN	6/12/12	1	RELEASED FOR DESIGN	6/12/12
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5	RELEASED FOR DESIGN	8/6/13	5	RELEASED FOR DESIGN	8/6/13	5	RELEASED FOR DESIGN	8/6/13
6	RELEASED FOR DESIGN	8/6/13	6	RELEASED FOR DESIGN	8/6/13	6	RELEASED FOR DESIGN	8/6/13

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Electronic Filing: Received, Clerk's Office 8/14/2017 \* \* PCB 2018-004



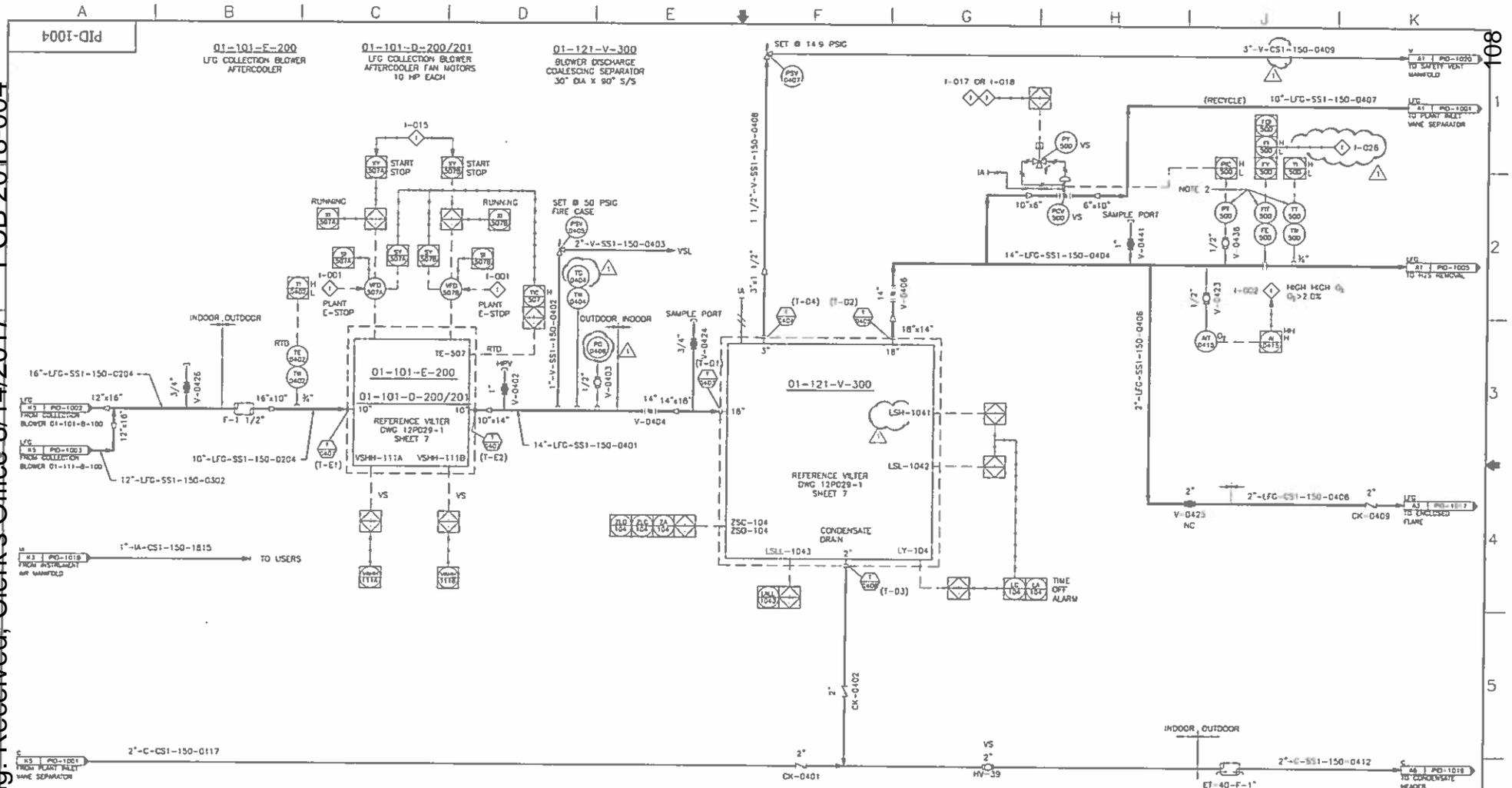
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RELEASED FOR DESIGN

**Venture Engineering & Construction**  
 STATE OF PENNSYLVANIA REG # 184.DC6420  
 CONTRACT C11-1186-00

184 RENEWABLE ENERGY  
 1001 FARMER, SUITE 4000, HOUSTON, TX 77002  
**MILAM LANDFILL**  
**HIGH BTU GAS FACILITY**  
**LFG COLLECTION BLOWER 002**

DRAWING NUMBER **PID-1003** REV. 1



- NOTE:
- VS INDICATES SUPPLIED BY VENDOR & INSTALLED IN FIELD BY WASTE MANAGEMENT.
  - SUPPLIED BY WASTE MANAGEMENT.

RELEASED FOR DESIGN

Venture Engineering & Construction  
 STATE OF ILLINOIS REG.# 184.006420  
 CONTRACT C11-1186-02

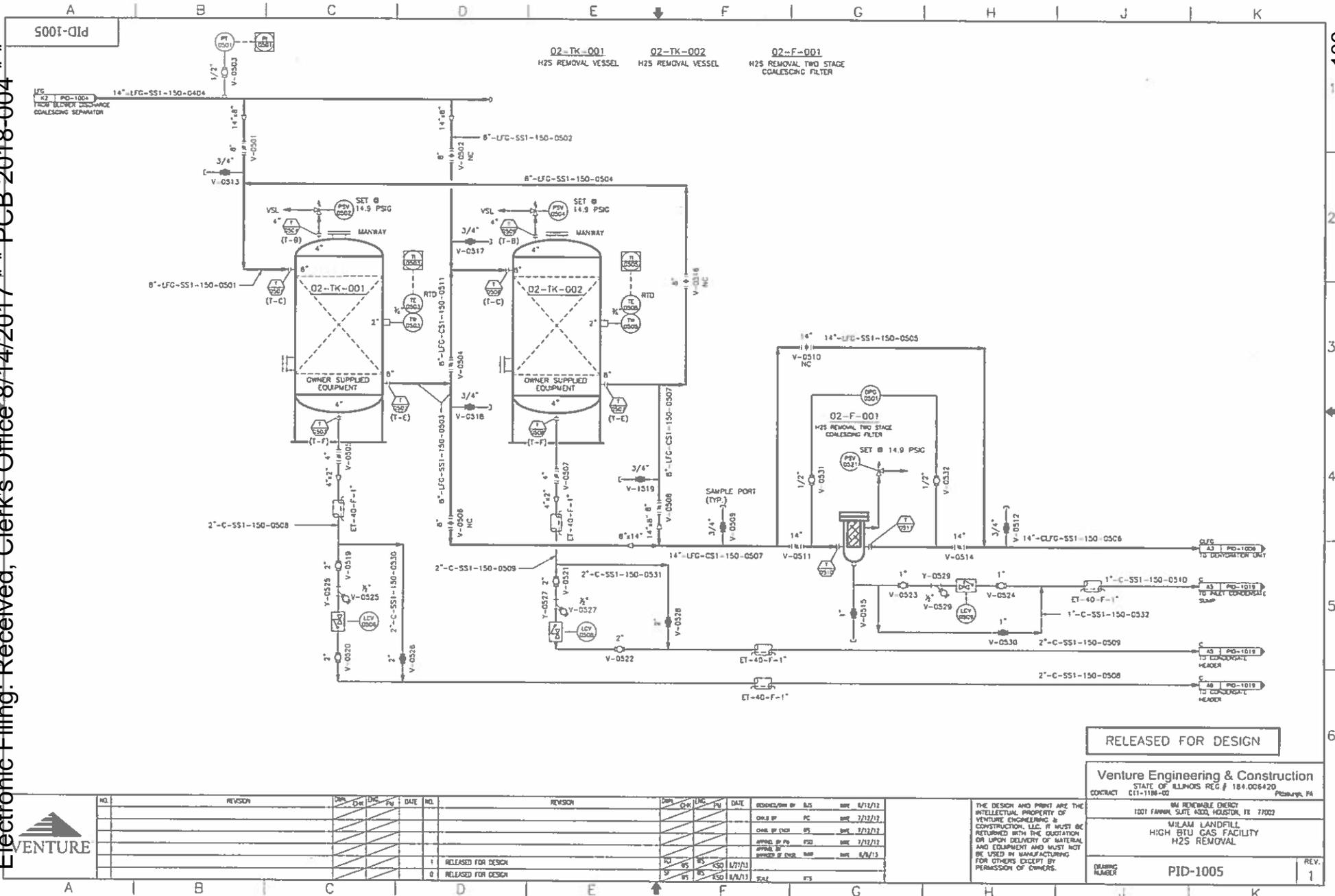
MW RENEWABLE ENERGY  
 1001 FARMAL SUITE 4000, HOUSTON, TX 77002  
 MILAM LANDFILL  
 HIGH BTU GAS FACILITY  
 LFG COLLECTION BLOWER  
 AFTER COOLER AND SEPARATOR

DRAWING NUMBER PID-1004 REV. 1



NO.	REVISION	DATE	BY	CHK	APP	DATE	DESCRIPTION
1	RELEASED FOR DESIGN	8/2/17	VS	VS	VS	8/2/17	
0	RELEASED FOR DESIGN	8/1/17	VS	VS	VS	8/1/17	

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RELEASED FOR DESIGN

Venture Engineering & Construction  
STATE OF ILLINOIS REG # 184.006420  
CONTRACT C11-1188-02

MILAM LANDFILL  
HIGH BTU GAS FACILITY  
H2S REMOVAL

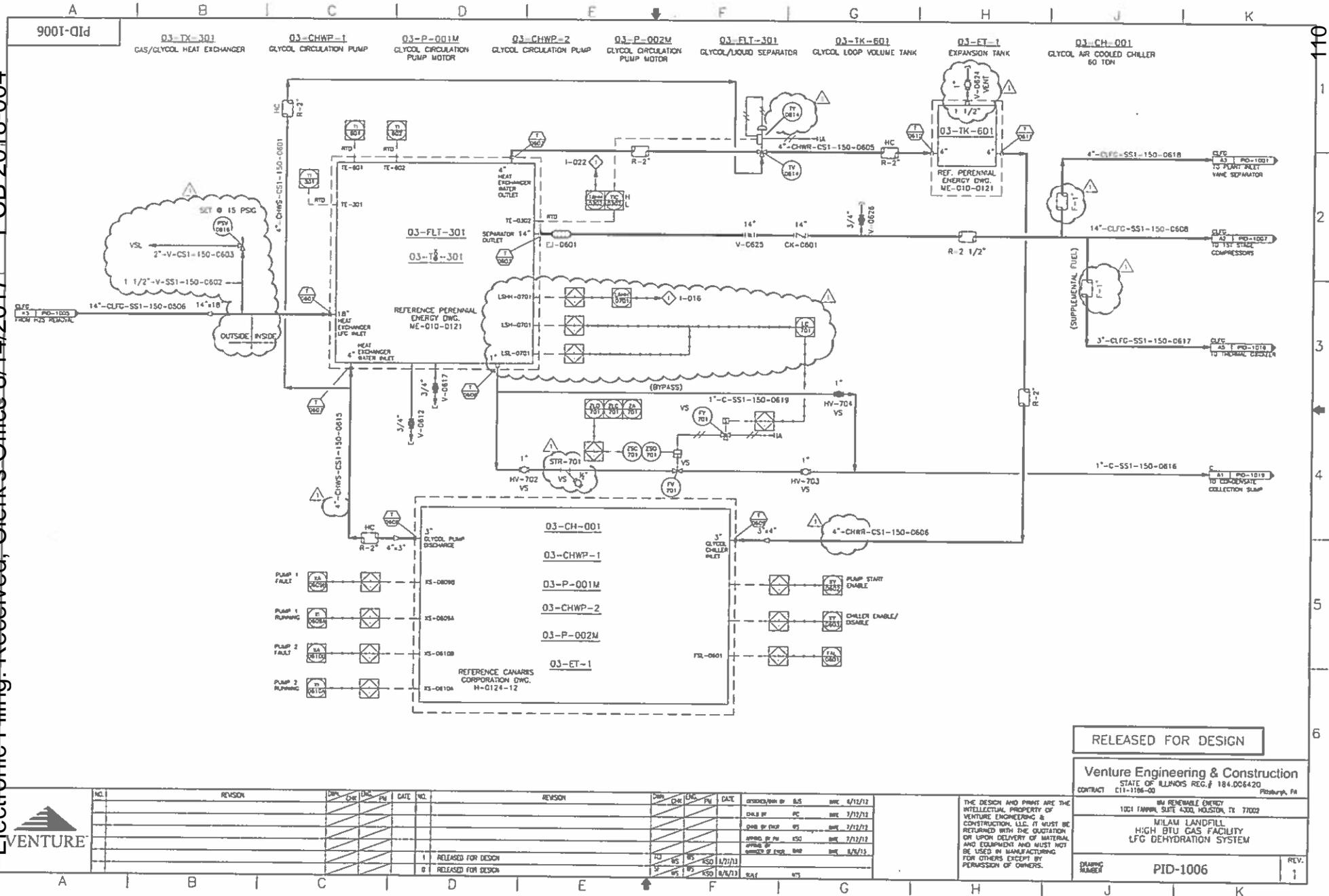
DRAWING NUMBER: PID-1005  
REV. 1

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A | B | C | D | E | F | G | H | J | K



RELEASED FOR DESIGN

Venture Engineering & Construction  
 STATE OF ILLINOIS REG.# 184.006420  
 CONTRACT C11-1186-03

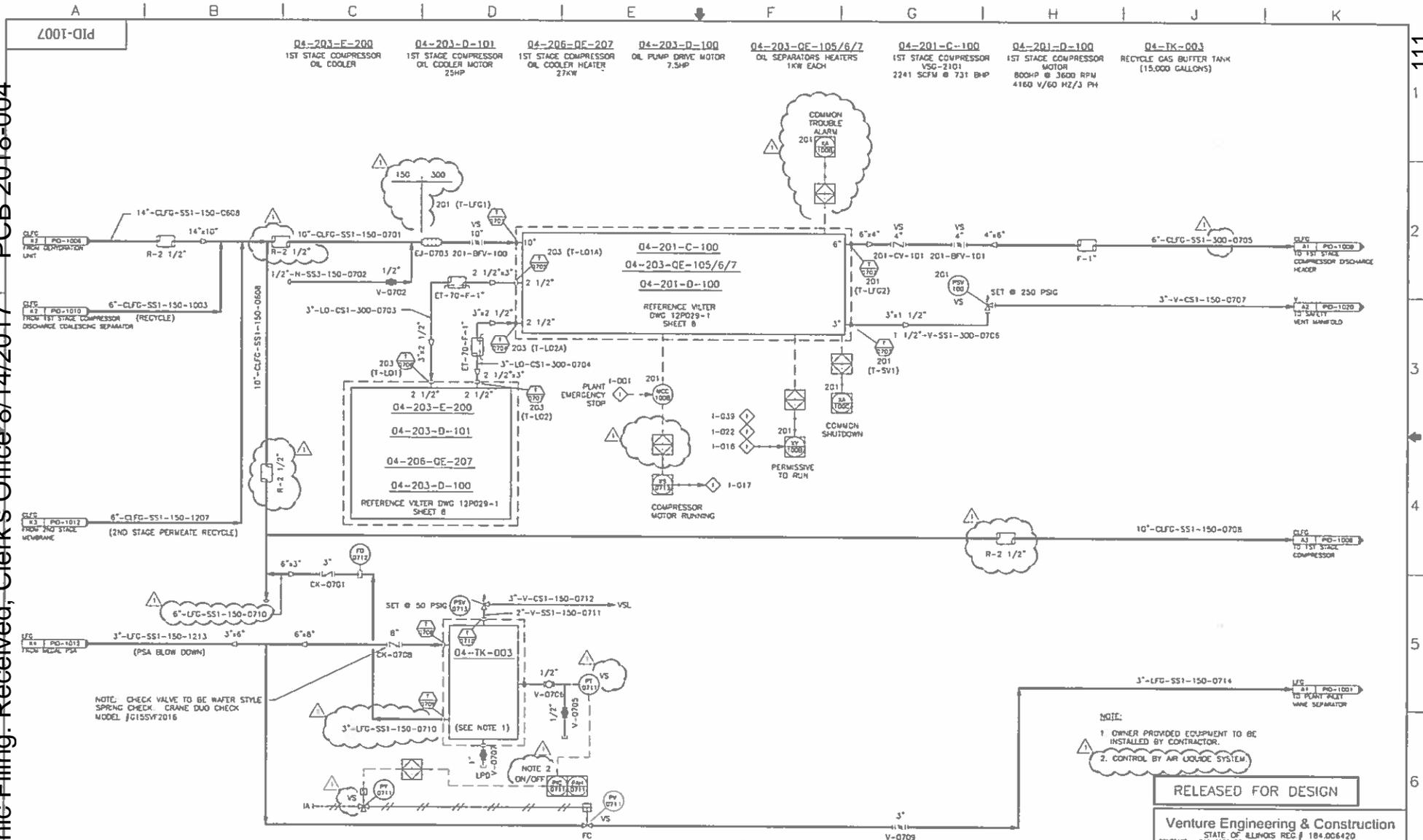
BY RENEWABLE ENERGY  
 1001 FANNIN, SUITE 4300, HOUSTON, TX 77002  
 MILAM LANDFILL  
 HIGH BTU GAS FACILITY  
 LFG DEHYDRATION SYSTEM

DRAWING NUMBER PID-1006 REV. 1

NO.	REVISION	DATE	BY	CHKD	APP'D	DATE	DESCRIPTION
1	RELEASED FOR DESIGN	8/12/17	...	...	...	...	...
2	RELEASED FOR DESIGN	8/14/17	...	...	...	...	...

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NOTE: CHECK VALVE TO BE WAFFER STYLE SPRING CHECK VALVE CRANE DUO CHECK MODEL JG155V2016

NOTE:  
 1. OWNER PROVIDED EQUIPMENT TO BE INSTALLED BY CONTRACTOR.  
 2. CONTROL BY AIR LOGIC SYSTEM.

**RELEASED FOR DESIGN**

**Venture Engineering & Construction**  
 STATE OF ILLINOIS REG # 184.006420  
 CONTRACT C11-118-00

1611 RENEWABLE ENERGY  
 1001 TAMM, SUITE 4300, HOUSTON, TX 77002  
**MILAM LANDFILL  
 HIGH BTU GAS FACILITY  
 FIRST STAGE COMPRESSOR 001**

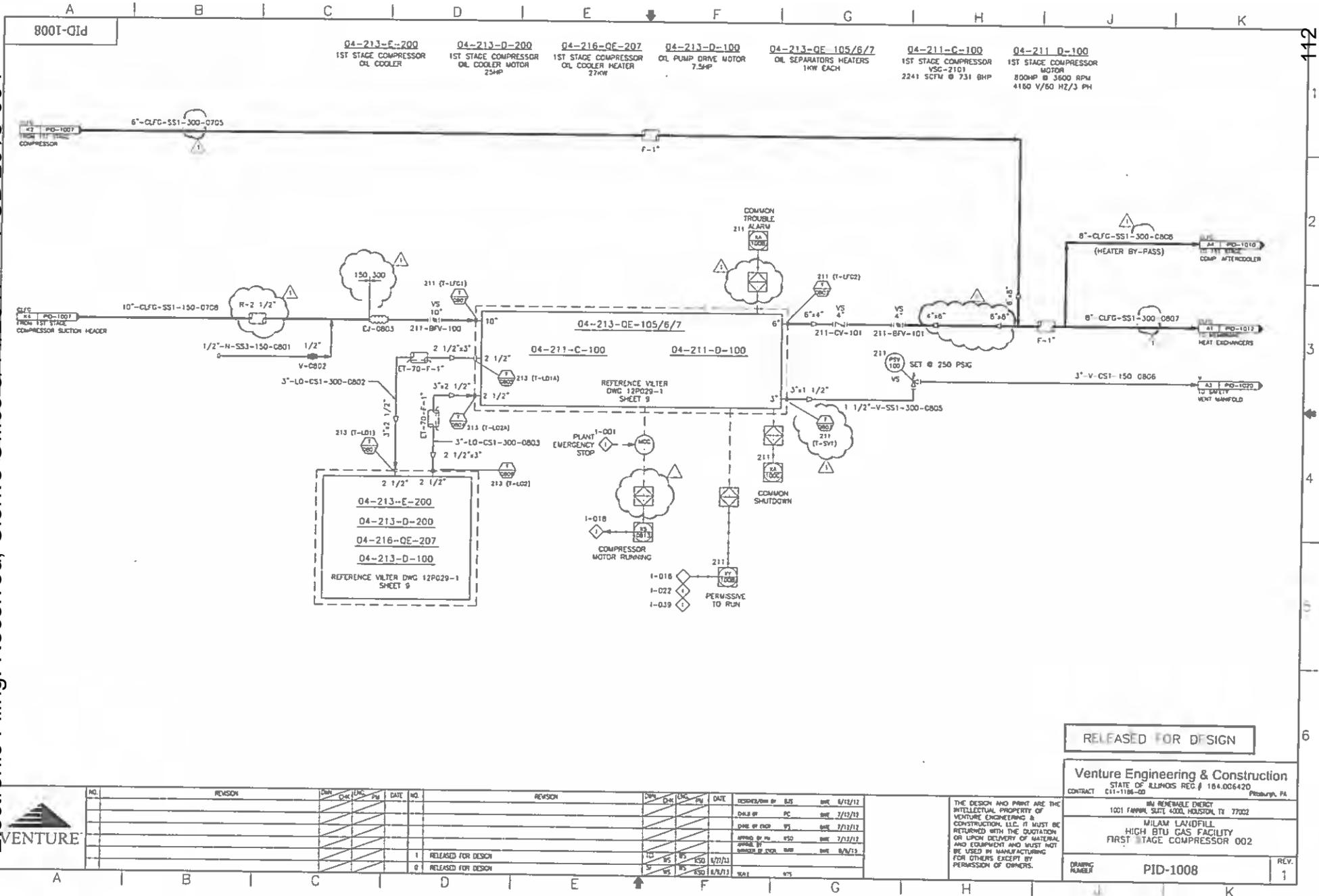
DRAWING NUMBER **PID-1007**



NO.	REVISION	DATE	BY	CHK	APP	DATE	REVISION	DATE	BY	CHK	APP	DATE	REVISION	DATE	BY	CHK	APP
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2	RELEASED FOR DESIGN																

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REV. 1



RELEASED FOR DESIGN

Venture Engineering & Construction  
 STATE OF ILLINOIS REG # 184.006420  
 CONTRACT 011-1186-00

RENEWABLE ENERGY  
 1001 FARMER STATE ROAD, HOUSTON, TX 77002  
 MILAM LANDFILL  
 HIGH BTU GAS FACILITY  
 FIRST STAGE COMPRESSOR 002

DRAWING NUMBER PID-1008 REV. 1

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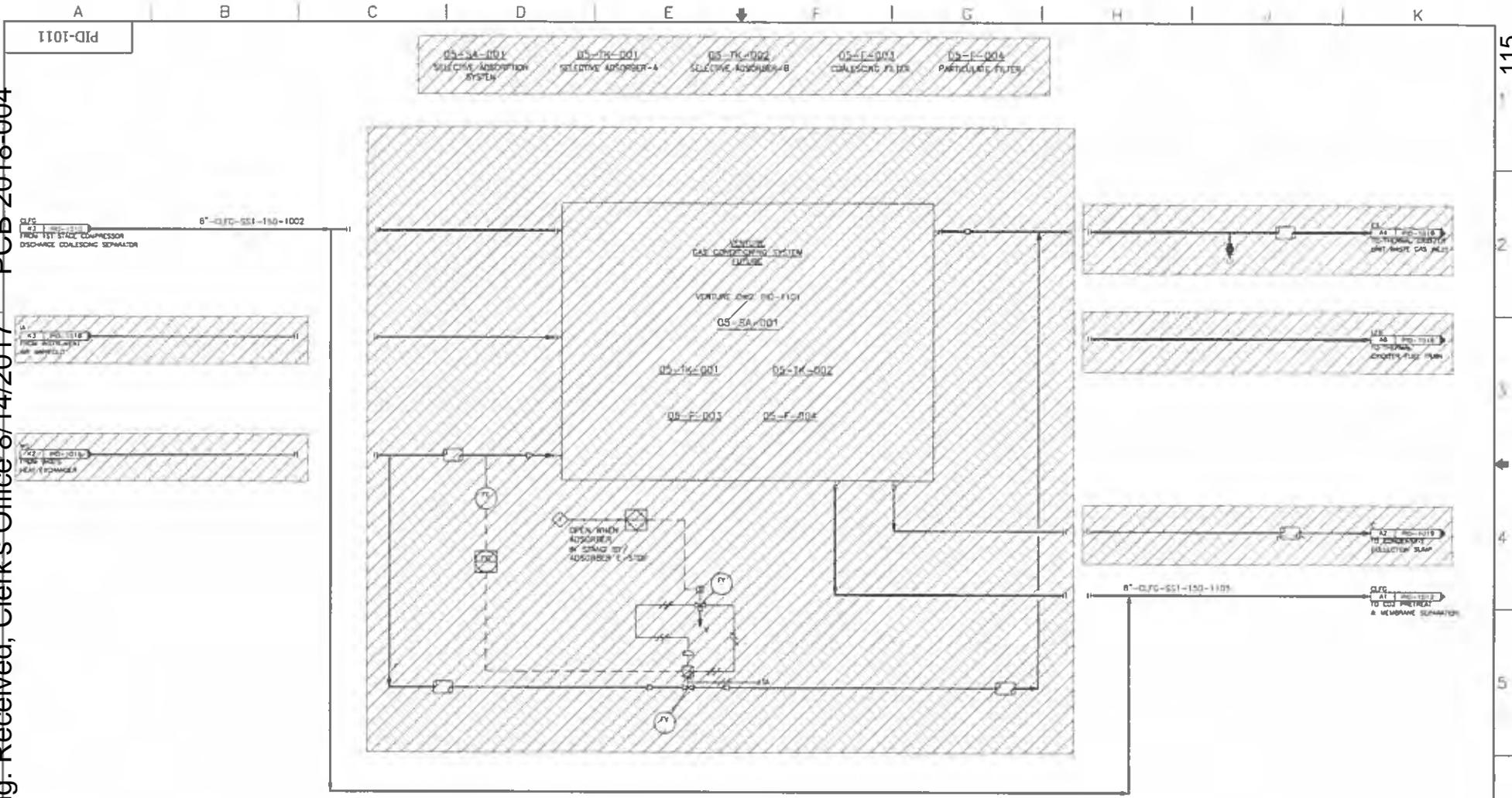
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Electronic Filing: Received, Clerk's Office 8/14/2017 \* \* PCB 2018-004 \* \*



NOTE:  
1 HATCHED AREA REPRESENTS FUTURE EQUIPMENT

RELEASED FOR DESIGN

**Venture Engineering & Construction**  
 STATE OF ILLINOIS REG # 184.006420  
 CONTRACT C13 1136-00  
 84 RENEWABLE ENERGY  
 1001 FANNIN SUITE 4000, HOUSTON, TX 77002  
 MILAM LANDFILL  
 HIGH BTU GAS FACILITY  
 SELECTIVE ADSORPTION SYSTEM  
 FUTURE

Pittsburgh, PA

DRAWING NUMBER: PID-1011      REV: 1

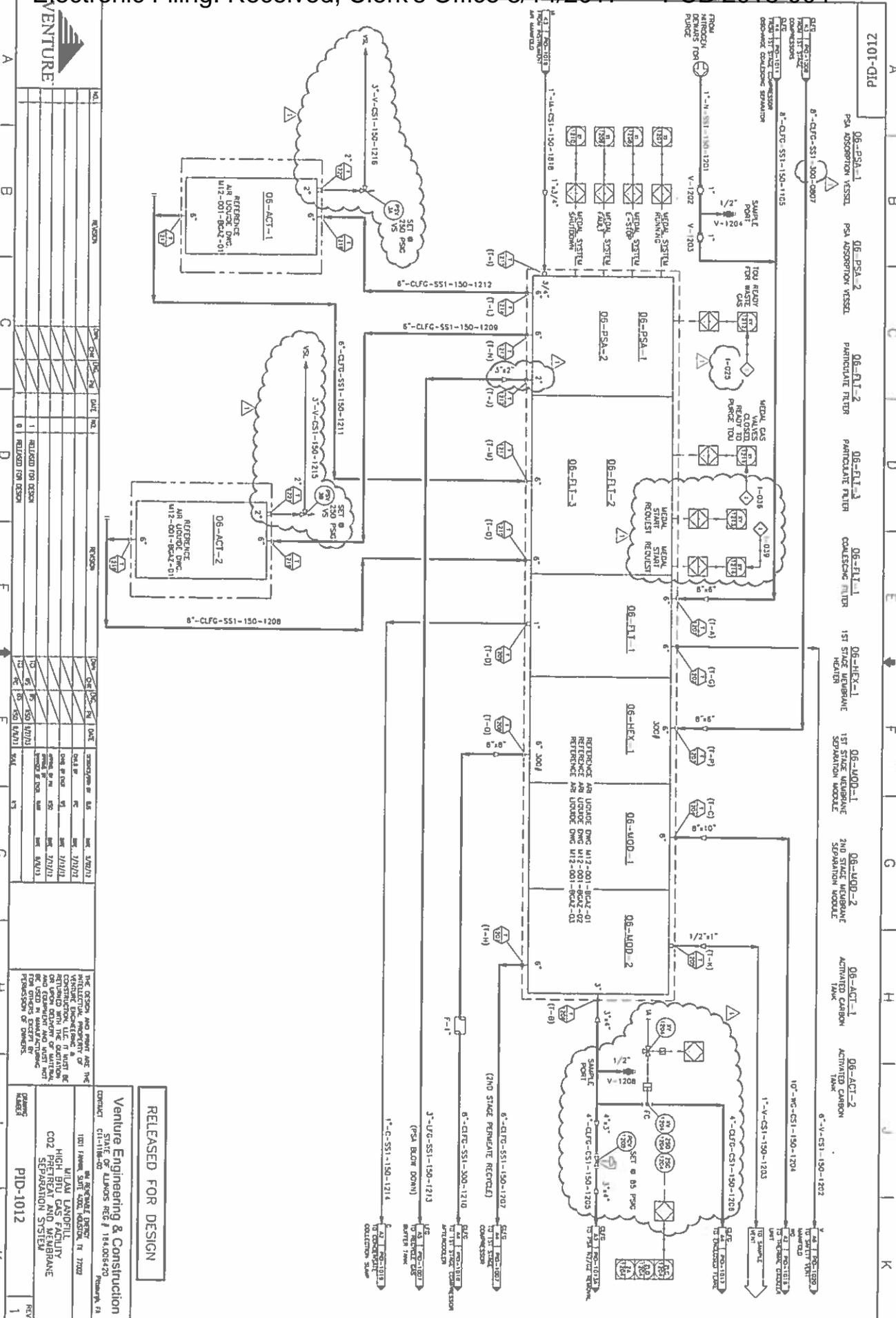
NO.	REVISION	DATE	NO.	REVISION	DATE	BY	CHK	APP	REVISIONS	
									DATE	BY
1	RELEASED FOR DESIGN	7/27/11							TS	MS
2	RELEASED FOR DESIGN	8/2/11							TS	MS



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115

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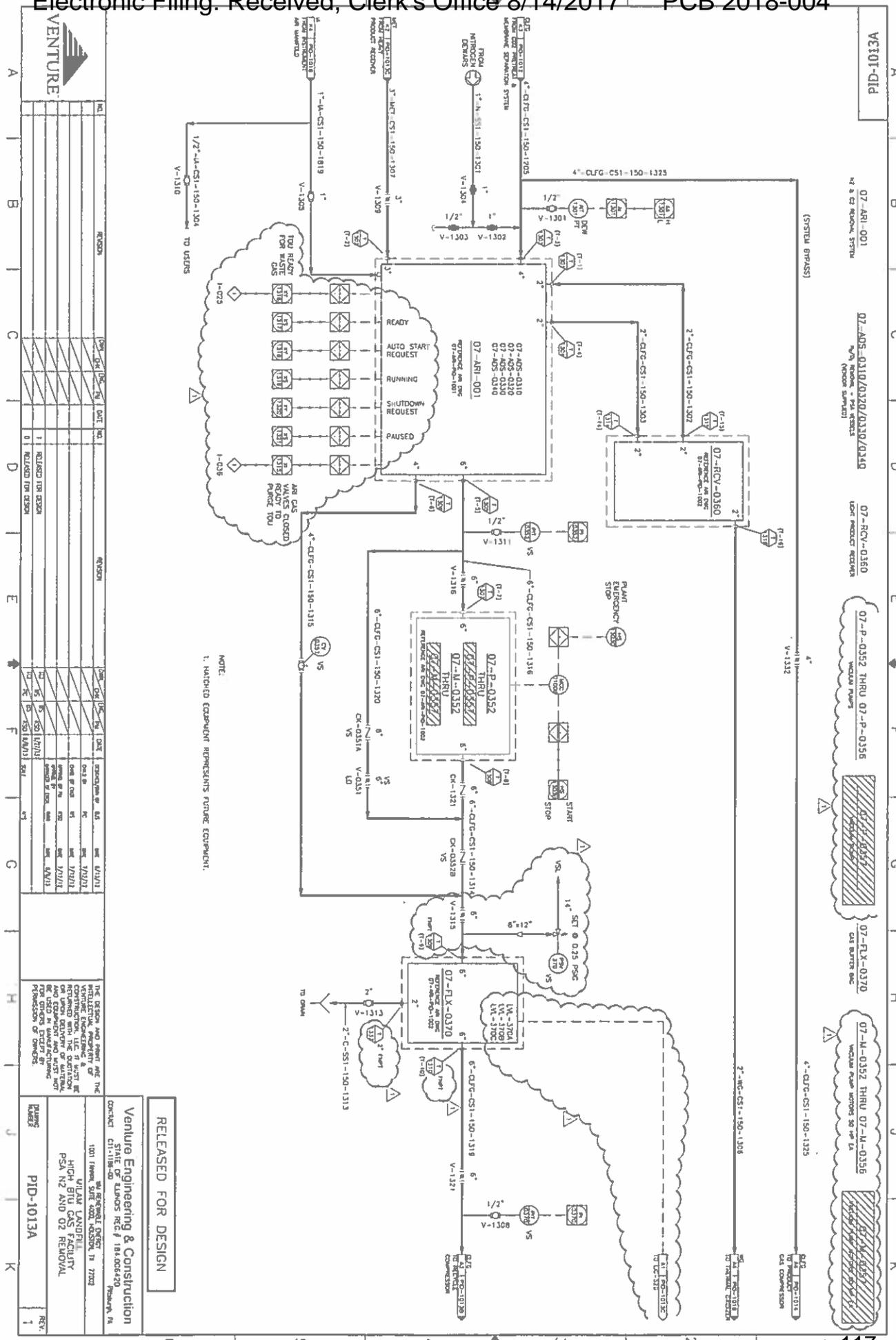


NO.	DATE	BY	CHKD	REASON
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3	05/17/13	...	...	...
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5	05/17/13	...	...	...
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**RELEASED FOR DESIGN**

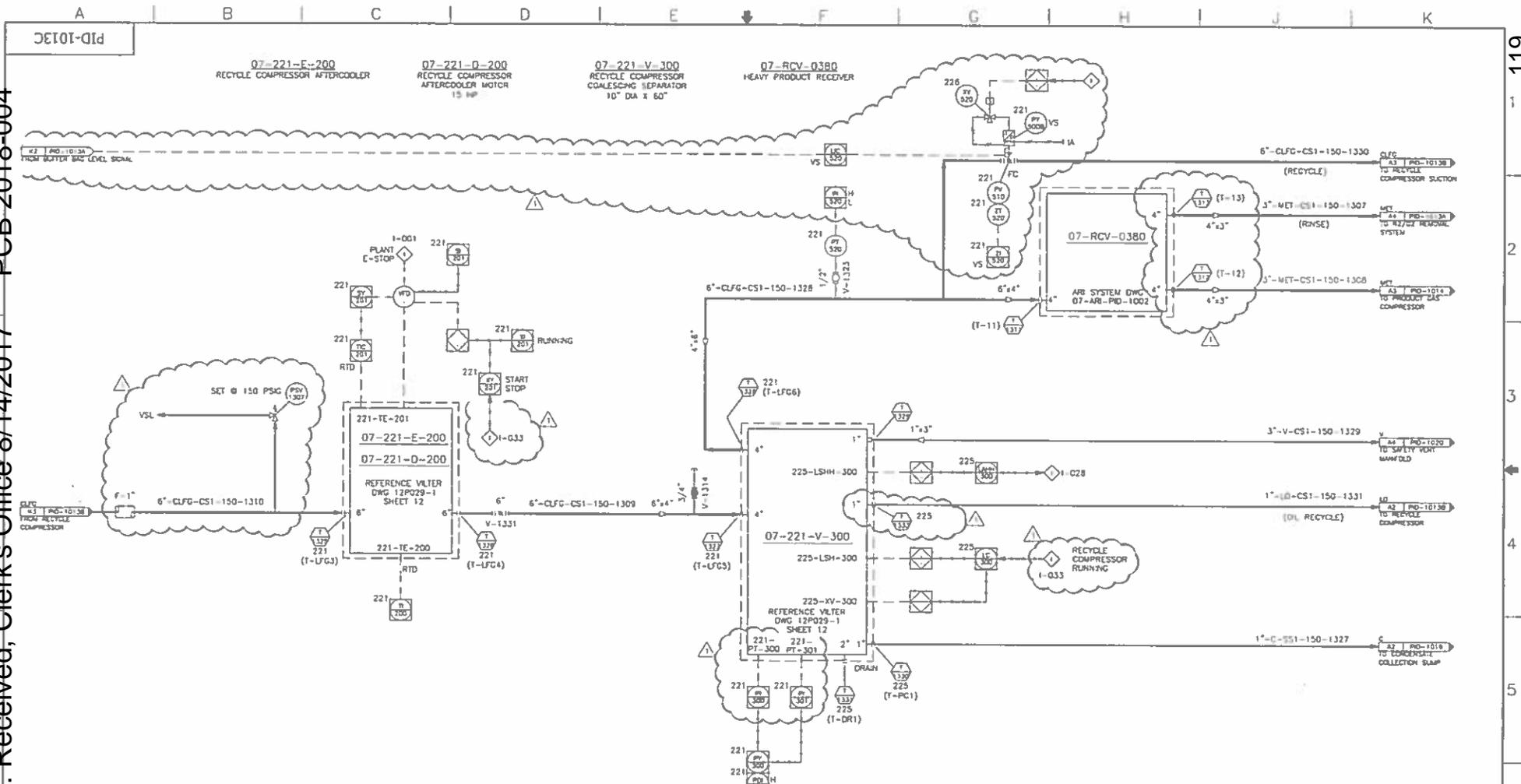
Venture Engineering & Construction  
 CONTACT: C. H. ...  
 1801 FARM ROAD, ...  
 WILMA LANDFILL  
 CO2 PRESENT AND MEMBRANE  
 SEPARATION SYSTEM  
 PID-1012







Electronic Filing: Received, Clerk's Office 8/14/2017 \* \* PCB 2018-004



RELEASED FOR DESIGN



NO.	REVISION	DATE	NO.	REVISION	DATE
1	RELEASED FOR DESIGN	7/23/13	1	RELEASED FOR DESIGN	7/23/13
0	RELEASED FOR DESIGN	8/8/13			

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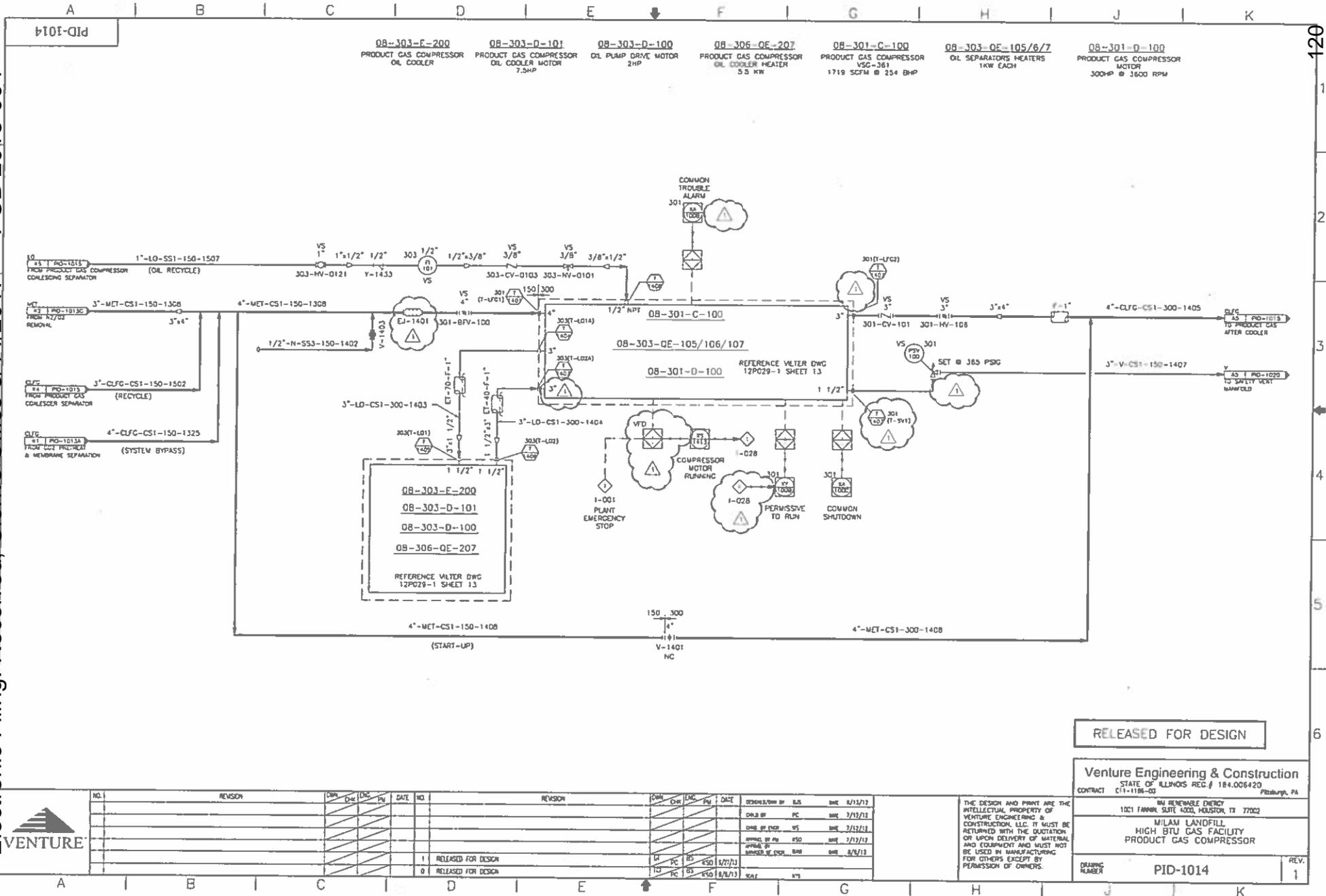
**Venture Engineering & Construction**  
 STATE OF ILLINOIS REG # 184.DC6420  
 CONTRACT C11-1184-00

800 RENEWABLE ENERGY  
 1001 FARM, SUITE 400, HUNTSVILLE, TN 37002

MILAM LANDFILL  
 HIGH BTU GAS FACILITY  
 RECYCLE COMPRESSOR  
 AFTERCOOLER AND SEPARATOR

DRAWING NUMBER: PID-1013C  
 REV. 1

119  
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RELEASED FOR DESIGN

Venture Engineering & Construction  
 STATE OF ILLINOIS REG # 184.006420  
 CONTRACT C11-1108-00 Pittsburgh, PA

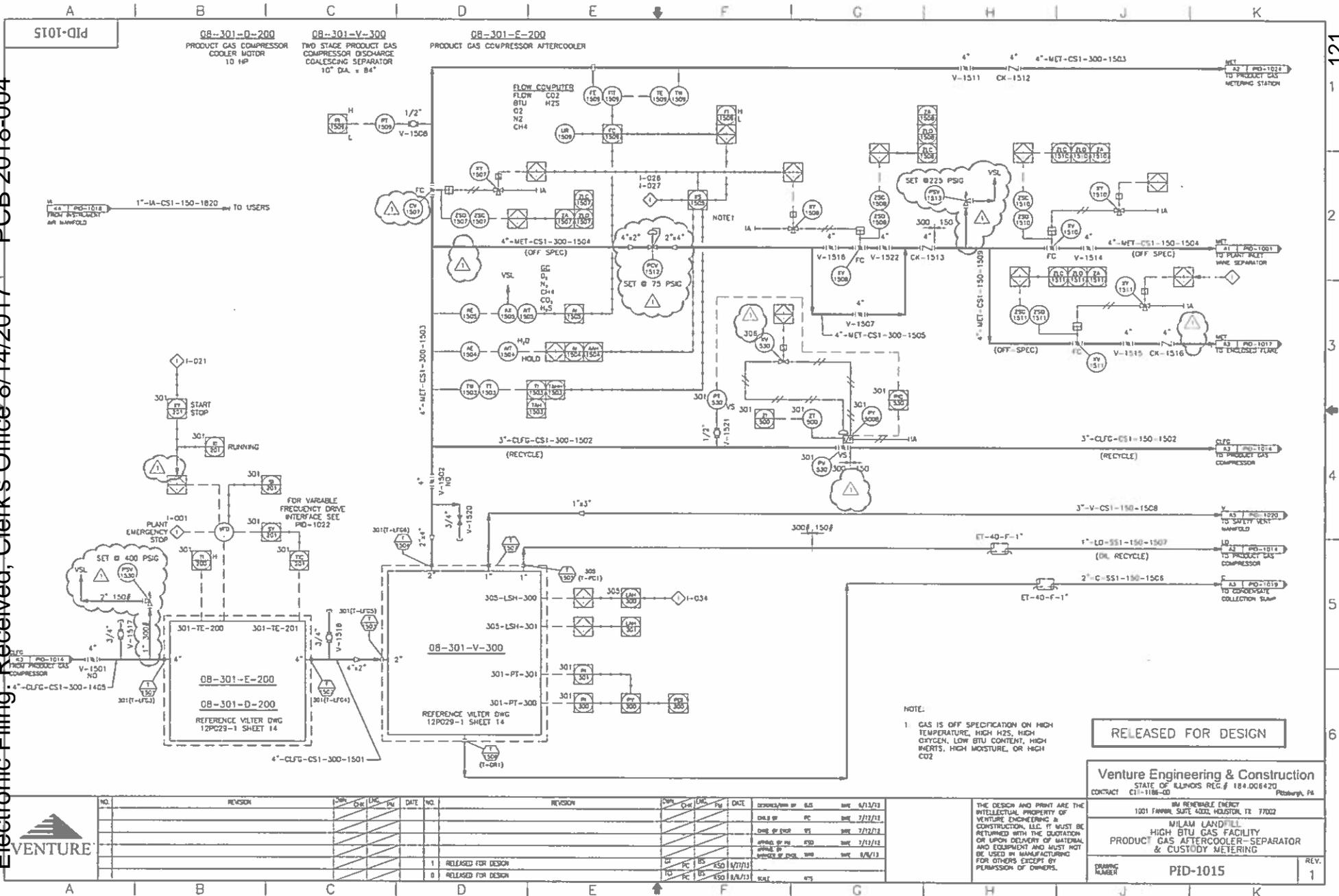
MILAM RENEWABLE ENERGY  
 1021 FARMER SUITE 4000, HOUSTON, TX 77002  
 MILAM LANDFILL  
 HIGH BTU GAS FACILITY  
 PRODUCT GAS COMPRESSOR

DRAWING NUMBER PID-1014 REV. 1

NO.	REVISION	DATE	BY	CHKD	APP'D	DATE	REVISION	DATE	BY	CHKD	APP'D
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0	RELEASED FOR DESIGN	8/1/17	PC	MS	ESD	8/1/17					

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RELEASED FOR DESIGN

Venture Engineering & Construction  
 STATE OF ILLINOIS REG.# 184.006420  
 CONTRACT CT-1188-00

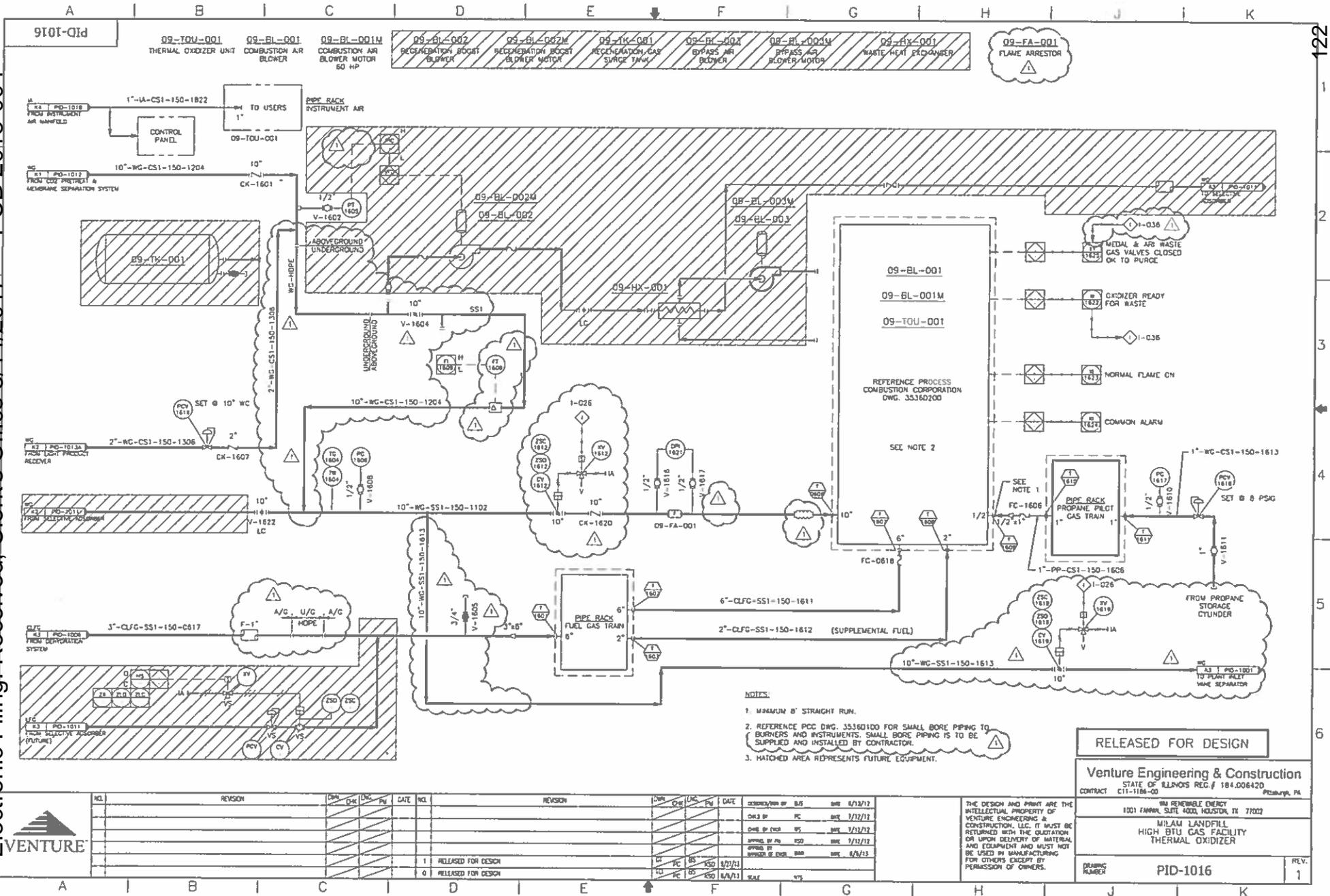
1001 FARMER BLVD. HOUSTON, TX 77002  
 MILAM LANDFILL  
 PRODUCT GAS AFTERCOOLER-SEPARATOR & CUSTODY METERING

DRAWING NUMBER PID-1015 REV. 1

NO.	REVISION	DATE	NO.	REVISION	DATE	NO.	REVISION	DATE
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0	RELEASED FOR DESIGN		0	RELEASED FOR DESIGN		0	RELEASED FOR DESIGN	



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- NOTES:
1. MAXIMUM 8' STRAIGHT RUN.
  2. REFERENCE PCC DWG. 35360100 FOR SMALL BORE PIPING TO BURNERS AND INSTRUMENTS. SMALL BORE PIPING IS TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
  3. MATCHED AREA REPRESENTS FUTURE EQUIPMENT.

**RELEASED FOR DESIGN**

**Venture Engineering & Construction**  
 STATE OF ILLINOIS REG # 184.006420  
 CONTRACT C11-3184-00

101 RENEWABLE ENERGY  
 1001 FARMER SLATE 4000, HOUSTON, TX 77002

MILAM LANDFILL  
 HIGH BTU GAS FACILITY  
 THERMAL OXIDIZER

DRAWING NUMBER **PID-1016**

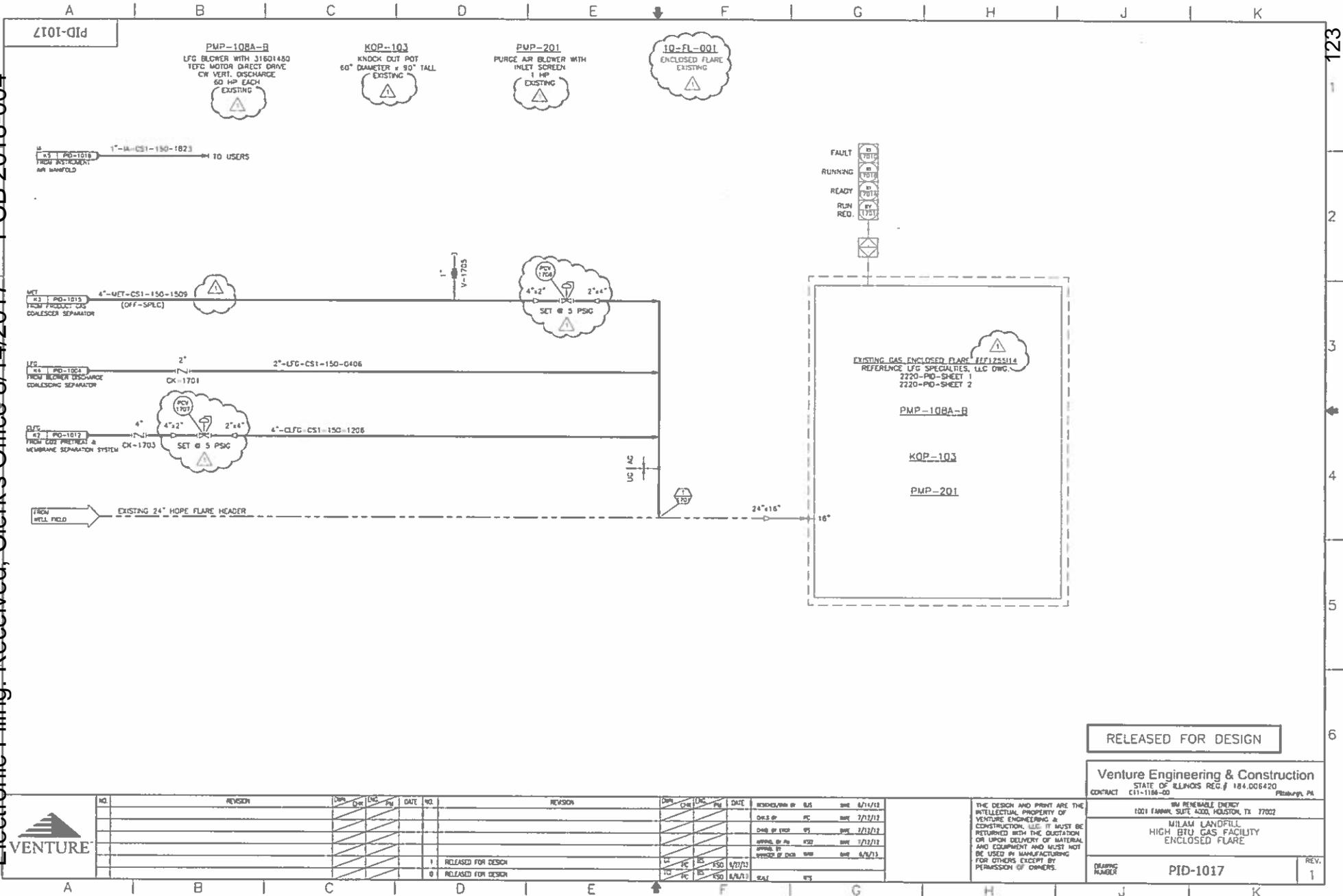
REV. **1**



NO.	REVISION	DATE	BY	CHK	DATE	NO.	REVISION	DATE	BY	CHK	DATE	ISSUED/APP BY	DATE
1	RELEASED FOR DESIGN												8/17/17
0	RELEASED FOR DESIGN												8/17/17

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RELEASED FOR DESIGN

**Venture Engineering & Construction**  
STATE OF ILLINOIS REG.# 184.006420  
CONTRACT C71-1188-00 Pittsburgh, PA

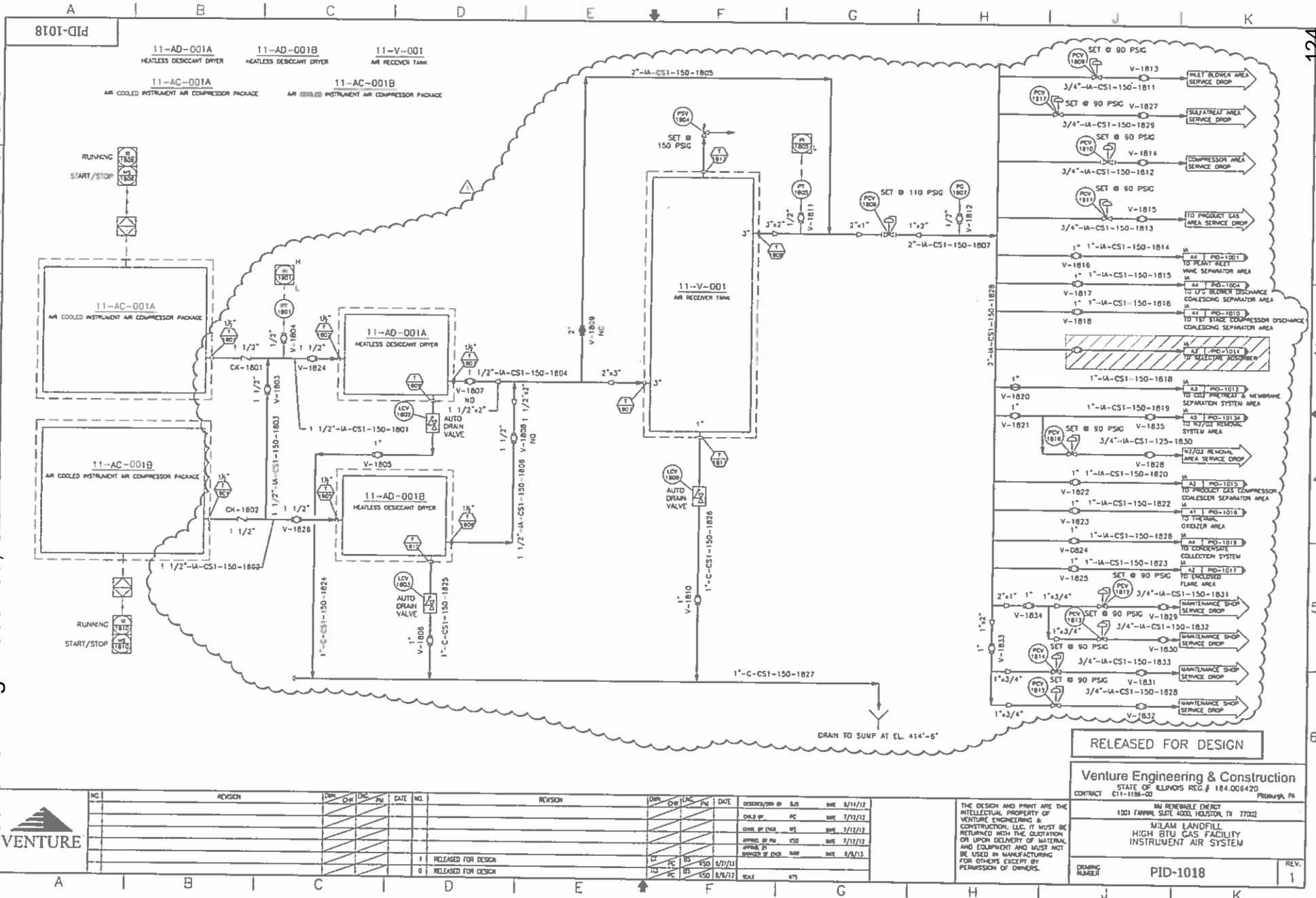
3M RENEWABLE ENERGY  
1001 FARMER SUITE 4200 HOUSTON, TX 77002  
MILAM LANDFILL  
HIGH BTU GAS FACILITY  
ENCLOSED FLARE

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NO.	REVISION	APP.	CHK.	DATE	NO.	REVISION	APP.	CHK.	DATE	REVISION/APP BY	DATE
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0	RELEASED FOR DESIGN										



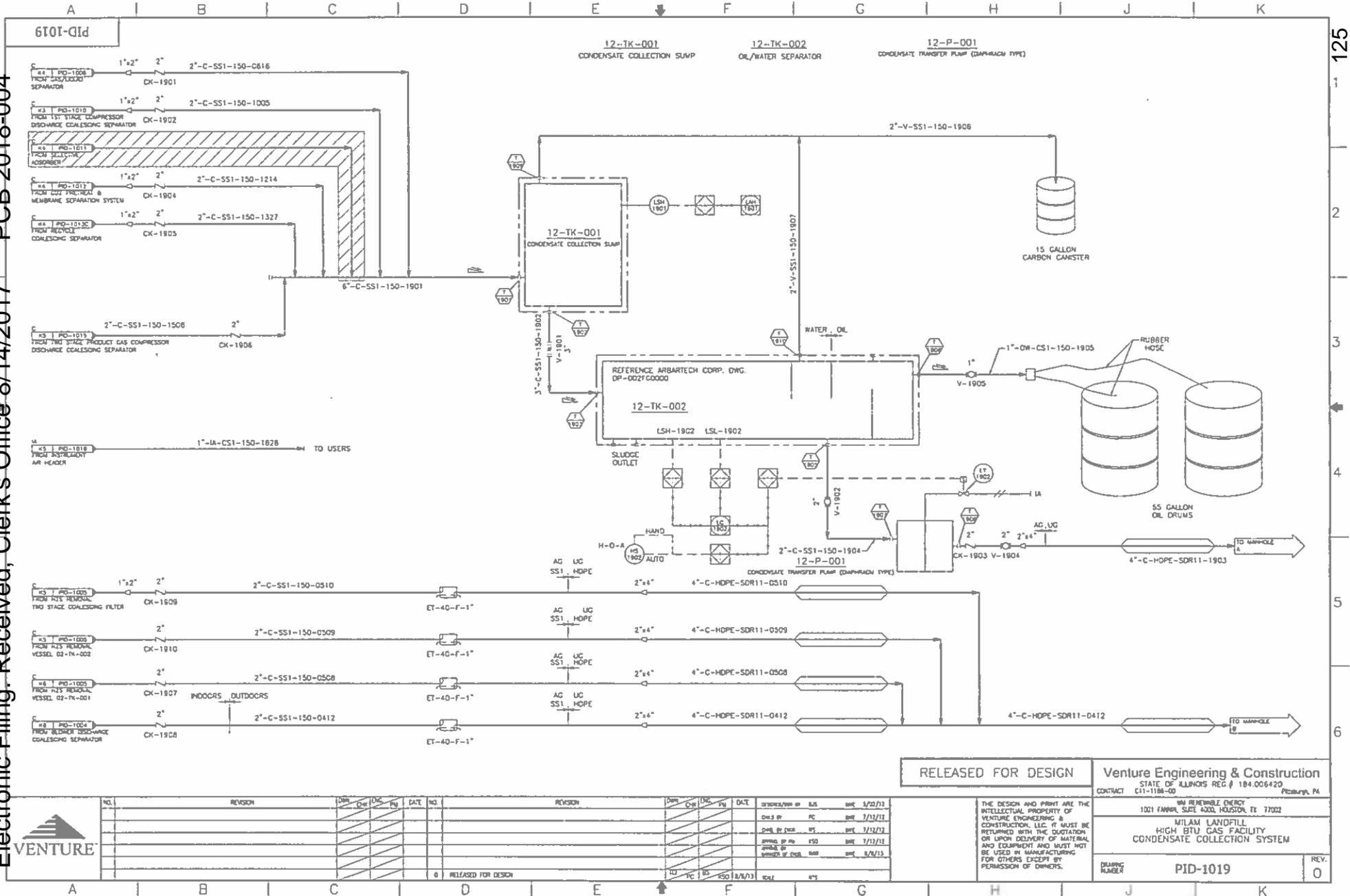
DRAWING NUMBER: PID-1017 REV. 1



NO.	REVISION	DATE	NO.	REVISION	DATE
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2	RELEASED FOR DESIGN	8/17/17	2	RELEASED FOR DESIGN	8/17/17



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RELEASED FOR DESIGN

Venture Engineering & Construction  
 STATE OF ILLINOIS REG # 184.006420  
 CONTRACT C11-1188-02

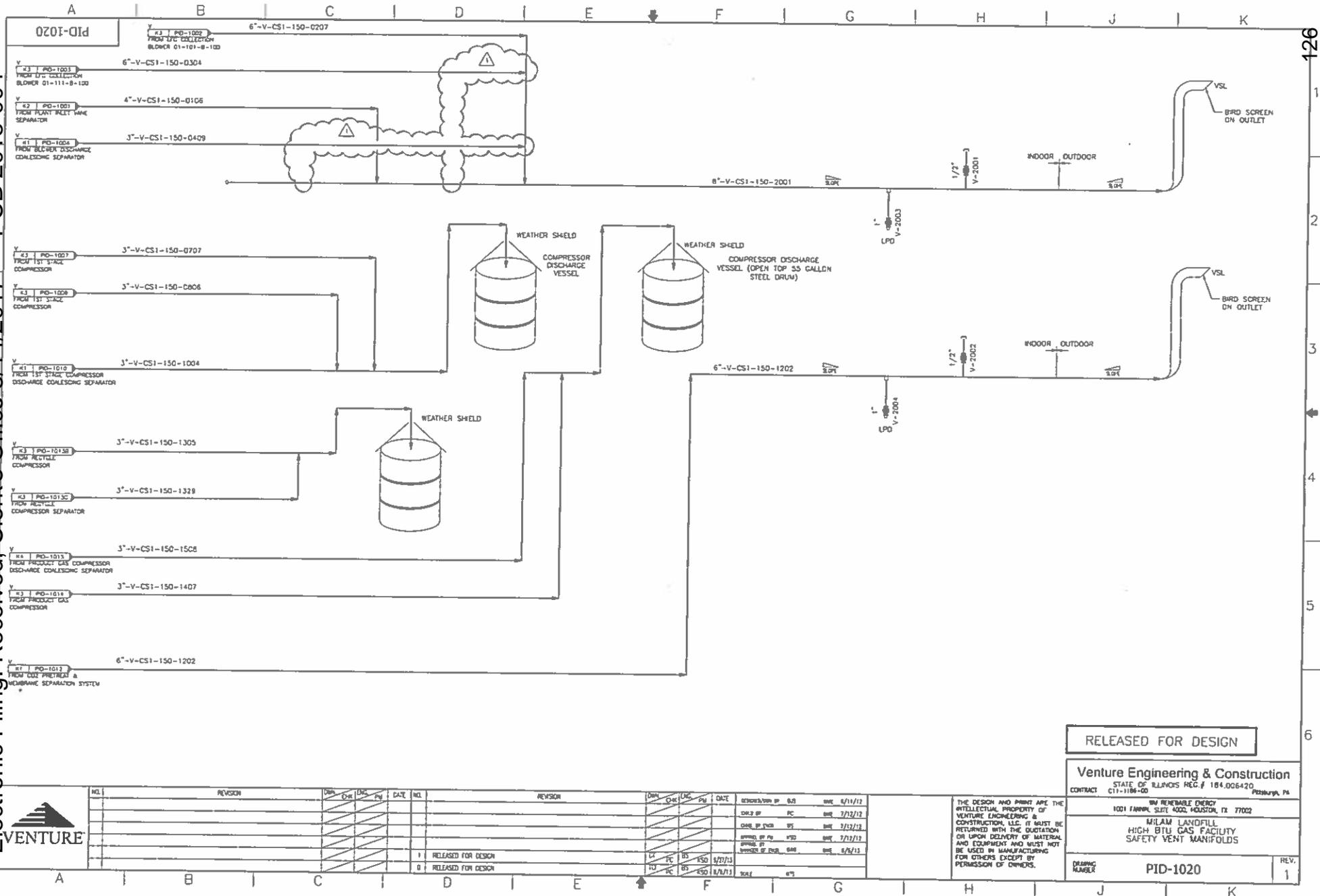
101 FAVOR SLATE 4000, HOUSTON, TX 77002  
 WILAM LANDFILL  
 HIGH BTU GAS FACILITY  
 CONDENSATE COLLECTION SYSTEM

DRAWING NUMBER: PID-1019  
 REV: 0



NO.	REVISION	DATE	BY	CHKD	DATE	BY	CHKD	DATE	BY	CHKD
0	RELEASED FOR DESIGN	8/14/17	LS	PC	8/14/17	LS	PC	8/14/17	LS	PC

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NO.	REVISION	DATE	BY	CHKD BY	DATE	REVISION	DATE	BY	CHKD BY	DATE
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2	RELEASED FOR DESIGN	8/17/17	PC	PC	8/17/17					

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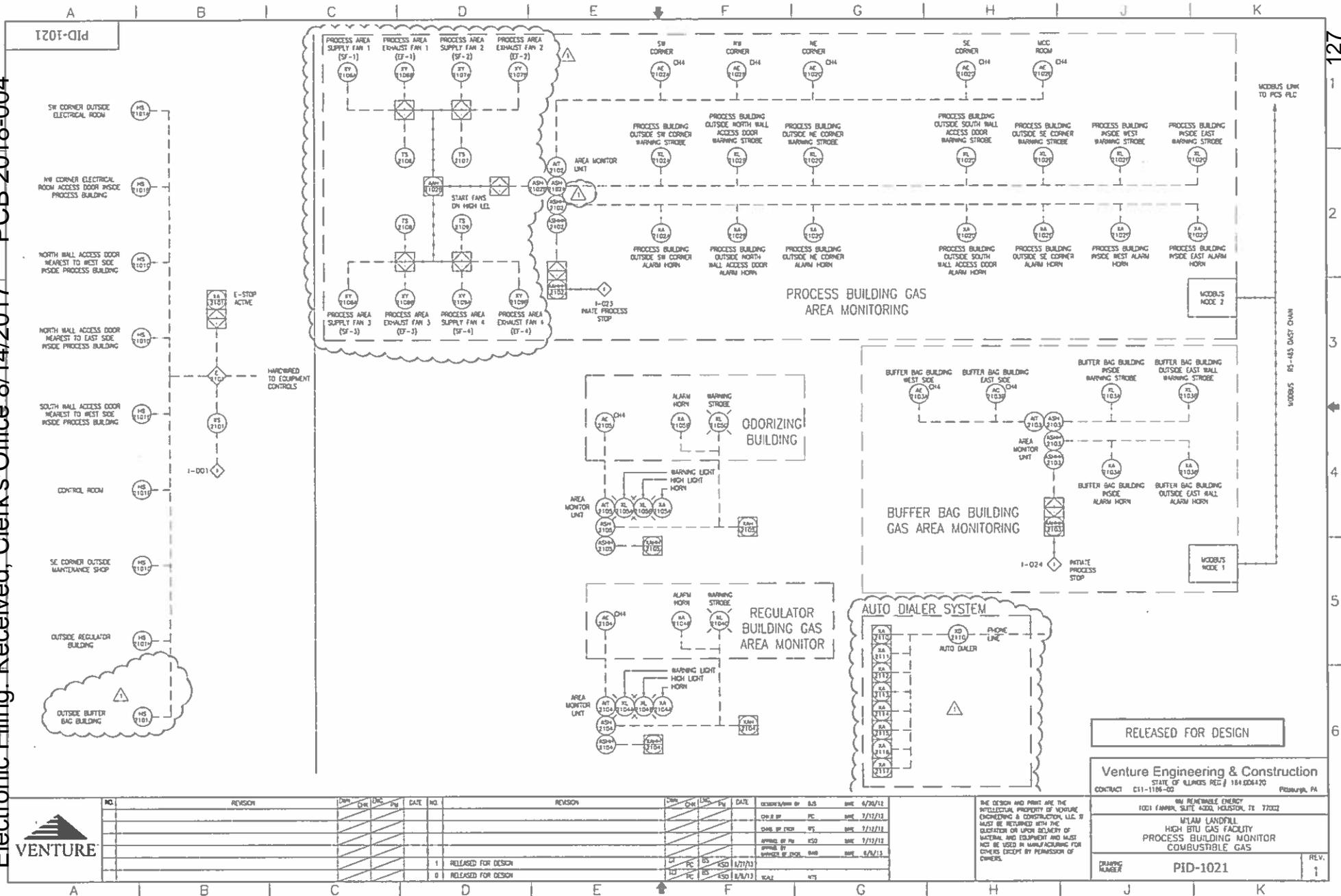
RELEASED FOR DESIGN

**Venture Engineering & Construction**  
 STATE OF ILLINOIS REG. # 184.006420  
 CONTRACT C17-1184-00

BY RENEWABLE ENERGY  
 1021 FANNING SLITZ 4000, HOUSTON, TX 77002

MILAM LANDFILL  
 HIGH BTU GAS FACILITY  
 SAFETY VENT MANIFOLDS

DRAWING NUMBER: **PID-1020** REV. **1**



RELEASED FOR DESIGN

Venture Engineering & Construction  
 STATE OF ILLINOIS REG # 184 028470 Pittsburgh, PA

BY RENEWABLE ENERGY  
 1001 FARMER SUITE 4000, HOUSTON, TX 77002  
 MTAM LANDFILL  
 HIGH BTU GAS FACILITY  
 PROCESS BUILDING MONITOR  
 COMBUSTIBLE GAS

DRAWING NUMBER PID-1021 REV. 1

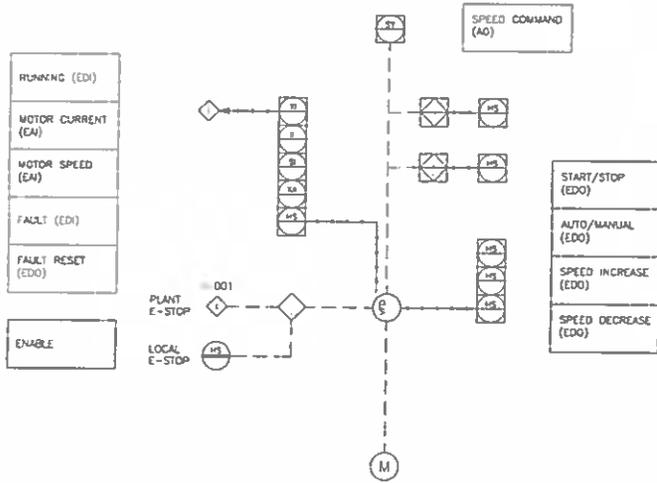
NO.	REVISION	APP'D	CHK'D	DATE	NO.	REASON	APP'D	CHK'D	DATE	DESIGNED BY	DATE	DESIGNED BY	DATE
1	RELEASED FOR DESIGN			11/17/13						ESD	11/17/13		
0	RELEASED FOR DESIGN			8/13/13						ESD	8/13/13		



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 ENGINEERING & CONSTRUCTION, LLC. IT  
 MUST BE RETURNED WITH THE  
 QUOTATION OR UPON DELIVERY OF  
 MATERIALS AND EQUIPMENT AND MUST  
 NOT BE USED IN MANUFACTURING FOR  
 OTHERS EXCEPT BY PERMISSION OF  
 OWNERS.

PID-1022

VFD INTERFACE



VFD NAME	PID DWG NUMBER	LOOP ID
LFG BLOWER 001	PID-1002	0210
LFG BLOWER 002	PID-1003	0310
LFG BLOWER AFTERCOOLER	PID-1004	0403
FEED GAS COMPRESSOR AFTERCOOLER	PID-1010	1009
RECYCLE GAS COMPRESSOR AFTERCOOLER	PID-1013C	0201
PRODUCT GAS COMPRESSOR AFTERCOOLER	PID-1015	1502

RELEASED FOR DESIGN



NO.	REVISION	DATE	BY	CHKD	DATE	BY	CHKD	DATE	BY	CHKD
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**Venture Engineering & Construction**  
 STATE OF ILLINOIS REG # 184.006420  
 CONTRACT # 111-1728-00

1001 FANNIN, SUITE 1000, HOUSTON, TX 77002

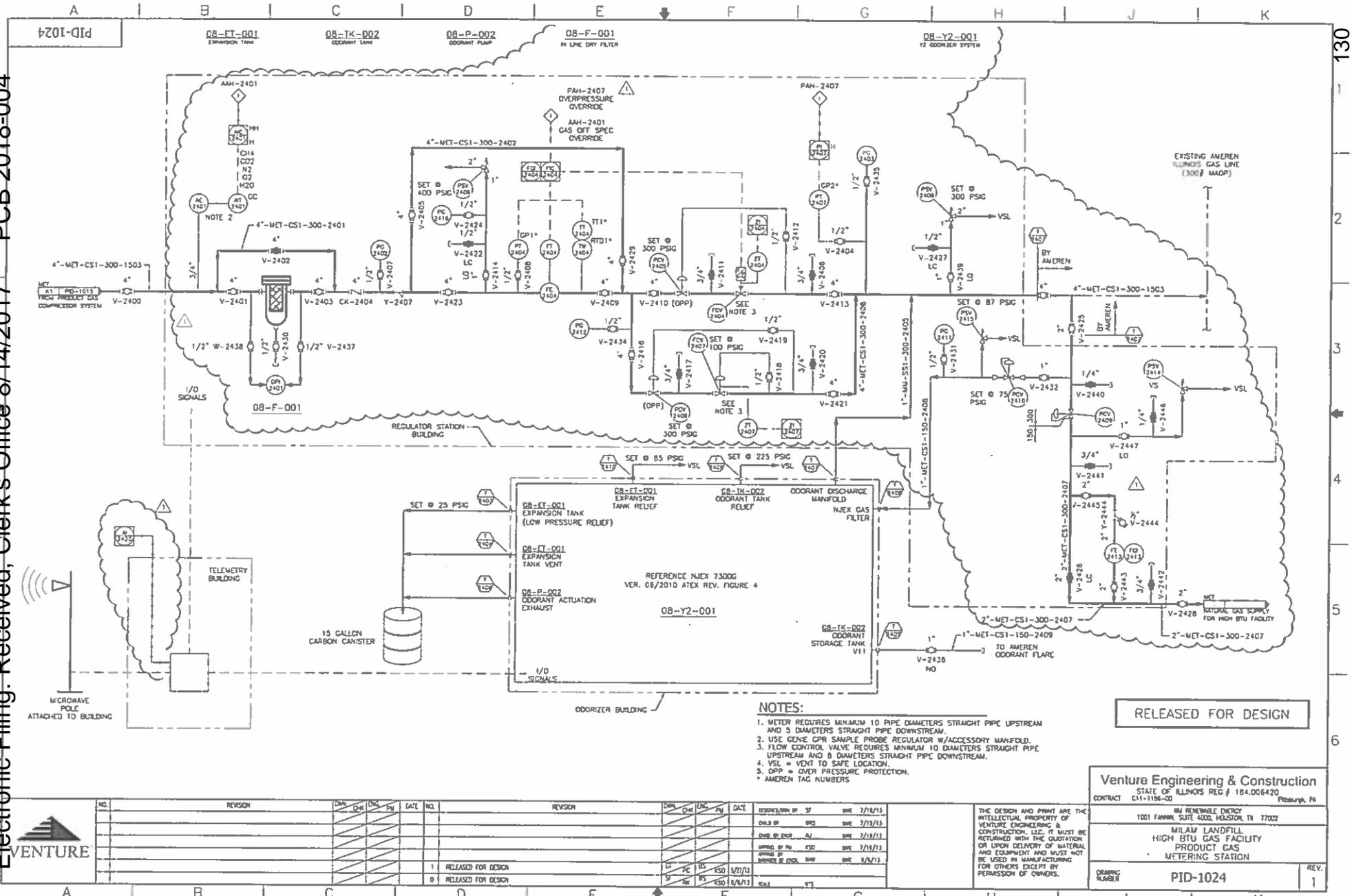
MILAM LANDFILL  
 HIGH BTU GAS FACILITY  
 VFD INSTRUMENTATION DETAIL

DRWG NUMBER: PID-1022

REV. 0

128  
1  
2  
3  
4  
5  
6





REFERENCE NEX 3300G  
VER. 06/2010 ATEX REV. FIGURE 4

- NOTES:**
1. METER REQUIRES MINIMUM 10 PIPE DIAMETERS STRAIGHT PIPE UPSTREAM AND 5 DIAMETERS STRAIGHT PIPE DOWNSTREAM.
  2. USE GENIE CPR SAMPLE PROBE REGULATOR W/ACCESSORY MANIFOLD.
  3. FLOW CONTROL VALVE REQUIRES MINIMUM 10 DIAMETERS STRAIGHT PIPE UPSTREAM AND 8 DIAMETERS STRAIGHT PIPE DOWNSTREAM.
  4. VSL = VENT TO SAFE LOCATION.
  5. OPR = OVER PRESSURE PROTECTION.
  6. AMEREN TAG NUMBERS.

RELEASED FOR DESIGN

Venture Engineering & Construction  
STATE OF ILLINOIS REG # 184.005420  
CONTRACT C11-1106-00 Pittsburgh, PA

BY RENEWABLE ENERGY  
1001 FARMHILL SUITE 400B HOUSTON, TX 77002  
MILAW LANDFILL  
HIGH BTU GAS FACILITY  
PRODUCT GAS  
METERING STATION

DRAWING NUMBER PID-1024 REV. 1



NO.	REVISION	CHK	CHK	CHK	DATE	NO.	REVISION	CHK	CHK	CHK	DATE	DESCRIPTION OF CHG	DATE
1	RELEASED FOR DESIGN										7/16/15		
2											7/19/15		
3											7/19/15		
4											7/19/15		
5											7/19/15		
6											7/19/15		
7											7/19/15		
8											7/19/15		
9	RELEASED FOR DESIGN										8/2/15		
10	RELEASED FOR DESIGN										8/2/15		

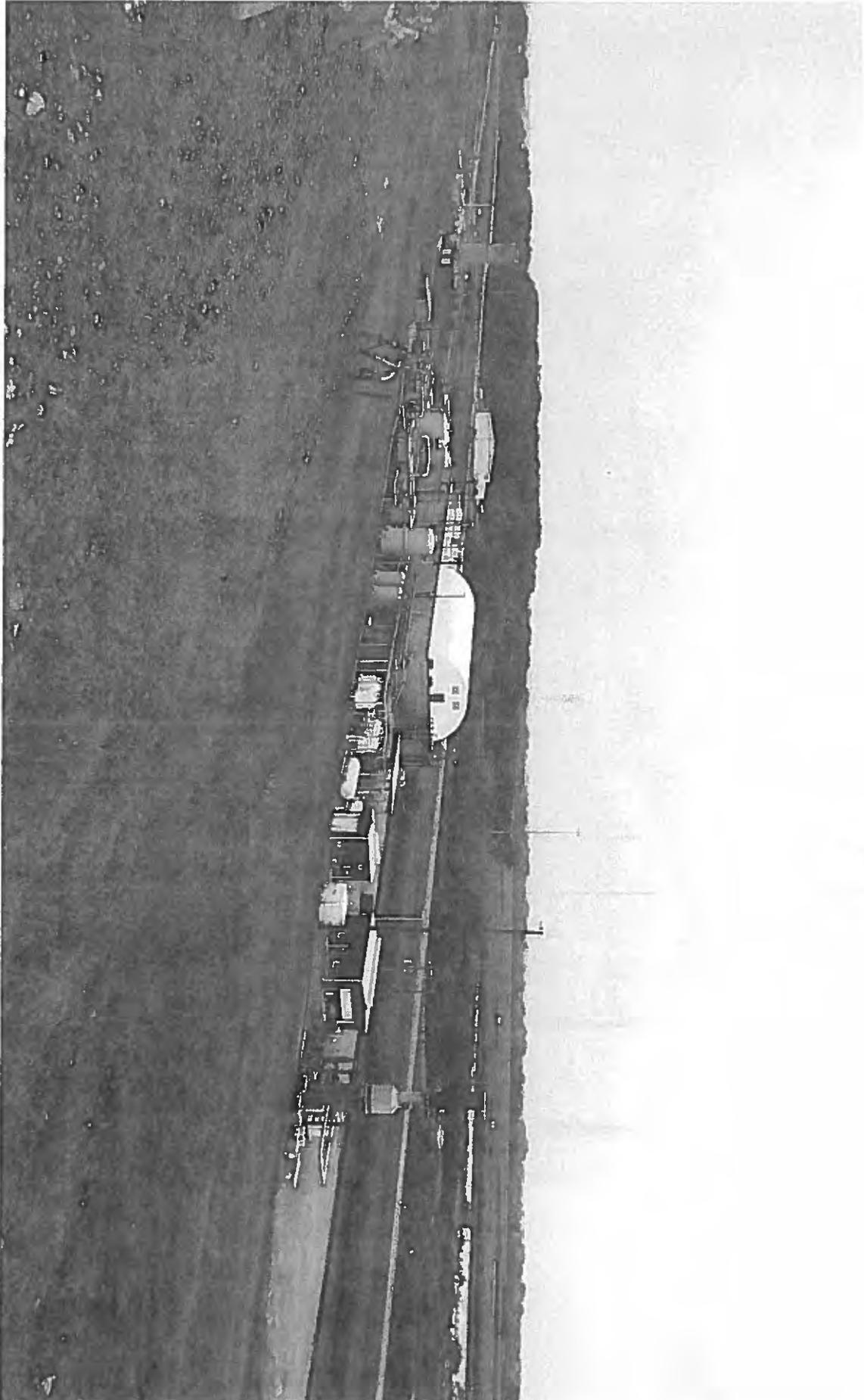
THE DESIGN AND PRINT ARE THE  
INTELLECTUAL PROPERTY OF  
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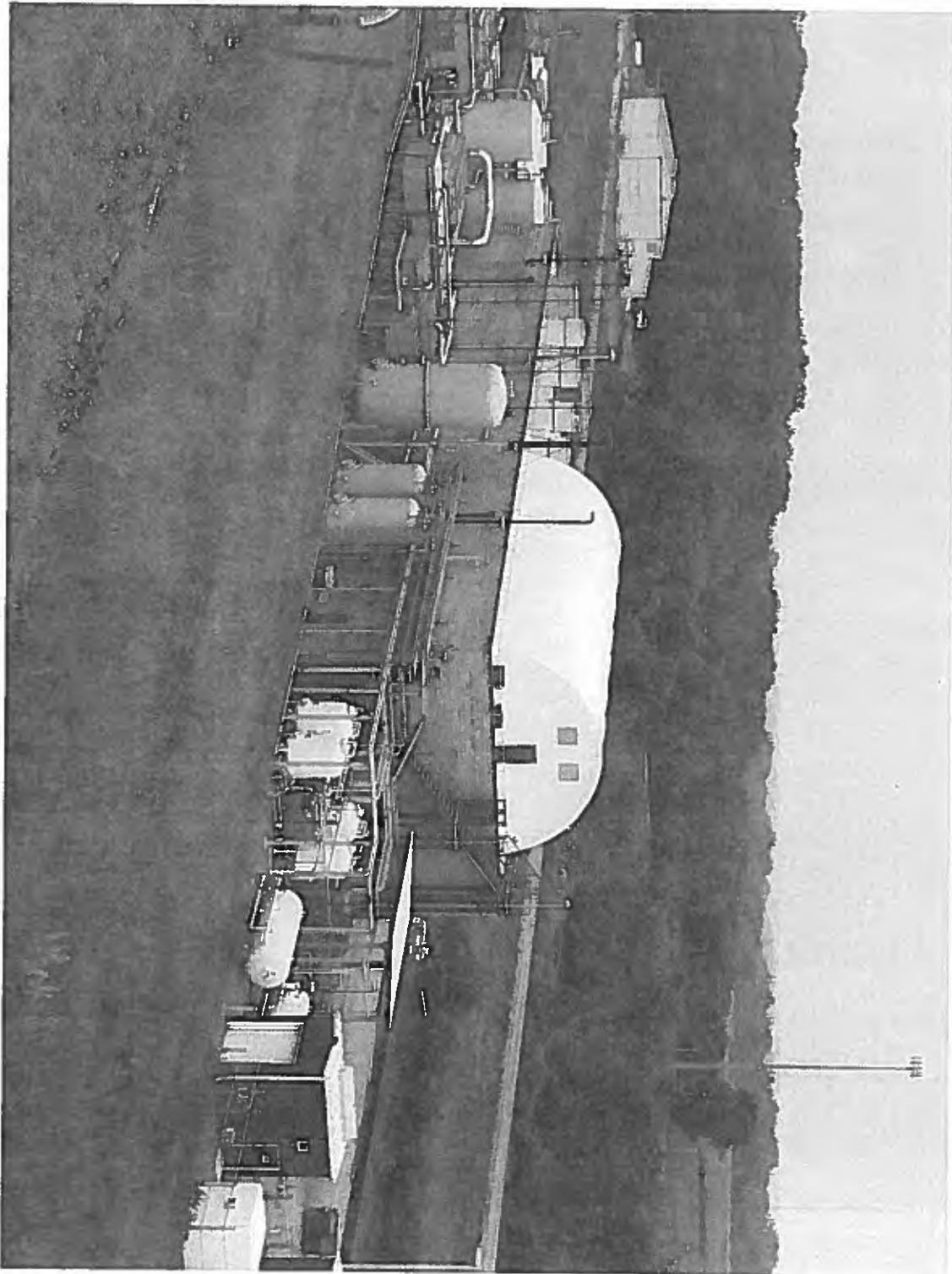
**Photographs**

# MILAM HIGH BTU PLANT

East St. Louis Illinois

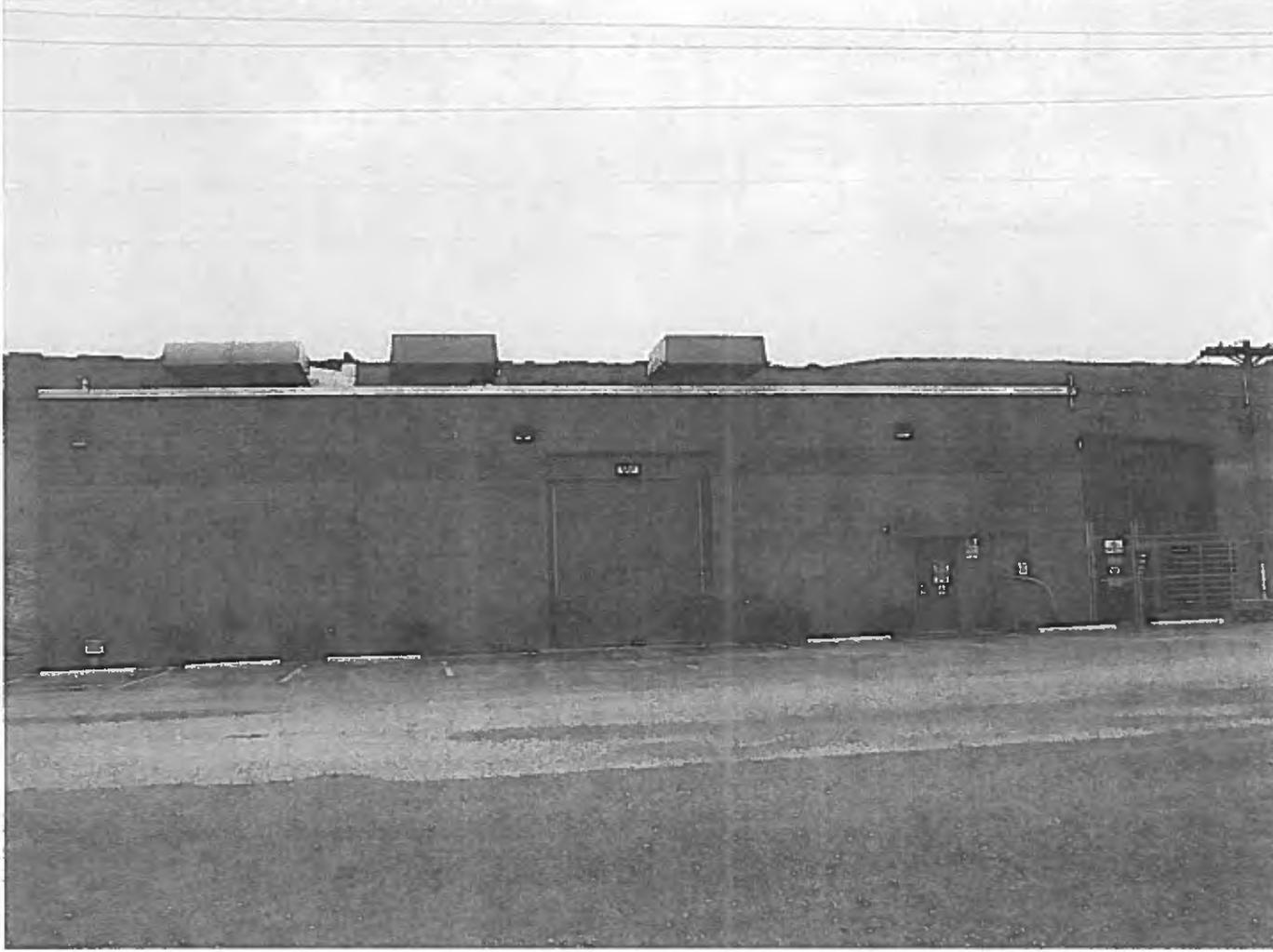
# View from the Land Fill





closer look

# 3516 Engine Plant powers the HBTU plant



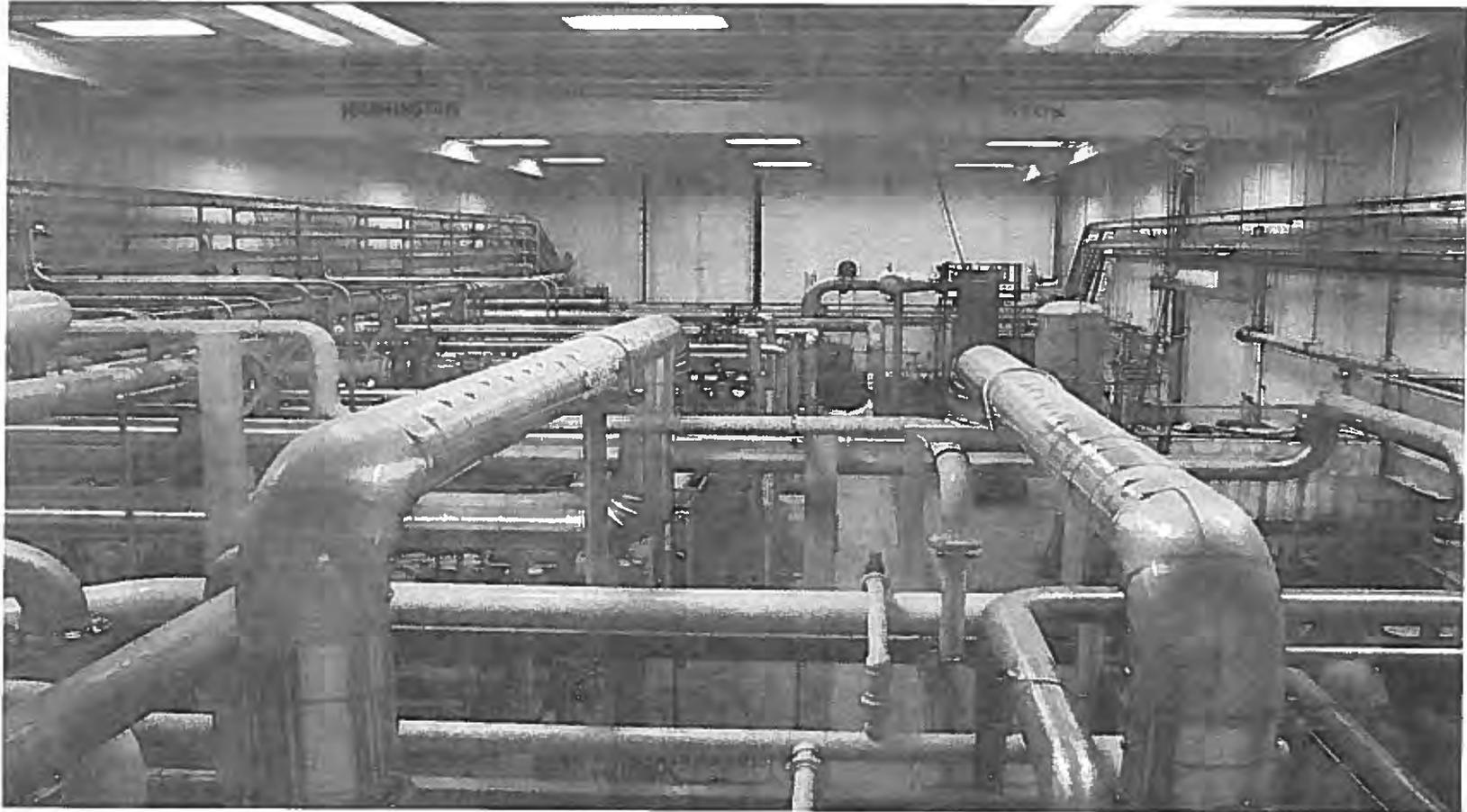


Shared inlet sump



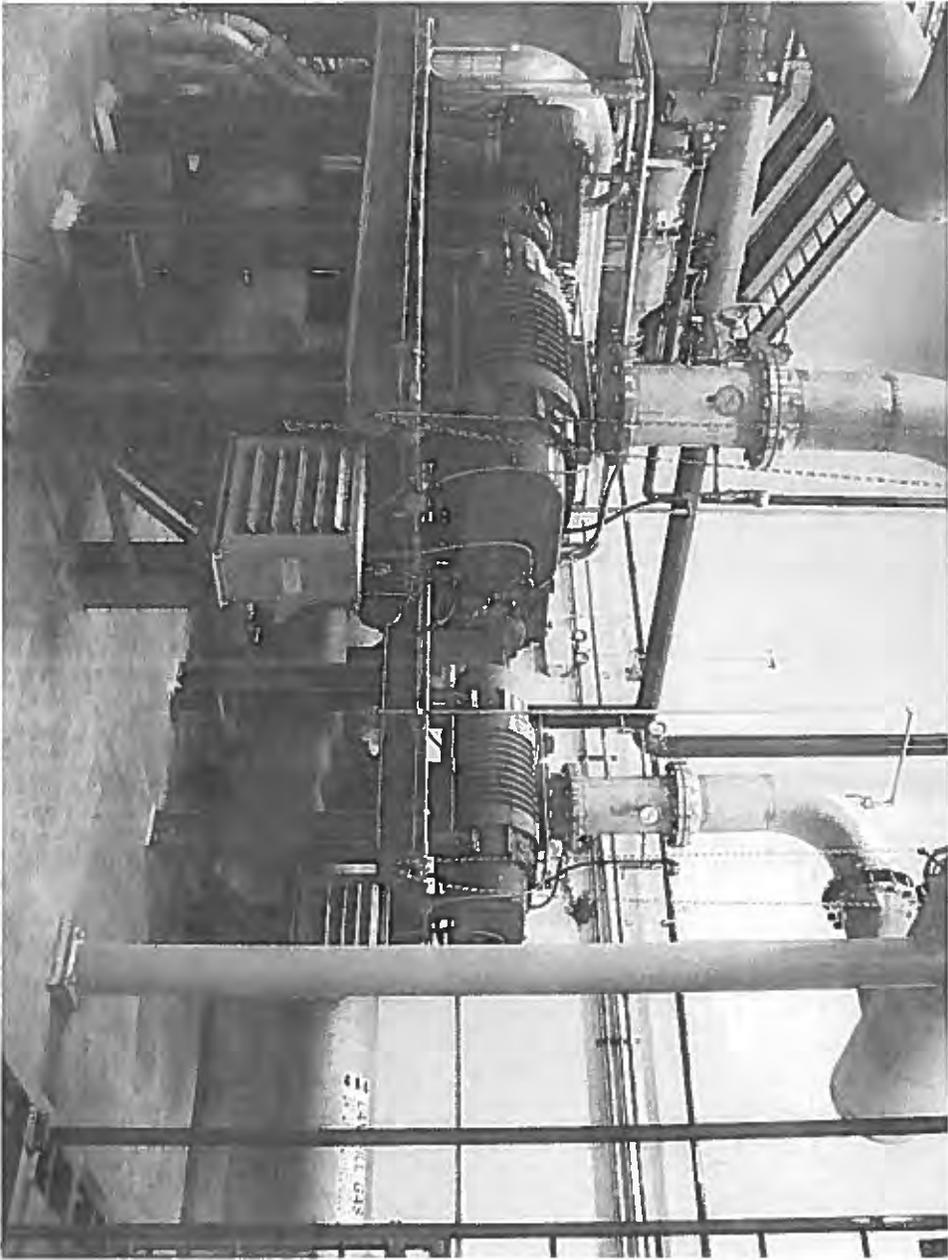
**Inlet into the Plant**

# Inside the HBTU Plant



View from the control room

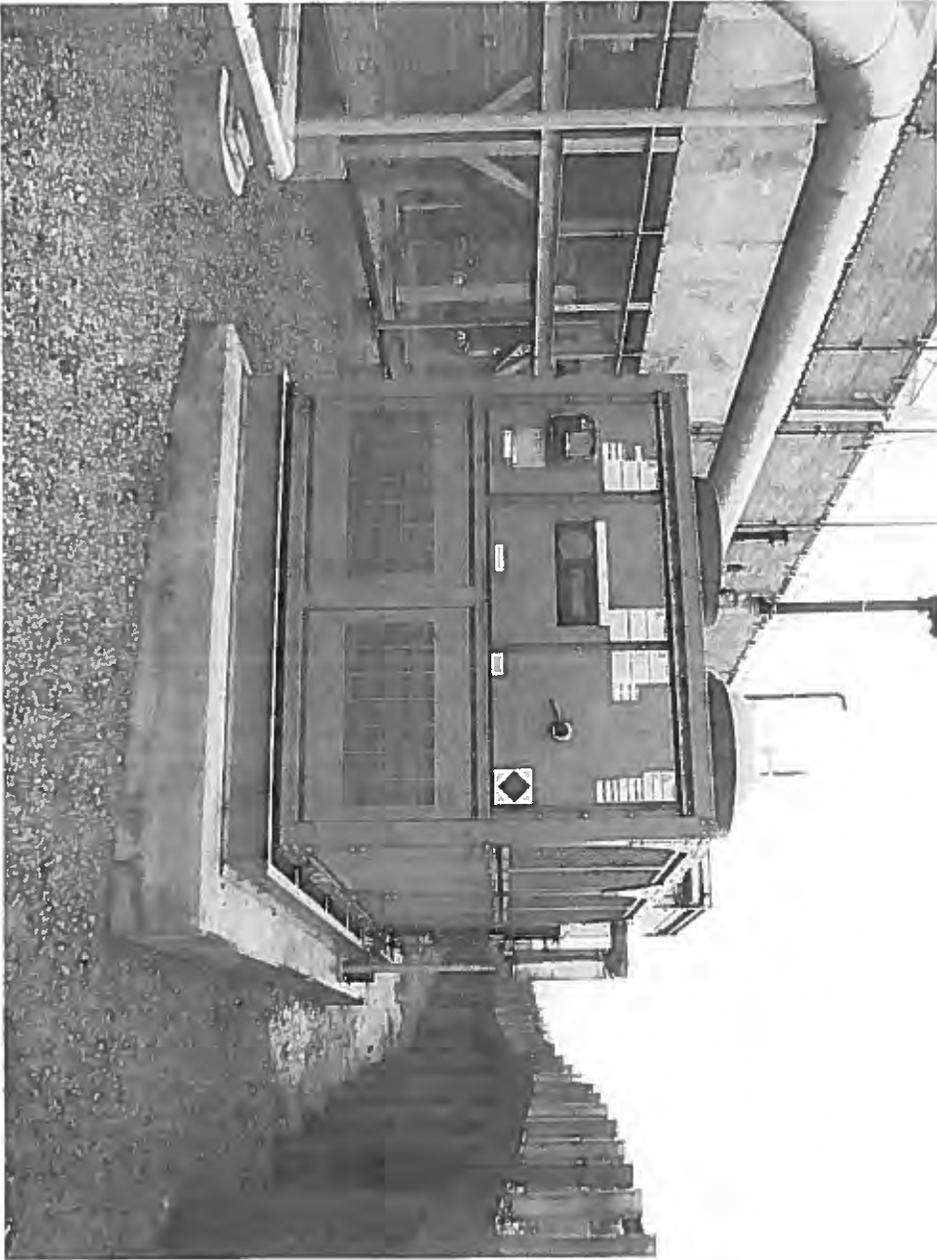
# Primary Blowers Tuthills



# Sulfa Treat Tanks



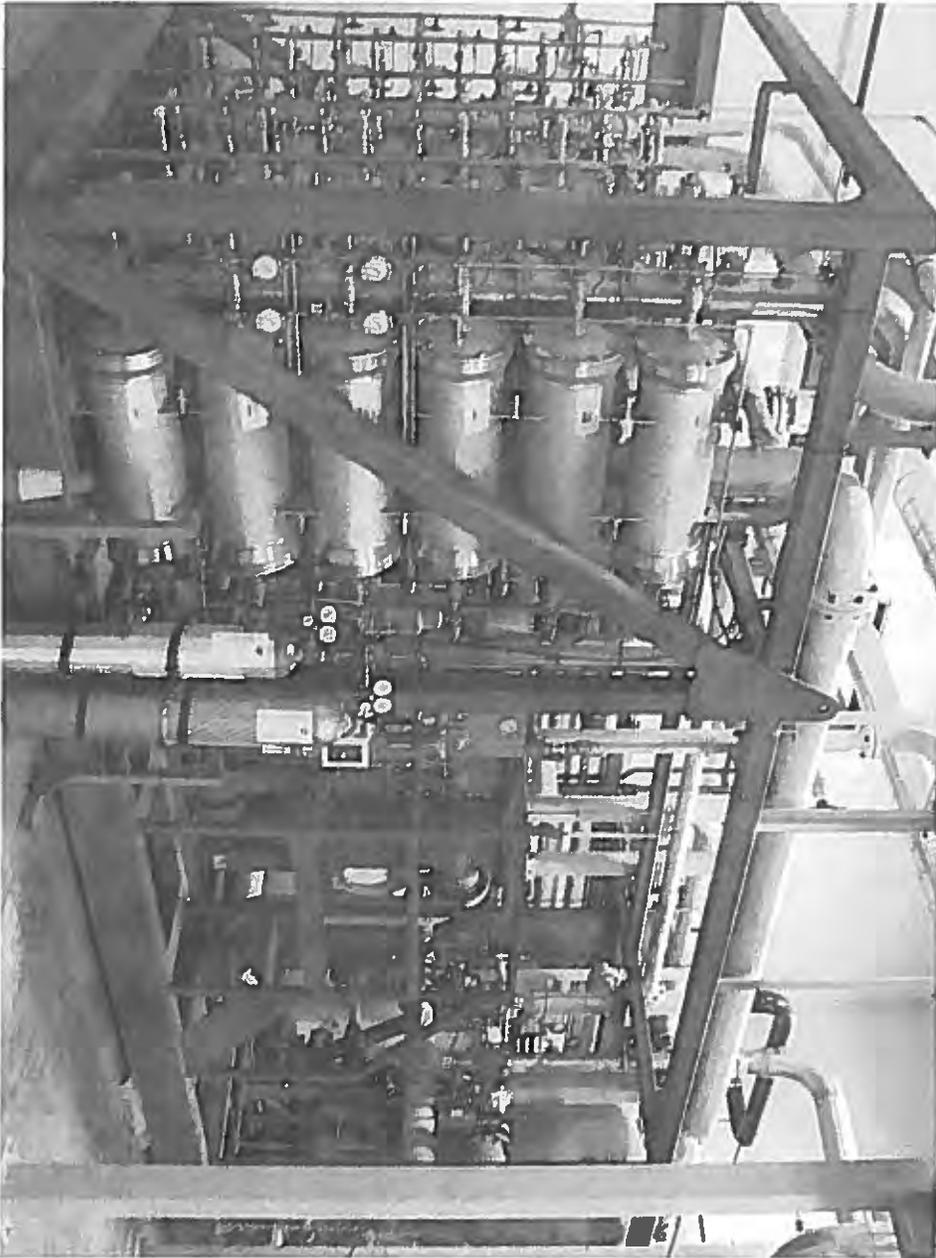
# Chiller



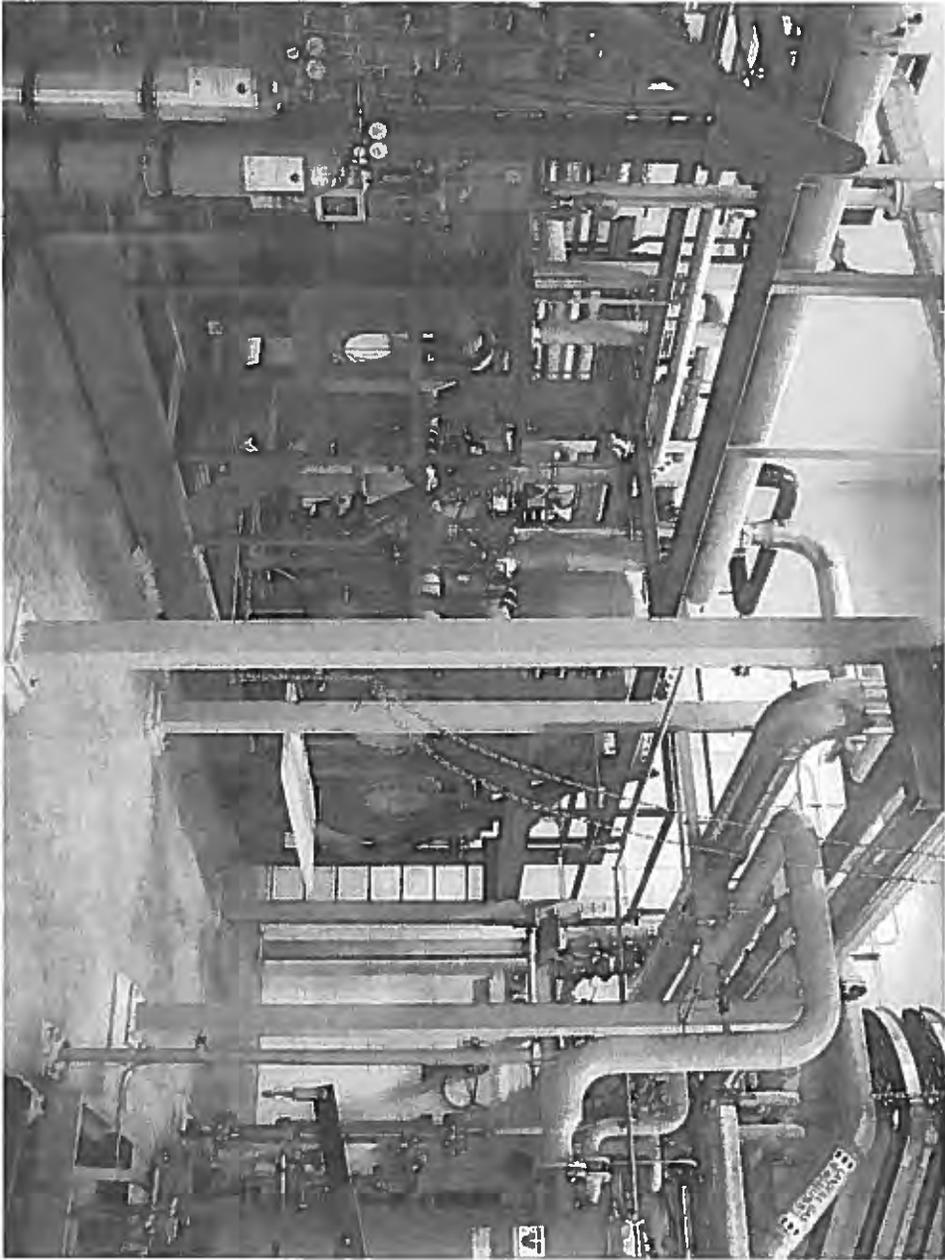
# 1<sup>st</sup> Stage compressors to 180 psi



# Air Liquide CO2 removal system



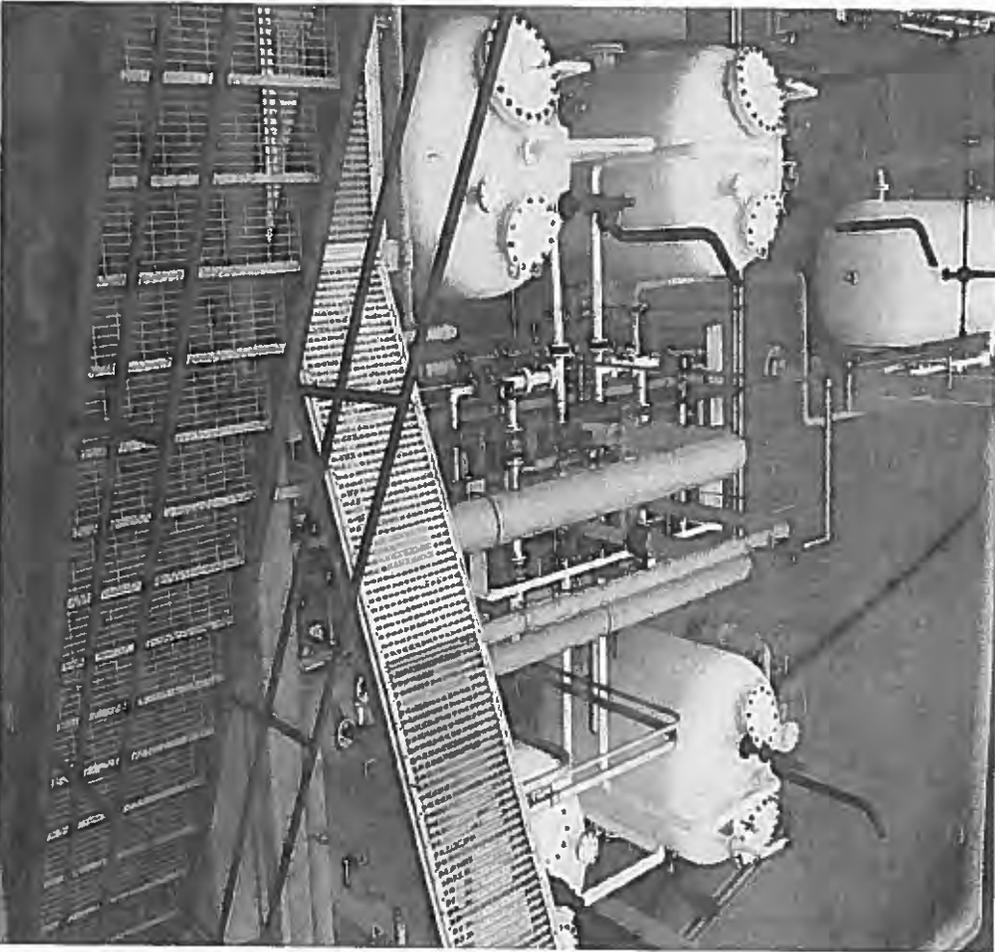
# Siloxane stripping PSA

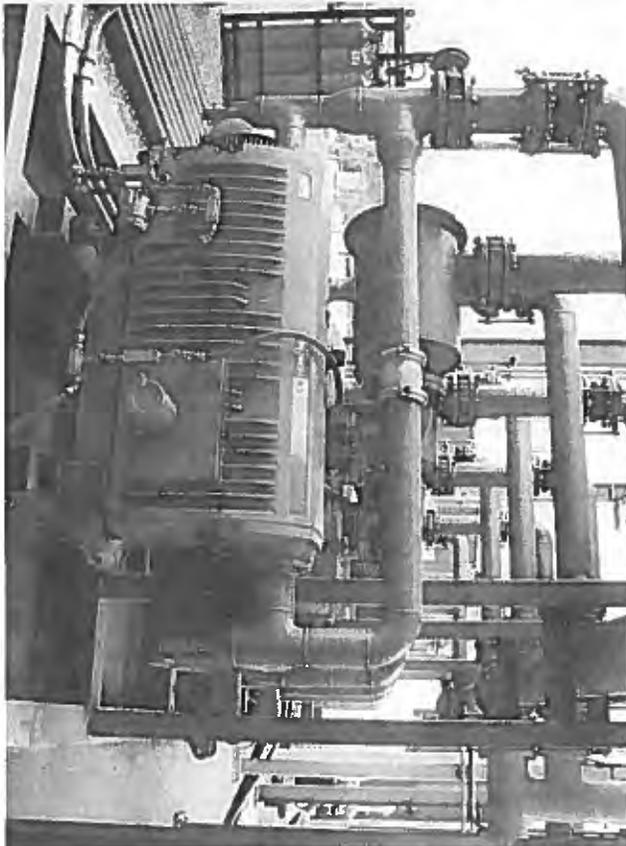
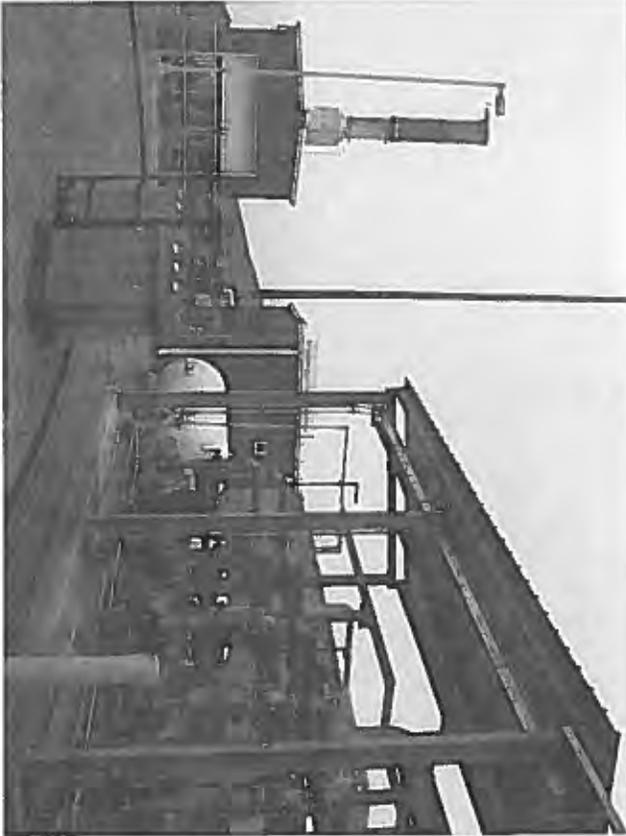


# VOC Carbon Removal Vessels



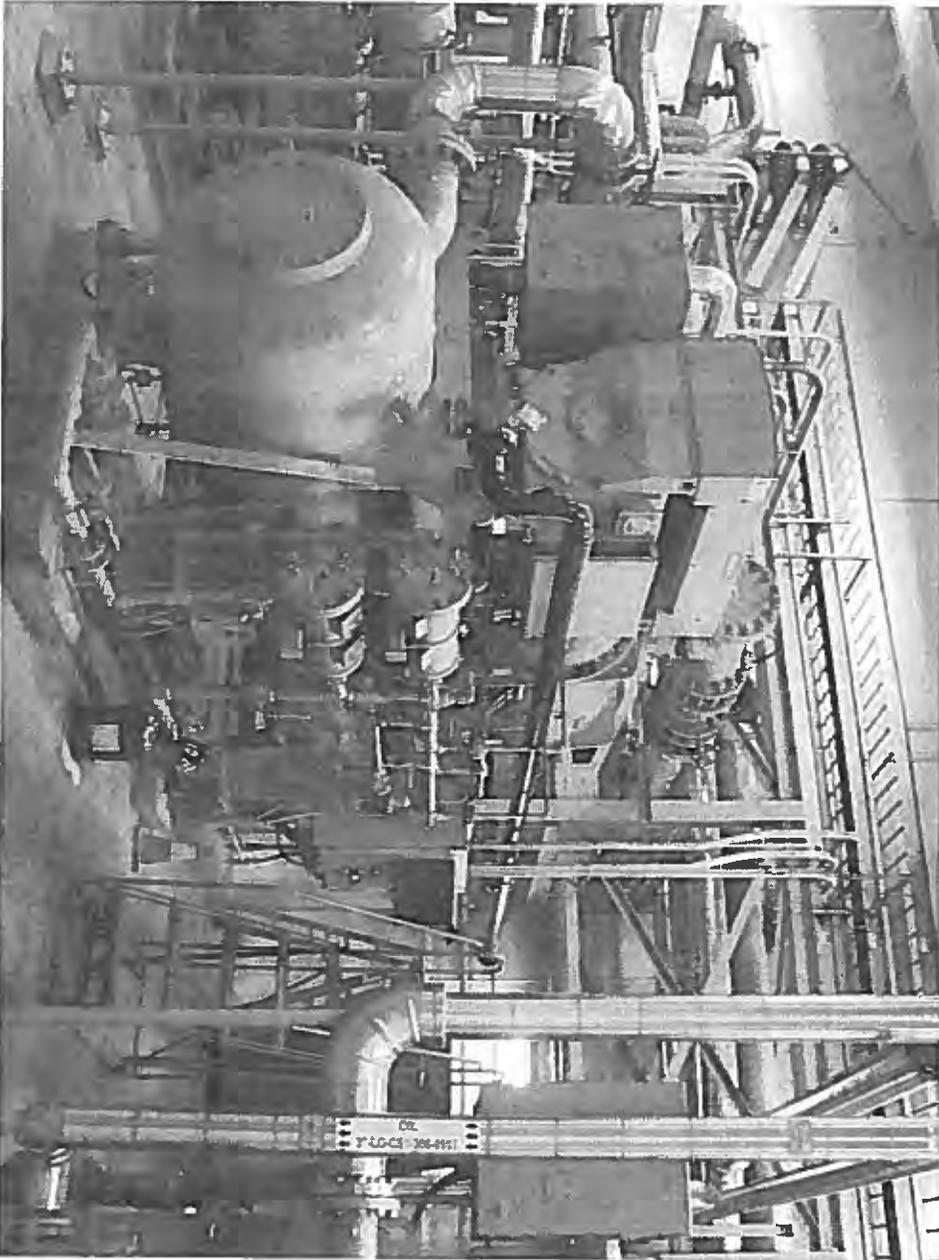
# ARI N2 and O2 Removal System 4 Vessels and 6 Vacuum pumps



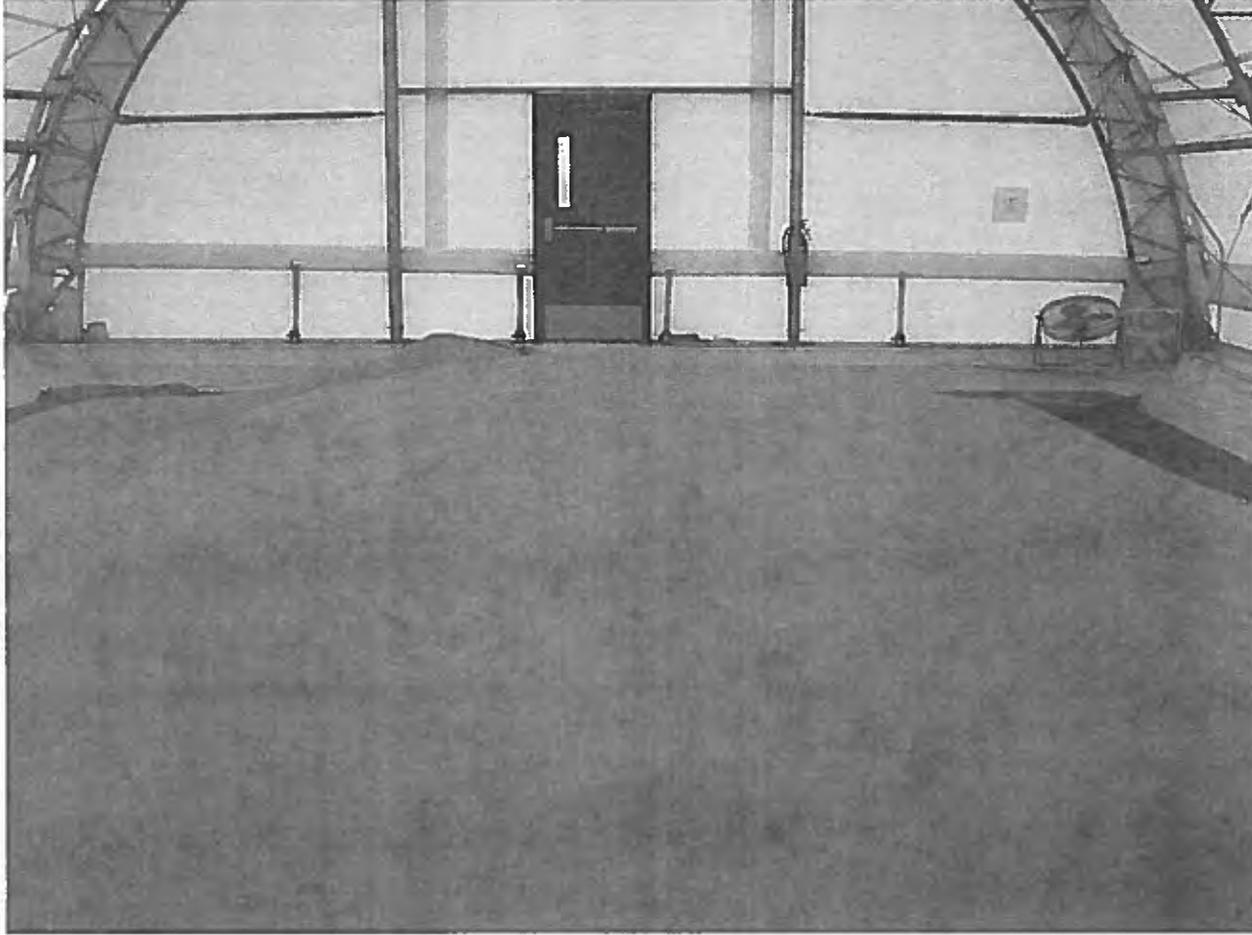


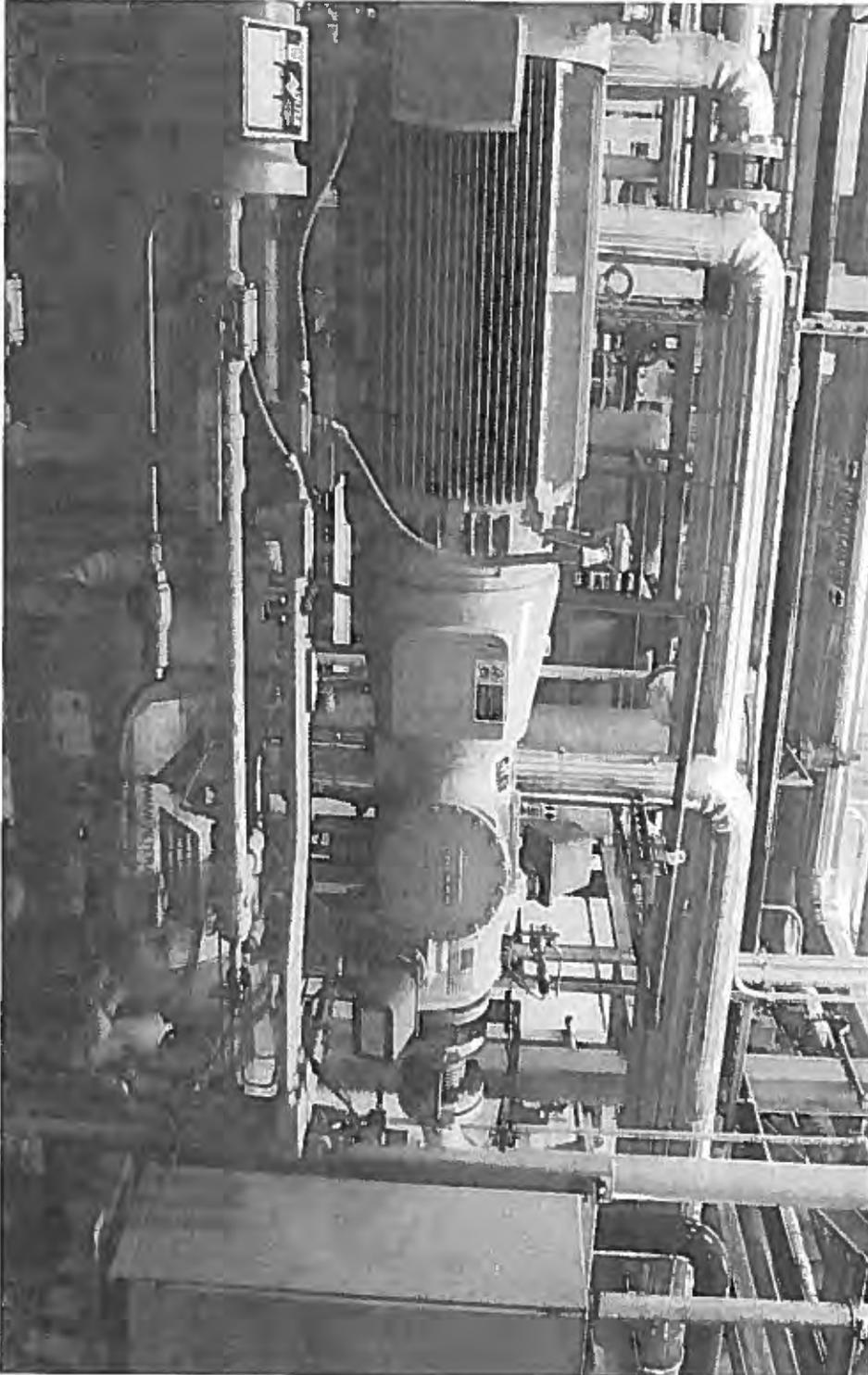
# Vacuum Pumps

# Recycle Compressor feeds ARI and Buffer Bag



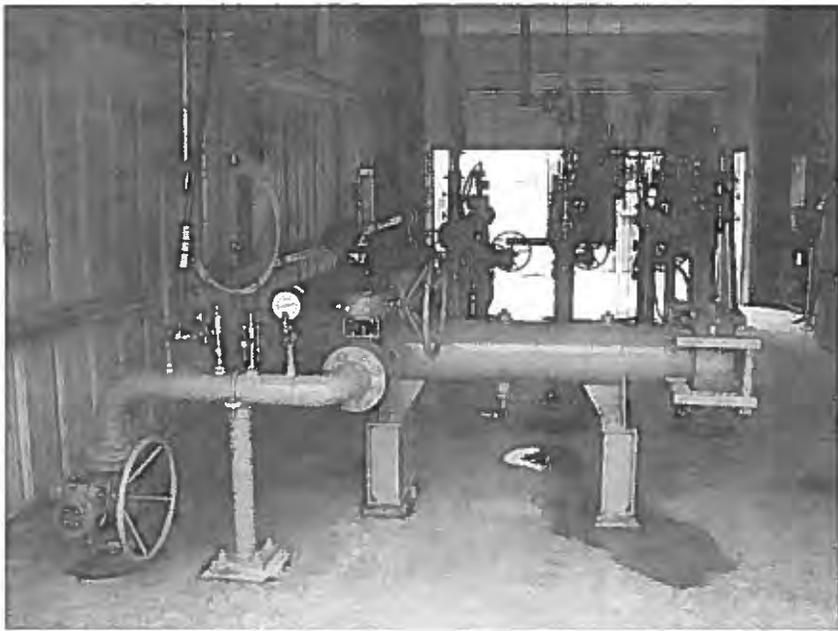
# Buffer Bag deflated



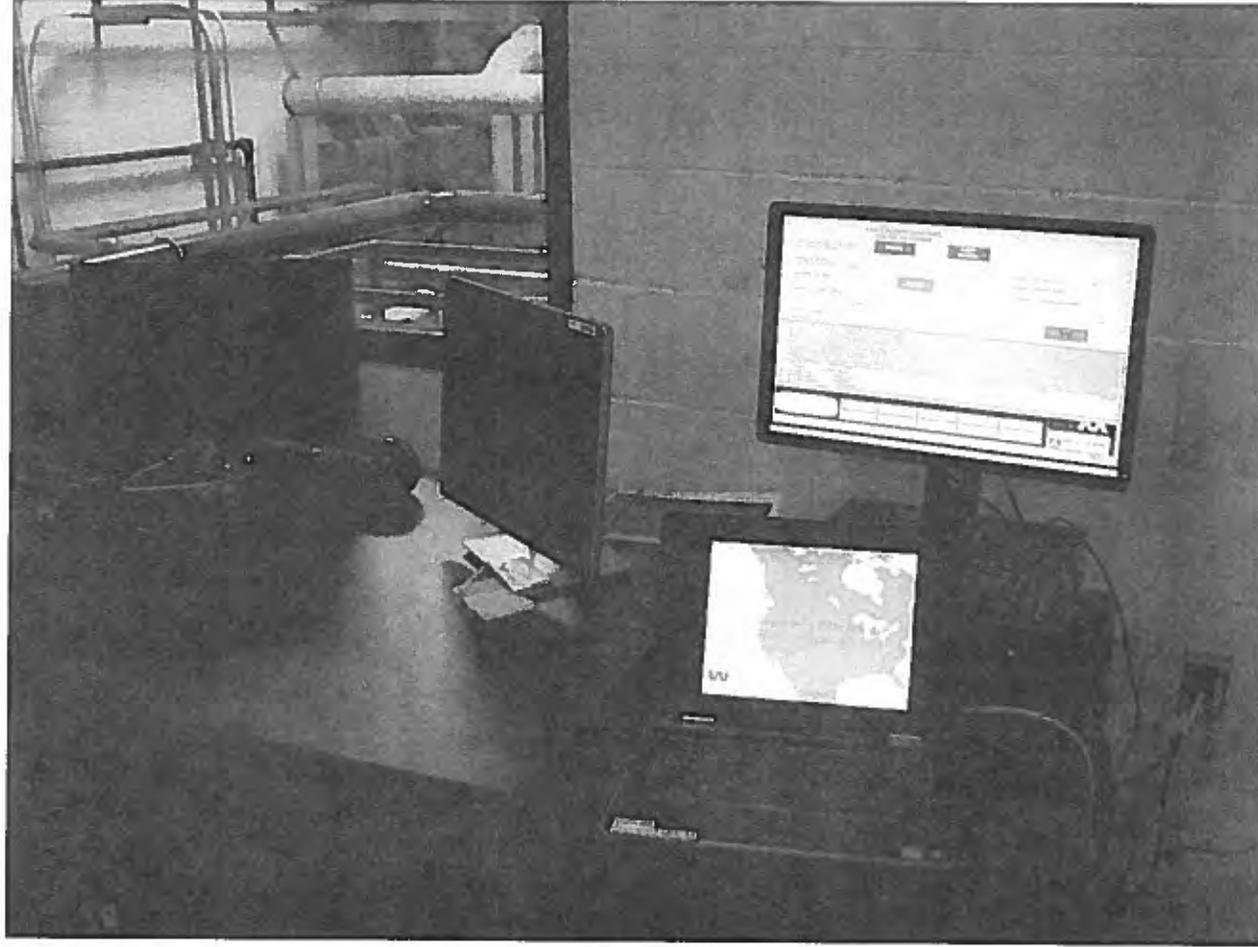


**Sales gas compressor to 300 psi**

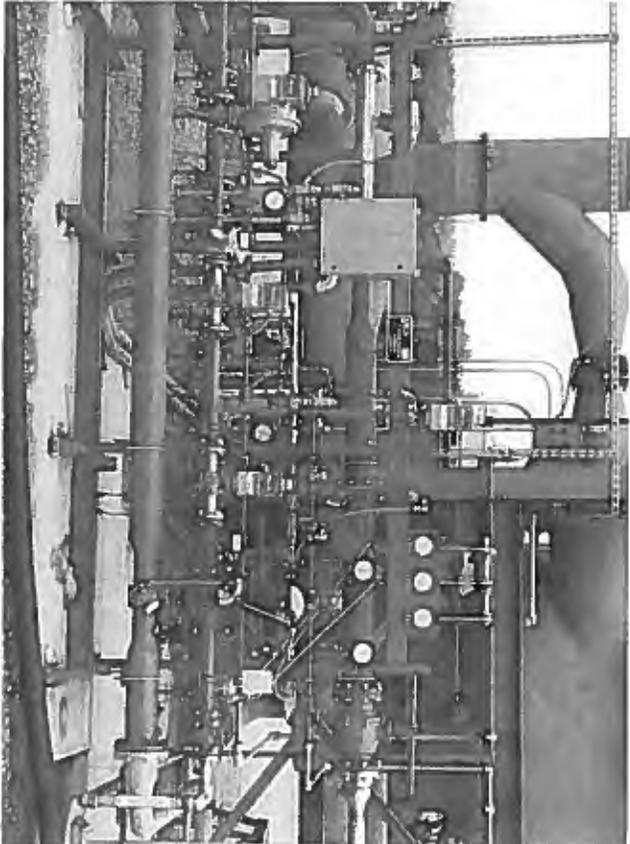
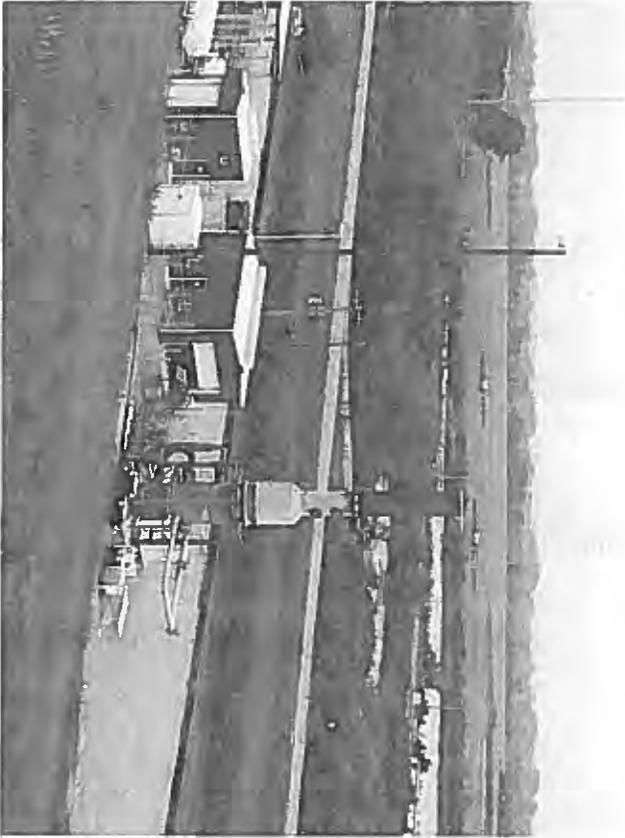
# Gas Pipeline feed Metering



# Control room screens



# Thermal Oxidizer and fuel piping





**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY**

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

BRUCE RAUNER, GOVERNOR

ALEC MESSINA, ACTING DIRECTOR

Date: August 1, 2017  
To: Robb Layman, Assistant Counsel  
From: Bob Bernoteit, Unit Manager *EB*  
Subject: WM Illinois Renewable Energy  
Milam Recycling and Disposal Facility

The Illinois EPA received a request on June 29, 2017, from WM Illinois Renewable Energy, LLC, for an Illinois EPA recommendation regarding tax certification of air pollution control facilities pursuant to 35 Ill. Adm. Code 125.204. In consultation with my staff, I approve the following recommendation:

The air pollution control facilities in this request operate at the Milam Recycling and Disposal facility in Milam, Illinois and include the following:

Landfill Gas Fuel Preparation, which consist of process-related equipment for sulfur, carbon dioxide and nitrogen gas removal, as well as final fuel preparation, that will act to prepare landfill gases for distribution to a natural gas pipeline, thus preventing or reducing impurities that might otherwise be emitted to the atmosphere. Because the primary purpose of the process-related equipment is to prevent or reduce air pollution, the equipment and associated building can be certified as a pollution control facility.

This facility is located at 601 Madison Road, East St. Louis.  
The parcel number is 02-05-.0-200-006.

Based on the information included in this submittal, it is the Division of Air Pollution Control's engineering judgment that the proposed facility may be considered "Pollution Control Facilities" under 35 IAC 125.200(a), with the primary purpose of preventing or reducing air pollution and is therefore eligible for tax certification from the Illinois Pollution Control Board. Therefore, it is the Illinois EPA's recommendation that the Board issue the requested tax certification for this facility.

*Exhibit B*