

# Iowa Department of Natural Resources Air Quality Construction Permit

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## Permit Holder

**Firm:** Interstate Power and Light Company –Sutherland Generating Station

**Contact:**

Alan Arnold  
Senior Environmental Specialist

(319) 786-4476

PO Box 351  
Cedar Rapids, IA 52406

**Responsible Party:**

Dale Withers  
Vice President Construction

PO Box 351  
Cedar Rapids, IA 52406

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## Permitted Equipment

**Emission Unit(s):** Emergency Generator (EU 250; 2,937 bhp; 2,000 KW; 138 gal/hr)

**Control Equipment:** None

**Emission Point:** 250

**Equipment Location:** 3001 East Main Street  
Marshalltown, IA 50158

**Plant Number:** 64-01-012

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Permit No.	Proj. No.	Description	Date	Testing
08-A-544-P	07-602	Original PSD permit.		No

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Under the Direction of the Director of  
the Department of Natural Resources

## PERMIT CONDITIONS

The permit holder, owner and operator of the facility shall assure that the installation, operation, and maintenance of this equipment is in compliance with all of the conditions of this permit and all other applicable requirements. This permit and its provisions are subject to the appeal rights set forth in Iowa Administrative Code (IAC), rule 561—7.5.

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### 1. Departmental Review

This permit is issued based on information submitted by the applicant. Any misinformation, false statements or misrepresentations by the applicant shall cause this permit to be void. In addition, the applicant may be subject to criminal penalties according to Iowa Code Section 455B.146A.

This permit is issued under the authority of 567 Iowa Administrative Code (IAC) 22.3. The proposed equipment has been evaluated for conformance with Iowa Code Chapter 455B; 567 IAC Chapters 20 – 34; and 40 CFR Parts 51, 52, 60, 61, and 63 and has the potential to comply.

No review has been undertaken on the engineering aspects of the equipment or control equipment other than the potential of that equipment for reducing air contaminant emissions. The DNR assumes no liability, directly or indirectly, for any loss due to damage to persons or property caused by, resulting from, or arising out of the design, installation, maintenance or operation of the proposed equipment.

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### 2. Transferability

As limited by 567 IAC 22.3(3)"F", this permit is not transferable from one location to another or from one piece of equipment to another, unless the equipment is portable. When portable equipment for which a permit has been issued is to be transferred from one location to another, the DNR shall be notified in writing at least thirty (30) days prior to transferring to the new location (See Permit Condition 8.A.6). The owner will be notified at least ten (10) days prior to the scheduled relocation if the relocation will cause a violation of the National Ambient Air Quality Standards (NAAQS). In such case, a supplements permit shall be required prior to the initiation of construction of additional control equipment or equipments modifications needed to meet the standards.

The permit is for the construction and operation of specific emission unit(s), control equipment, and emission point as described in this permit and in the application for this permit. Any owner or operator of the specified emission unit(s), control equipment, or emission point, including any person who becomes an owner or operator subsequent to the date on which this permit is issued, is responsible for compliance with the provisions of this permit. No person shall construct, install, reconstruct or alter this emissions unit, control equipment or emission point without the required revisions to this permit.

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### 3. Construction

It is the owner's responsibility to ensure that construction conforms to the final plans and specifications as submitted, and that adequate operation and maintenance is provided to ensure that no condition of air pollution is created.

This permit shall become void if any one of the following conditions occur:

- (1) the construction or modification of the proposed project, as it affects the emission point(s) permitted herein, is not initiated within eighteen (18) months after the permit issuance date; or
- (2) the construction or modification of the proposed project, as it affects the emission point(s) permitted herein, is not completed within fifty-four (54) months after the permit issuance date; or
- (3) the construction or modification of the proposed project, as it affects the emission point(s) permitted herein, is not completed within a time period specified elsewhere in this permit.

### **3. Construction (Continued)**

#### **3.a. Original Permits**

The owner or operator shall obtain a new permit if any changes are made to the final plans and specifications submitted for the proposed project.

#### **3.b. Modified or Supplemental Permits**

This permit supersedes any and all previous permits issued for the emission point(s) or emission unit(s) permitted herein.

However, the permittee may continue to act under the provisions of the previous permit for the emission point(s) or emission unit(s) until one of the following conditions occurs:

- (1) The proposed project authorized by this permit is completed as it affects the emission point(s) permitted herein; or
- (2) The permit becomes void.

The owner or operator shall obtain a new permit if:

- (1) Any changes are made to the final plans and specifications submitted for the proposed project; or
- (2) This permit becomes void.

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### **4. Credible Evidence**

As stated in 567 IAC 21.5 and also in 40 CFR Part 60.11(g), where applicable, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any provisions specified in this permit or any provisions of 567 IAC Chapters 20 through 34.

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### **5. Owner Responsibility**

Issuance of this permit shall not relieve the owner or operator of the responsibility to comply fully with applicable provisions of the State Implementation Plan (SIP), and any other requirements of local, state, and federal law.

The owner or operator of any emission unit or control equipment shall maintain and operate the equipment and control equipment at all times in a manner consistent with good practice for minimizing emissions, as required by paragraph 567 IAC 24.2(1) "*Maintenance and Repair*".

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### **6. Excess Emissions**

Excess emissions during a period of startup, shutdown, or cleaning of control equipment are not a violation of the emission standard if it is accomplished expeditiously and in a manner consistent with good practice for minimizing emissions except when another regulation applicable to the unit or process provides otherwise. Cleaning of control equipment, which does not require the shutdown of process equipment, shall be limited to one six-minute period per one-hour period. An incident of excess emissions other than the above is a violation and may be subject to criminal penalties according to Iowa Code 455B.146A. If excess emissions are occurring, either the control equipment causing the excess shall be repaired in an expeditious manner, or the process generating the emissions shall be shutdown within a reasonable period of time, as specified in 567 IAC 24.1.

An incident of excess emissions shall be orally reported to the appropriate DNR field office within eight (8) hours of, or at the start of, the first working day following the onset of the incident (See section 8.B.1). A written report of an incident of excess emissions shall be submitted as a follow-up to all required oral reports within seven (7) days of the onset of the upset condition.

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## 7. Disposal of Contaminants

The disposal of materials collected by the control equipment shall meet all applicable rules.

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## 8. Notification, Reporting, and Recordkeeping

- A. The owner shall furnish the DNR the following written notifications:
1. The date construction, installation, or alteration is initiated postmarked within thirty (30) days following initiation of construction, installation, or alteration;
  2. The actual date of startup, postmarked within fifteen (15) days following the start of operation;
  3. The date of each compliance test required by Permit Condition 12, at least thirty (30) days before the anticipated compliance test date;
  4. The date of each pretest meeting, at least fifteen (15) days before the proposed meeting date. The owner shall request a proposed test plan protocol questionnaire at least sixty (60) days prior to each compliance test date. The completed questionnaire shall be received by the DNR at least fifteen (15) days before the pretest meeting date;
  5. Transfer of equipment ownership, within 30 days of the occurrence;
  6. Portable equipment relocation, at least thirty (30) days before equipment relocation.
- B. The owner shall furnish the DNR with the following reports:
1. Oral excess emissions reports, in accordance with 567 IAC 24.1;
  2. A written compliance demonstration report for each compliance testing event, whether successful or not, postmarked not later than six (6) weeks after the completion of the test period unless other regulations provide for other notification requirements. In that case, the more stringent reporting requirement shall be met;
  3. Operation of this emission unit(s) or control equipment outside of those limits specified in Permit Conditions 10 and 14 and according to the schedule set forth in 567 IAC 24.1.
- C. The owner shall send correspondence regarding this permit to the following address:
- Construction Permit Supervisor  
Air Quality Bureau  
Iowa Department of Natural Resources  
7900 Hickman Road, Suite 1  
Urbandale, IA 50322  
Telephone: (515) 281-8189  
Fax: (515) 242-5094
- D. The owner shall send correspondence concerning stack testing to:
- Stack Testing Coordinator  
Air Quality Bureau  
Iowa Department of Natural Resources  
7900 Hickman Road, Suite 1  
Urbandale, Iowa 50322  
Telephone: (515) 242-6001  
FAX: (515) 242-5127
- E. The owner shall send reports and notifications to:

Compliance Unit Supervisor Air Quality Bureau Iowa Department of Natural Resources 7900 Hickman Road, Suite 1 Urbandale, IA 50322 Telephone: (515) 281-8448 Fax: (515) 242-5127	Field Office 5 401 SW 7 <sup>th</sup> Suite 1 Des Moines, IA 50309 Telephone: (515) 725-0268 Fax: (515) 725-0218
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## 8. Notification, Reporting, and Recordkeeping (Continued)

- F. All data, records, reports, documentation, construction plans, and calculations required under this permit shall be available at the plant during normal business hours for inspection and copying by federal, state, or local air pollution regulatory agencies and their authorized representatives, for a minimum of two (2) years from the date of recording.

## 9. Permit Violations

Knowingly committing a violation of this permit may carry a criminal penalty of up to \$10,000 per day fine and 2 years in jail according to Iowa Code Section 455B.146A.

### 10a. Best Available Control Technology (BACT) Emission Limits

Pollutant	Tons/Yr <sup>1</sup>	Additional Limits
Particulate Matter (PM)	0.05	0.15 g/bhp-hr <sup>2</sup>
PM <sub>10</sub>	0.05	0.15 g/bhp-hr <sup>2</sup>
Opacity	NA	5% <sup>3</sup>
Sulfur Dioxide (SO <sub>2</sub> )	0.06	0.17 g/bhp-hr <sup>2,4</sup>
Nitrogen Oxides (NO <sub>x</sub> )	1.46	4.5 g/bhp-hr <sup>2</sup>
Volatile Organic Compounds	0.10	0.3 g/bhp-hr <sup>2</sup>
Carbon Monoxide (CO)	0.84	2.6 g/bhp-hr <sup>2</sup>
Sulfuric Acid Mist (H <sub>2</sub> SO <sub>4</sub> )	0.08	0.24 g/bhp-hr <sup>2</sup>
Fluorine (F)	0.003	0.008 g/bhp-hr <sup>2</sup>
Total Reduced Sulfur (TRS)	0.03	0.08 g/bhp-hr <sup>2</sup>

<sup>1</sup> Standard is a 12-month rolling total and based on an annual operating limit of 100 hours per year.

<sup>2</sup> Standard is expressed as the average of 3 test runs.

<sup>3</sup> Standard is expressed as a six-minute average and applies only during normal operation. A standard of 20% opacity applies during times of start-up, shutdown and malfunction.

<sup>4</sup> Standard corresponds to the use of diesel fuel containing no more than 0.05% by weight sulfur.

### 10b. NSPS and NESHAP Emission Limits

Pollutant	Limit	Reference (567 IAC)
Federal Particulate Matter	0.15 g/bhp-hr <sup>1,2</sup>	23.1(2)"yyy" <sup>3</sup>
Visible Emissions (Opacity)	See Footnote 4	23.1(2)"yyy" <sup>3</sup>
Nitrogen Oxides (NO <sub>x</sub> ) + Non-Methane Hydrocarbons (NMHC)	4.8 g/bhp-hr <sup>1,5</sup>	23.1(2)"yyy" <sup>3</sup>
Carbon Monoxide (CO)	2.6 g/bhp-hr <sup>1,6</sup>	23.1(2)"yyy" <sup>3</sup>
Fuel Sulfur Requirements beginning 10/01/2007 <sup>7</sup>	Max 500 ppm Sulfur and Min Cetane Index = 40 or Max Aromatic content = 35% <sub>vol</sub>	23.1(2)"yyy" <sup>3</sup>
Fuel Sulfur Requirements beginning 10/01/2010 <sup>8</sup>	Max 15 ppm Sulfur and Min Cetane Index = 40 or Max Aromatic content = 35% <sub>vol</sub>	23.1(2)"yyy" <sup>3</sup>

<sup>1</sup> Standard is expressed as the average of 3 test runs.

<sup>2</sup> 0.15 grams/bhp-hr = 0.20 grams/KW-hr.

<sup>3</sup> Iowa reference to Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 CFR §60.4200 – 40 CFR §60.4219) of the New Source Performance Standards (NSPS).

<sup>4</sup> Per 40 CFR §60.4205(b), 40 CFR §60.4202(a)(2), and 40 CFR §89.113, opacity shall not exceed:

- 20% during the acceleration mode,
- 15% during the lugging mode, and
- 50% during the peaks in either the acceleration or lugging modes

<sup>5</sup> 4.8 grams/bhp-hr = 6.4 grams/KW-hr.

<sup>6</sup> 2.6 grams/bhp-hr = 3.5 grams/KW-hr.

<sup>7</sup> See 40 CFR §60.4207(a) which refers one to 40 CFR §80.510(a).

<sup>8</sup> See 40 CFR §60.4207(b) which refers one to 40 CFR §80.510(b).

### 10c. Other Emission Limits

Pollutant	lb/hr <sup>1</sup>	tons/yr <sup>2</sup>	Additional Limits	Reference (567 IAC)
Particulate Matter (PM)	NA	NA	NA	NA
PM <sub>10</sub>	0.24 <sup>3,4</sup>	NA	NA	PSD Significance
Opacity	NA	NA	NA	NA
Sulfur Dioxide (SO <sub>2</sub> )	0.98 <sup>3</sup>	NA	NA	PSD Significance
Nitrogen Oxides (NO <sub>x</sub> )	NA	NA	NA	NA
Volatile Organic Compounds	NA	NA	NA	NA
Carbon Monoxide (CO)	3.44 <sup>3</sup>	NA	NA	PSD Significance
Lead (Pb)	NA	NA	NA	NA
Fluorine (F)	0.006 <sup>5</sup>	NA	NA	Ambient impacts
Total Reduced Sulfur (TRS)	0.52 <sup>5</sup>	NA	NA	Ambient impacts

<sup>1</sup> Standard is expressed as the average of three (3) runs.

<sup>2</sup> Standard is a 12-month rolling total.

<sup>3</sup> Emission rate used in dispersion modeling to demonstrate Project Number 07-602 predicted ambient air concentrations below the applicable Prevention of Significant Deterioration (PSD) significant impact levels. Therefore, a full impact modeling analysis is not required.

<sup>4</sup> Sulfuric acid mist (SAM, H<sub>2</sub>SO<sub>4</sub>) was accounted for in the modeled PM<sub>10</sub> emission rate.

<sup>5</sup> Emission rate used in the computer aided dispersion modeling to show the ambient air impact concentrations.

### 11. Emission Point Characteristics

This emission point shall conform to the specifications listed below:

Parameter	Value
Stack Height, (ft, from the ground)	10
Discharge Style	Unobstructed vertical
Stack Opening, (inches, dia.)	8
Exhaust Temperature (°F)	760
Exhaust Flowrate (scfm)	3,300

NOTE: The permit for this emission point is for a dual stack on the emission unit. Each stack has the same characteristics listed above. The dual stacks were modeled as EP 250A & 250B. The emission rates listed in Condition 10 are for the combined emissions from the combined stack.

The temperature and flow rate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that any of the emission point design characteristics are different than the values stated above, the owner/operator must notify the Department and obtain a permit amendment, if required.

## 12. Compliance Demonstration(s) and Performance Testing

Pollutant	Initial	Subsequent	Methodology	Frequency
PM (federal)	Yes <sup>1</sup>	No	Certification	One-time
PM (state)	No	No	NA	NA
PM <sub>10</sub>	No	No	NA	NA
Opacity	No	No	NA	NA
SO <sub>2</sub>	No	No	NA	NA
NO <sub>x</sub>	No	No	NA	NA
VOC	No	No	NA	NA
CO	Yes <sup>1</sup>	No	Certification	One-time
Pb	No	No	NA	NA
HAP	No	No	NA	NA
THC + NO <sub>x</sub>	Yes <sup>1</sup>	No	Certification	One-time

<sup>1</sup> Per 40 CFR §60.4211, the owner or operator must comply by purchasing an engine certified to the emission standards in 40 CFR §60.4204(b), 40 CFR §60.4205(b) or 40 CFR §60.4205 (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications.

**If an initial compliance demonstration specified above is testing**, the owner shall verify compliance with the emission limitations contained in Permit Condition 10 within sixty (60) days after achieving maximum production rate and no later than one hundred eighty (180) days after the initial startup date of the proposed equipment.

**If subsequent testing is specified above**, the owner shall verify compliance with the emission limitations contained in Permit Condition 10 according to the frequency noted above.

If testing is required, the owner shall use the test method and run time listed in the table below unless another testing methodology is approved by the Department prior to testing.

Pollutant	Test Run Time	Test Method
PM (federal)	1 hour	40 CFR 60, Appendix A, Method 5
PM (state)	1 hour	Iowa Compliance Sampling Manual Method 5
PM <sub>10</sub>	1 hour	40 CFR 51, Appendix M, 201A with 202
Opacity	1 hour	40 CFR 60, Appendix A, Method 9
SO <sub>2</sub>	1 hour	40 CFR 60, Appendix A, Method 6C
NO <sub>x</sub>	1 hour	40 CFR 60, Appendix A, Method 7E
VOC	1 hour	40 CFR 60, Appendix A, Method 25A
CO	1 hour	40 CFR 60, Appendix A, Method 10
Pb	1 hour	40 CFR 60, Appendix A, Method 12
Other		

The unit(s) being sampled should be operated in a normal manner at its maximum continuous output as rated by the equipment manufacturer, or the rate specified by the owner as the maximum production rate at which this unit(s) will be operated. In cases where compliance is to be demonstrated at less than the maximum continuous output as rated by the manufacturer, and it is the owner's intent to limit the capacity to that rating, the owner may submit evidence to the Department that this unit(s) has been physically altered so that capacity cannot be exceeded, or the Department may require additional testing, continuous monitoring, reports of operating levels, or any other information deemed necessary by the Department to determine whether this unit(s) is in compliance.

Each emissions compliance test must be approved by the Department. Unless otherwise specified by the Department, each test shall consist of three (3) separate runs. The arithmetic mean of three (3) acceptable test runs shall apply for compliance, unless otherwise indicated by the Department.

## 12. Compliance Demonstration(s) and Performance Testing (Continued)

A pretest meeting shall be held at a mutually agreeable site no less than fifteen (15) days prior to the date of each test. Representatives from the Department shall attend this meeting, along with the owner and the testing firm, if any. It shall be the responsibility of the owner to coordinate and schedule the pretest meeting. The owner shall be responsible for the installation and maintenance of test ports. The Department shall reserve the right to impose additional, different, or more detailed testing requirements.

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## 13. NSPS and NESHAP Applicability

This emission unit is subject to Subparts A (General Provisions, 40 CFR §60.1 – 40 CFR §63.19) and Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 CFR §60.4200 – 40 CFR §60.4219) of the New Source Performance Standards (NSPS).

This emission unit is also subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart ZZZZ - Stationary Reciprocating Internal Combustion Engines (40 CFR §63.6580 through 40 CFR §63.6675) and to NESHAP Subpart A - General Provisions (40 CFR §63.1 through 40 CFR §63.15) and is also subject to the requirements of 567 IAC 23.1(4)"cz". This generator is considered an Emergency Stationary Reciprocating Internal Combustion Engine (RICE) and is only subject to the initial notification requirements of 40 CFR §63.6645(d). By NESHAP definition, Emergency Stationary RICE may operate only 50 hour per year in non-emergency situations.

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## 14. Operating Limits

Operating limits for this emission unit shall be:

- A. This emission unit shall operate only in emergency situations or for routine maintenance and testing.
  - B. This emission unit shall not operate more than 100 hours per rolling twelve-month period.
  - C. Per 40 CFR§60.4207, owners and operators of pre-2011 model year diesel engines subject to NSPS Subpart IIII may petition the Administrator for approval to use remaining non-compliant fuel that does not meet the fuel requirements of 40 CFR§80.510(a) or CFR§80.510(b) beyond the dates required, for the purpose of using up existing fuel inventories.
  - D. This emission unit is subject to all applicable operating limits set forth in NSPS Subparts A (40 CFR §60.1 – 40 CFR §63.19) and IIII (40 CFR §60.4200 – 40 CFR §60.4219).
  - E. The owner or operator shall submit proposed changes to the final plans and specifications (i.e. stack parameters, maximum rated capacity, operating parameters, other application changes, etc.) for this emission unit and its control equipment to the Department prior to making any proposed changes. The owner or operator shall not make the proposed change to the final plans and specifications until the owner or operator receives written approval from the Department.
  - F. The owner or operator shall submit all proposed construction changes (i.e. stack locations, plant layout, building heights, etc.) to Project Number 07-602 prior to making the proposed construction change. The owner or operator shall not make the proposed construction change until the owner or operator receives written approval from the Department.
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## 15. Operating Condition Monitoring

All records as required by this permit shall be kept on-site for a minimum of two (2) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner. These records shall show the following:

- A. Maintain records of the sulfur content of the fuel oil utilized in the engine.
- B. The owner or operator shall install a non-resettable hour meter prior to startup of the engine per 40 CFR§60.4209.
- C. For the first twelve (12) months of operation, determine the total hours of operation for each month of operation.
- D. After the first twelve (12) months of operation, determine the annual hours of operation on a rolling-12-month basis for each month of operation.
- E. The owner or operator shall follow the monitoring requirements of 40 CFR§60.4209.
- F. The owner or operator shall follow the compliance requirements of 40 CFR§60.4211.
- G. The owner or operator shall follow the notification, reporting, and recordkeeping requirements of 40 CFR§60.4214(b).

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## 16. Continuous Emission Monitoring

Continuous emission monitoring is not required by this permit at this time.

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## 17. Description of Terms and Acronyms

acfm	Actual cubic feet per minute
Applicant	The owner, company official or authorized agent
CFR	Code of Federal Regulations
Department	Iowa Department of Natural Resources
DNR	Iowa Department of Natural Resources
gr/dscf	Grains per dry standard cubic foot
HAP	Hazardous Air Pollutant(s)
IAC	Iowa Administrative Code
Lb/bhp-hr	Pounds per brake horsepower hour
Lb/MWh	Pounds per megawatt hour
MMBTU	One million British thermal units
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NO <sub>x</sub>	Nitrogen Oxides
Owner	The owner or authorized representative
Permit	This document including permit conditions and all submitted application materials
PM <sub>10</sub>	Particulate Matter equal to or less than 10 microns in aerodynamic diameter
scfm	Standard cubic feet per minute
SIP	State Implementation Plan
SO <sub>2</sub>	Sulfur Dioxide
VOC	Volatile Organic Compound

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**END OF PERMIT CONDITIONS**