FEB 17 2015
Roger Hoffdahl
Ingredion Incorporated
P O Box 6129
Stockton, CA 95206

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: N-238
Project Number: N-1143155

Dear Mr. Hoffdahl:

Enclosed for your review and comment is the District's analysis of Ingredion Incorporated's applications for Authority to Construct permits for the installation of two 99.9 MMBtu/hr (each) natural gas-fired rental boilers (N-238-44, '45), modification of boiler permit N-238-41 to increase its VOC emissions limit, and to establish combined heat input and NOx emission rates in the boiler permits N-238-41, '-42, '-44 and '-45, at 1021 Industrial Dr, Stockton, California.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice and 45-day EPA notice comment periods, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Jag Kahlon of Permit Services at (209) 557-6452.

Sincerely,

Arnaud Marjollet
Director of Permit Services

AM: JK/ya

Enclosures

cc: Mike Tollstrup, CARB (w/ enclosure) via email
cc: Gerardo C. Rios, EPA (w/ enclosure) via email

Seyed Sadredin
Executive Director/Air Pollution Control Officer
I. PROPOSAL

N-238-41-2: 185 MMBtu/hr natural gas-fired boiler

The proposed modifications to the boiler permit are as follows:

1. Increase VOC emission rate from 3 ppmvd @ 3% O₂ (0.001 lb/MMBtu) to 10 ppmvd @ 3% O₂ (0.004 lb/MMBtu).

2. Remove combined annual VOC emission rate of 1,559 pounds for permit units N-238-41 and '-42.

3. Establish daily and annual heat input limits for units N-238-41, '-42, '-44 and '-45 equal to the maximum permitted heat input rate for unit N-238-41, that is, 4,272 MMBtu/day\(^1\) and 1,559,280 MMBtu/year\(^2\).

4. Establish a combined annual NOx emission limit of 12,474 pounds for permit units N-238-41, '-42, '-44 and '-45.

Ingredion started operating under Authority to Construct (ATC) N-238-41-1. Therefore, this permit is being considered implemented for the purpose of this project.

N-238-42-1: 28.8 MMBtu/hr natural gas-fired boiler

The proposed modifications to the boiler permit are as follows:

1. Remove combined annual VOC emission rate of 1,559 pounds for permit units N-238-41 and '-42.

\(^1\) 178 MMBtu/hr × 24 hr/day = 4,272 MMBtu/day

\(^2\) 178 MMBtu/hr × 8,760 MMBtu/yr = 1,559,280 MMBtu/yr
2. Establish combined daily and annual heat input limits for units N-238-41, '-42, '-44 and '-45 equal to the maximum permitted heat input rate for unit N-238-41, that is, 4,272 MMBtu/day and 1,559,280 MMBtu/year.

3. Establish a combined annual NOx emission limit of 12,474 pounds for permit units N-238-41, '-42, '-44 and '-45.

Ingredion started operating under ATC N-238-42-0. Therefore, this permit is being considered implemented for the purpose of this project.

N-238-44-0: 99.9 MMBtu/hr natural gas-fired boiler
N-238-45-0: 99.9 MMBtu/hr natural gas-fired boiler

Ingredion is requesting ATC permits to install two 99.9 MMBtu/hr natural gas-fired boilers. The company has requested to include the following items in these permits:

1. Establish combined daily and annual heat input limits for units N-238-41, '-42, '-44 and '-45 equal to the maximum permitted heat input rate for unit N-238-41, that is, 4,272 MMBtu/day and 1,559,280 MMBtu/year.

2. Establish a combined annual NOx emission limit of 12,474 pounds for permit units N-238-41, '-42, '-44 and '-45.

These boilers will likely be operated when the boiler under permit N-238-41 is not operating. These units may stay on site for more than 180 days; therefore, they do not qualify as Temporary Replacement Emission Units (TREU) under Rule 2201.

This facility is a Major Source for NO\textsubscript{x}, CO, and VOC emissions. The facility is operating under Title V permit. This project triggers a public notice since the project is a Federal Major Modification per District Rule 2201, and it is a "Significant Modification" under District Rule 2520. Therefore, this project will be published in the local newspaper, Stockton Record, for public review and comment. The public comment period will last 30 days from the date of publication. The facility has also proposed to obtain ATCs with Certificate of Conformity (COC), which is EPA's 45-day review before the issuance of final ATCs. Both COC and public notice will run concurrently.

II. APPLICABLE RULES

Rule 2201    New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410    Prevention of Significant Deterioration (11/26/12)
Rule 2520    Federally Mandated Operating Permits (6/21/01)
Rule 4001    New Source Performance Standards (4/14/99)
Rule 4002    National Emission Standards for Hazardous Air Pollutants (5/20/04)
III. PROJECT LOCATION

This facility is located at 1021 Industrial Drive, Stockton, California. The boilers will not be located within 1,000 feet of any K-12 school. Therefore, the project will not trigger the school and public noticing requirements under California Health & Safety Code 42301.6.

IV. PROCESS DESCRIPTION

The boilers will provide steam to various processes in the wet corn milling plant.

V. EQUIPMENT LISTING

<table>
<thead>
<tr>
<th>Permit #</th>
<th>Equipment Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-238-41-1</td>
<td>185 MMBTU/HR ZURN MODEL 22M KEYSTONE AUXILIARY BOILER WITH A TODD MODEL RMB ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION (FGR) SYSTEM</td>
</tr>
<tr>
<td>N-238-42-0</td>
<td>28.8 MMBTU/HR HURST MODEL S2X-G-650-250 (OR EQUIVALENT MANUFACTURER AND MODEL) BOILER WITH ALZETA MODEL CSB 22-2SO-30/30 (OR EQUIVALENT MANUFACTURER OR MODEL) BURNER SYSTEM</td>
</tr>
</tbody>
</table>
## Post-Project Equipment Description

<table>
<thead>
<tr>
<th>Permit #</th>
<th>Equipment Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-238-41-2</td>
<td>185 MMBTU/HR ZURN MODEL 22M KEYSTONE AUXILIARY BOILER WITH A TODD MODEL RMB ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION (FGR) SYSTEM</td>
</tr>
<tr>
<td>N-238-42-1</td>
<td>28.8 MMBTU/HR HURST MODEL S2X-G-650-250 (OR EQUIVALENT MANUFACTURER AND MODEL) BOILER WITH ALZETA MODEL CSB 22-2SO-30/30 (OR EQUIVALENT MANUFACTURER OR MODEL) BURNER SYSTEM</td>
</tr>
<tr>
<td>N-238-44-0</td>
<td>99.9 MMBTU/HR NEBRASKA MODEL NOS-2A/S-64 (OR EQUIVALENT MANUFACTURER AND MODEL) BOILER WITH TODD OR JOHN ZINK VARIFLAME (OR EQUIVALENT MANUFACTURER AND MODEL) LOW-NOX BURNER SYSTEM WITH A CADASTACK (OR EQUIVALENT MANUFACTURER) SELECTIVE CATALYTIC REDUCTION SYSTEM</td>
</tr>
<tr>
<td>N-238-45-0</td>
<td>99.9 MMBTU/HR NEBRASKA MODEL NOS-2A/S-64 (OR EQUIVALENT MANUFACTURER AND MODEL) BOILER WITH TODD OR JOHN ZINK VARIFLAME (OR EQUIVALENT MANUFACTURER AND MODEL) LOW-NOX BURNER SYSTEM WITH A CADASTACK (OR EQUIVALENT MANUFACTURER) SELECTIVE CATALYTIC REDUCTION SYSTEM</td>
</tr>
</tbody>
</table>

## VI. EMISSION CONTROL TECHNOLOGY EVALUATION

### N-238-41-2 and '42-1

The burners reduce formation of NO\textsubscript{x} by producing lower flame temperatures (and longer flames) than conventional burners. Conventional burners thoroughly mix all the fuel and air in a single stage just prior to combustion, whereas low-NO\textsubscript{x} burners delay the mixing of fuel and air by introducing the fuel (or sometimes the air) in multiple stages. Generally, in the first combustion stage, the air-fuel mixture is fuel rich. In a fuel rich environment, all the oxygen will be consumed in reactions with the fuel, leaving no excess oxygen available to react with nitrogen to produce thermal NO\textsubscript{x}. In the secondary and tertiary stages, the combustion zone is maintained in a fuel-lean environment. The excess air in these stages helps to reduce the flame temperature so that the reaction between the excess oxygen with nitrogen is minimized.

In addition, the use of flue gas re-circulation (FGR) on unit N-238-41 can reduce nitrogen oxides (NO\textsubscript{x}) emissions by 60% to 70%. In an FGR system, a portion of the flue gas is re-circulated back to the inlet air. As flue gas is composed mainly of nitrogen and the products of combustion, it is much lower in oxygen than the inlet air and contains virtually no combustible hydrocarbons to burn. Thus, flue gas is practically inert. The addition of an inert mass of gas to the combustion reaction serves to absorb heat without producing heat, thereby lowering the flame temperature. Since high flame temperatures form thermal NO\textsubscript{x}, the lower flame temperatures produced by FGR serve to reduce thermal NO\textsubscript{x}. 
N-238-44-0 and '-45-0
In addition to the burner technology (explained under N-238-41 and '-42), the proposed boiler will be equipped with a selective catalytic reduction (SCR) system. An SCR system operates as an external control device where flue gases and a reagent, in this case ammonia, are passed through an appropriate catalyst. Ammonia will be injected upstream of the catalyst where it reacts and reduces NOx, over the catalyst bed, to form elemental nitrogen and other by-products. The use of a catalyst typically reduces the NOx emissions by up to 90%.

VII. CALCULATIONS

A. Assumptions

- Assumptions will be stated as they are made during the evaluation.

B. Emission Factors (EF)

1. Pre-Project Emission Factors (EF1)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>EF1</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>0.008</td>
<td>7.0</td>
</tr>
<tr>
<td>SOx</td>
<td>0.0029</td>
<td>--</td>
</tr>
<tr>
<td>PM10</td>
<td>0.0076</td>
<td>--</td>
</tr>
<tr>
<td>CO</td>
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<td>50</td>
</tr>
<tr>
<td>VOC</td>
<td>0.001</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>EF1</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>0.008</td>
<td>7</td>
</tr>
<tr>
<td>SOx</td>
<td>0.00285</td>
<td>--</td>
</tr>
<tr>
<td>PM10</td>
<td>0.0076</td>
<td>--</td>
</tr>
<tr>
<td>CO</td>
<td>0.037</td>
<td>50</td>
</tr>
<tr>
<td>VOC</td>
<td>0.004</td>
<td>10</td>
</tr>
</tbody>
</table>

These are new emission units. Therefore, EF1 does not exist.
2. Post-Project Emission Factors (EF2)

### N-238-41-2

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>EF2 (lb/MMBtu)</th>
<th>ppmvd @ 3% O₂</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOₓ</td>
<td>0.008</td>
<td>7.0</td>
<td>N-238-41-1</td>
</tr>
<tr>
<td>SOₓ</td>
<td>0.0029</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>PM₁₀</td>
<td>0.0076</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>0.037</td>
<td>50</td>
<td>Applicant's proposal</td>
</tr>
<tr>
<td>VOC</td>
<td>0.004</td>
<td>10</td>
<td>CARB's GHG factor sheet (3/10)</td>
</tr>
<tr>
<td>CO₂e</td>
<td>116.6</td>
<td>--</td>
<td></td>
</tr>
</tbody>
</table>

EF2 will be same as EF1.

### N-238-44-0, '45-0

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factors (EFₜ)</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lb/MMBtu</td>
<td>ppmvd @ 3% O₂</td>
</tr>
<tr>
<td>NOₓ Startup/shutdown</td>
<td>0.030</td>
<td>25</td>
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<tr>
<td>NOₓ Steady-state</td>
<td>0.0062</td>
<td>5</td>
</tr>
<tr>
<td>SOₓ</td>
<td>0.00285</td>
<td>--</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>0.0076</td>
<td>--</td>
</tr>
<tr>
<td>CO</td>
<td>0.037</td>
<td>50</td>
</tr>
<tr>
<td>VOC</td>
<td>0.004</td>
<td>10</td>
</tr>
<tr>
<td>NH₃</td>
<td>0.004</td>
<td>10</td>
</tr>
</tbody>
</table>

C. Potential to Emit

1. Pre-Project Potential to Emit (PE1)

   **N-238-41-1**

   NOₓ, SOₓ, PM₁₀, CO and VOC:

   \[
   \text{PE1 (lb/day)} = \text{EF1 lb/MMBtu} \times 178 \text{ MMBtu/hr} \times 24 \text{ hr/day}
   \]

   \[
   \text{PE1 (lb/yr)} = \text{EF1 lb/MMBtu} \times 178 \text{ MMBtu/hr} \times 8,760 \text{ hr/yr}
   \]
### Pollutant EF1 (lb/MMBtu) PE1 (lb/day) PE1 (lb/yr)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>EF1 (lb/MMBtu)</th>
<th>PE1 (lb/day)</th>
<th>PE1 (lb/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO(_x)</td>
<td>0.008</td>
<td>34.2</td>
<td>12,474</td>
</tr>
<tr>
<td>SO(_x)</td>
<td>0.0029</td>
<td>12.4</td>
<td>4,522</td>
</tr>
<tr>
<td>PM(_{10})</td>
<td>0.0076</td>
<td>32.5</td>
<td>11,851</td>
</tr>
<tr>
<td>CO</td>
<td>0.037</td>
<td>158.1</td>
<td>57,693</td>
</tr>
<tr>
<td>VOC</td>
<td>0.001</td>
<td>4.3</td>
<td>1,559</td>
</tr>
</tbody>
</table>

### N-238-42-0

NO\(_x\), SO\(_x\), PM\(_{10}\), CO and VOC:

PE1 (lb/day) = EF1 lb/MMBtu × 28.8 MMBtu/hr × 24 hr/day

PE1 (lb/yr) = EF1 lb/MMBtu × 28.8 MMBtu/hr × 8,760 hr/yr

### N-238-41-1 and -42-0 (Combined)

The applicant has established combined daily and annual heat input rate for both N-238-41 and -42 as follows:

- **Daily heat input:** 4,272 MMBtu
- **Annual heat input:** 1,559,280 MMBtu

**Except for VOC:**

PE1 (lb/day) = EF1 lb/MMBtu × 4,272 MMBtu/day

PE1 (lb/yr) = EF1 lb/MMBtu × 1,559,280 MMBtu/yr

### Pollutant EF1 (lb/MMBtu) PE1 (lb/day) PE1 (lb/yr)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>EF1 (lb/MMBtu)</th>
<th>PE1 (lb/day)</th>
<th>PE1 (lb/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO(_x)</td>
<td>0.008</td>
<td>5.5</td>
<td>2,018</td>
</tr>
<tr>
<td>SO(_x)</td>
<td>0.00285</td>
<td>2.0</td>
<td>732</td>
</tr>
<tr>
<td>PM(_{10})</td>
<td>0.0076</td>
<td>5.3</td>
<td>1,917</td>
</tr>
<tr>
<td>CO</td>
<td>0.037</td>
<td>25.6</td>
<td>9,335</td>
</tr>
<tr>
<td>VOC</td>
<td>0.004</td>
<td>2.8</td>
<td>1,009</td>
</tr>
</tbody>
</table>

\(^{3}\)VOC emission factor for N-238-41 and -42 are 0.001 lb/MMBtu and 0.004 lb/MMBtu respectively. The worst case daily VOC emissions are calculated as follows: PE2 (lb/day) = PE2 N-238-42 × PE2 N-238-41 + 0.001 lb/MMBtu × 4,272 MMBtu/day + 0.004 lb/MMBtu × (4,272 MMBtu/day × 24 hr/day) = 6.3 lb-VOC/day
2. Post-Project Potential to Emit (PE2)

N-238-41-2
NO\textsubscript{x}, SO\textsubscript{x}, PM\textsubscript{10}, CO and VOC:

\[ \text{PE2 (lb/day)} = \text{EF2 lb/MMBtu} \times 178 \text{ MMBtu/hr} \times 24 \text{ hr/day} \]
\[ \text{PE2 (lb/yr)} = \text{EF2 lb/MMBtu} \times 178 \text{ MMBtu/hr} \times 8,760 \text{ hr/yr} \]

\[
\begin{array}{|c|c|c|}
\hline
\text{Pollutant} & \text{EF2 (lb/MMBtu)} & \text{PE2 (lb/day)} & \text{PE2 (lb/yr)} \\
\hline
\text{NO\textsubscript{x}} & 0.008 & 34.2 & 12,474 \\
\text{SO\textsubscript{x}} & 0.0029 & 12.4 & 4,522 \\
\text{PM\textsubscript{10}} & 0.0076 & 32.5 & 11,851 \\
\text{CO} & 0.037 & 158.1 & 57,693 \\
\text{VOC} & 0.004 & 17.1 & 6,237 \\
\hline
\end{array}
\]

N-238-42-1
PE2 will be same as PE1.

N-238-44-0 or -45-0
The potential emissions from each rental boiler are estimated in the following section.

NO\textsubscript{x}:
\text{Startup/shutdown:}
The applicant has proposed the following startup and shutdown durations:

\[ \text{Startup:} \quad 2 \text{ hr/day; 200 hr/yr} \]
\[ \text{Shutdown:} \quad 1 \text{ hr/day; 100 hr/yr} \]

\[ \text{PE2 (lb/day)} = \text{EF2 lb/MMBtu} \times 99.9 \text{ MMBtu/hr} \times 3 \text{ hr/day} \]
\[ \text{PE2 (lb/yr)} = \text{EF2 lb/MMBtu} \times 99.9 \text{ MMBtu/hr} \times 300 \text{ hr/yr} \]

\text{Steady state:}
\[ \text{PE2 (lb/day)} = \text{EF2 lb/MMBtu} \times 99.9 \text{ MMBtu/hr} \times (24 - 3) \text{ hr/day} \]
\[ \text{PE (lb/yr)} = \text{EF2 lb/MMBtu} \times 99.9 \text{ MMBtu/hr} \times (8,760 - 300) \text{ hr/yr} \]

SO\textsubscript{x}, PM\textsubscript{10}, CO, VOC:
\[ \text{PE2 (lb/day)} = \text{EF2 lb/MMBtu} \times 99.9 \text{ MMBtu/hr} \times 24 \text{ hr/day} \]
\[ \text{PE (lb/yr)} = \text{EF2 lb/MMBtu} \times 99.9 \text{ MMBtu/hr} \times 8,760 \text{ hr/yr} \]

\text{Permit N-238-41-1 and -42-0 limits VOC emissions to 1,559 lb/year.}
N-238-41-2, '-42-1, '-44-0 and '-45-0 (Combined)

The applicant has proposed to establish combined daily and annual heat input rate for permits N-238-41, '-42, '-44 and '-45 equal to the permitted heat input to N-238-41. These heat input rates are:

Daily heat input: 4,272 MMBtu
Annual heat input: 1,559,280 MMBtu

Worst-case NOx emissions would occur during startup of the boilers under N-238-44 and '-45 and during startup/steady state of the boilers under permit N-238-41 and 42. These emissions are estimated in the following section:

\[
\text{Total} = 29.4 \text{ lb-NOx/day} + 18.0 \text{ lb-NOx/day} = 47.4 \text{ lb-NOx/day}
\]

\[
\text{Total} = 11,995 \text{ lb-NOx/yr} + 1,798 \text{ lb-NOx/yr} = 13,793 \text{ lb-NOx/yr}
\]
Ingredion has proposed to establish a combined NOx emission rate of 12,474 lb/year for permits N-238-41, ’-42, ’-44 and ’-45.

\[
\text{PM}_{10}, \text{ CO, VOC, NH}_3: \\
\text{PE}_2 (\text{lb/day}) = \text{EF}_2 \text{ lb/MMBtu} \times 4,272 \text{ MMBtu/day} \\
\text{PE}_2 (\text{lb/yr}) = \text{EF}_2 \text{ lb/MMBtu} \times 1,559,280 \text{ MMBtu/yr}
\]

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>(\text{EF}_2) (lb/MMBtu)</th>
<th>(\text{PE}_2) (lb/day)</th>
<th>(\text{PE}_2) (lb/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>--</td>
<td>47.4</td>
<td>12,474</td>
</tr>
<tr>
<td>*SO\textsubscript{x}</td>
<td>--</td>
<td>12.4</td>
<td>4,522</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>0.0076</td>
<td>32.5</td>
<td>11,851</td>
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<tr>
<td>CO</td>
<td>0.037</td>
<td>158.1</td>
<td>57,693</td>
</tr>
<tr>
<td>VOC</td>
<td>0.004</td>
<td>17.1</td>
<td>6,237</td>
</tr>
<tr>
<td>NH\textsubscript{3}</td>
<td>0.004</td>
<td>17.1</td>
<td>6,237</td>
</tr>
</tbody>
</table>

\*Worst-case emissions from unit N-238-41-2

3. Quarterly Emissions Changes (QEC)

This calculation is required for application’s emission profile, which is used for the District's internal tracking purposes. QECs are estimated as follows:

\[
\text{QEC} = (\text{PE}_2 - \text{PE}_1)/4
\]

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Quarterly Emissions Changes (QEC, lb)</th>
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<tr>
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<td>Q1</td>
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<tr>
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</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>0</td>
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<tr>
<td>CO</td>
<td>0</td>
</tr>
<tr>
<td>VOC</td>
<td>1,169</td>
</tr>
</tbody>
</table>

N-238-42-1, ’-44-0 and ’-45-0

Except for the NH\textsubscript{3} emissions, these units are not expected to cause any increase in facility’s emissions. Currently, the NH\textsubscript{3} emissions change is not being tracked; therefore, QECs will not be calculated.

4. Adjusted Increase in Permitted Emissions (AIPE)

AIPE is used to determine if BACT is required for emission units that are being modified. AIPE is calculated using the equations mentioned in Section 4.3 and 4.4 of Rule 2201.
\[ \text{AIPE} = \text{PE2} - \left( \frac{\text{EF2}}{\text{EF1}} \right) \left( \text{PE1} \right) \]

**N-238-41-2**
The AIPE due to the proposed modifications to this unit are summarized in the following table.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PE2 (lb/day)</th>
<th>*EF2/EF1</th>
<th>PE1 (lb/day)</th>
<th>AIPE (lb/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>34.2</td>
<td>1</td>
<td>34.2</td>
<td>0.0</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>12.4</td>
<td>1</td>
<td>12.4</td>
<td>0.0</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>32.5</td>
<td>1</td>
<td>32.5</td>
<td>0.0</td>
</tr>
<tr>
<td>CO</td>
<td>158.1</td>
<td>1</td>
<td>158.1</td>
<td>0.0</td>
</tr>
<tr>
<td>VOC</td>
<td>17.1</td>
<td>1</td>
<td>4.3</td>
<td>12.8</td>
</tr>
</tbody>
</table>

* EF2/EF1 ratio is conservatively assumed to be 1.

**N-238-42-1**
EF2 = EF1 and PE2 = PE1. Therefore, AIPE will be zero for each pollutant.

**N-238-44-0, -45-0**
These are new emission units. Therefore, AIPE calculations are not required.

D. Facility Emissions

1. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to Section 4.9 of District Rule 2201, SSPE1 is the Potential to Emit from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions (AERs) that have occurred at the source, and which have not been used on-site.

The potential emissions are taken from the application review under project N-1141447.
### SSPE1 (lb/yr)

<table>
<thead>
<tr>
<th>Permit #</th>
<th>NO$_x$</th>
<th>SO$_x$</th>
<th>PM$_{10}$</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-238-1-5</td>
<td>0</td>
<td>0</td>
<td>17,047</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-2-3</td>
<td>0</td>
<td>0</td>
<td>2,118</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-8-2</td>
<td>0</td>
<td>0</td>
<td>315</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-9-5</td>
<td>0</td>
<td>0</td>
<td>219</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-10-7</td>
<td>8,833</td>
<td>511</td>
<td>28,032</td>
<td>52,597</td>
<td>7,300</td>
</tr>
<tr>
<td>N-238-11-3</td>
<td>0</td>
<td>0</td>
<td>359</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-12-2</td>
<td>0</td>
<td>0</td>
<td>359</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-13-6</td>
<td>0</td>
<td>4,840</td>
<td>5,431</td>
<td>0</td>
<td>16,644</td>
</tr>
<tr>
<td>N-238-14-2</td>
<td>0</td>
<td>0</td>
<td>377</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-15-2</td>
<td>0</td>
<td>0</td>
<td>858</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-16-2</td>
<td>0</td>
<td>0</td>
<td>88</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-17-2</td>
<td>0</td>
<td>0</td>
<td>88</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-18-6</td>
<td>24,565</td>
<td>1,095</td>
<td>2,519</td>
<td>102,273</td>
<td>803</td>
</tr>
<tr>
<td>N-238-19-6</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-24-6</td>
<td>0</td>
<td>10,950</td>
<td>9,125</td>
<td>0</td>
<td>2,884</td>
</tr>
<tr>
<td>N-238-25-4</td>
<td>0</td>
<td>1,284</td>
<td>0</td>
<td>0</td>
<td>24,791</td>
</tr>
<tr>
<td>N-238-29-3</td>
<td>0</td>
<td>767</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-30-2</td>
<td>0</td>
<td>0</td>
<td>37</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-36-0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-41-1</td>
<td>12,474</td>
<td>4,522</td>
<td>11,861</td>
<td>57,693</td>
<td>1,559</td>
</tr>
</tbody>
</table>

| SSPE1 (lb/yr) | 45,872 | 23,969 | 73,000* | 212,563 | 53,981 |

*Facility-wide PM emissions limit is set to 200 lb/day, which equates to 73,000 lb/yr (200 lb/day x 355 days/yr).

2. Post-Project Stationary Source Potential to Emit (SSPE2)

Pursuant to Section 4.10 of District Rule 2201, the Post-Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.
<table>
<thead>
<tr>
<th>Permit #</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-238-1-5</td>
<td>0</td>
<td>0</td>
<td>17,047</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-2-3</td>
<td>0</td>
<td>0</td>
<td>2,118</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-8-2</td>
<td>0</td>
<td>0</td>
<td>315</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-9-5</td>
<td>0</td>
<td>0</td>
<td>219</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-10-7</td>
<td>8,833</td>
<td>511</td>
<td>28,032</td>
<td>52,597</td>
<td>7,300</td>
</tr>
<tr>
<td>N-238-11-3</td>
<td>0</td>
<td>0</td>
<td>359</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-12-2</td>
<td>0</td>
<td>0</td>
<td>359</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-13-6</td>
<td>0</td>
<td>4,840</td>
<td>5,431</td>
<td>0</td>
<td>16,644</td>
</tr>
<tr>
<td>N-238-14-2</td>
<td>0</td>
<td>0</td>
<td>377</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-15-2</td>
<td>0</td>
<td>0</td>
<td>858</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-16-2</td>
<td>0</td>
<td>0</td>
<td>88</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-17-2</td>
<td>0</td>
<td>0</td>
<td>88</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-18-6</td>
<td>24,565</td>
<td>1,095</td>
<td>2,519</td>
<td>102,273</td>
<td>803</td>
</tr>
<tr>
<td>N-238-19-6</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-24-6 and N-238-33-3</td>
<td>0</td>
<td>10,950</td>
<td>9,125</td>
<td>0</td>
<td>2,884</td>
</tr>
<tr>
<td>N-238-25-4</td>
<td>0</td>
<td>1,284</td>
<td>0</td>
<td>0</td>
<td>24,791</td>
</tr>
<tr>
<td>N-238-29-3</td>
<td>0</td>
<td>767</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-30-2</td>
<td>0</td>
<td>0</td>
<td>37</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-36-0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-238-41-2, ‘42-1, ‘44-0 &amp; ‘45-0</td>
<td>12,474</td>
<td>4,522</td>
<td>11,851</td>
<td>57,693</td>
<td>6,237</td>
</tr>
<tr>
<td>N-238-43-0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

3. Major Source Determination

**Rule 2201 Major Source Determination**

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- Any ERCs associated with the stationary source
  - Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165
Rule 2201 Major Source Determination (lb/year)

<table>
<thead>
<tr>
<th>Category</th>
<th>NOx</th>
<th>SOx</th>
<th>PM\textsubscript{10}</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSPE1</td>
<td>45,872</td>
<td>23,969</td>
<td>73,000</td>
<td>212,563</td>
<td>53,981</td>
</tr>
<tr>
<td>SSPE2</td>
<td>45,872</td>
<td>23,969</td>
<td>73,000</td>
<td>212,563</td>
<td>58,659</td>
</tr>
<tr>
<td>Major Source</td>
<td>20,000</td>
<td>140,000</td>
<td>140,000</td>
<td>200,000</td>
<td>20,000</td>
</tr>
</tbody>
</table>

| Major Source?     | Yes     | No      | No                   | Yes     | Yes   |

From the above table, the facility is an existing Major Source for NO\textsubscript{x}, CO and VOC emissions.

Rule 2410 Major Source Determination

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

<table>
<thead>
<tr>
<th>Category</th>
<th>NO\textsubscript{2}</th>
<th>VOC</th>
<th>SO\textsubscript{2}</th>
<th>CO</th>
<th>PM</th>
<th>PM\textsubscript{10}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated Facility PE</td>
<td>22.9</td>
<td>27.0</td>
<td>12.0</td>
<td>106.3</td>
<td>36.5</td>
<td>36.5</td>
</tr>
<tr>
<td>before Project Increase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSD Major Source</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Thresholds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSD Major Source?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

From the above table, the facility is not an existing Major Source under PSD for any pollutant.

4. Stationary Source Increase in Permitted Emissions (SSIPE)

The District practice is to define SSIPE as the difference of SSPE2 and SSPE1. Negative SSIPE values will be equated zero.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>SSPE2 (lb/yr)</th>
<th>SSPE1 (lb/yr)</th>
<th>SSIPE (lb/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>45,872</td>
<td>45,872</td>
<td>0</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>23,969</td>
<td>23,969</td>
<td>0</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>73,000</td>
<td>73,000</td>
<td>0</td>
</tr>
<tr>
<td>CO</td>
<td>212,563</td>
<td>212,563</td>
<td>0</td>
</tr>
<tr>
<td>VOC</td>
<td>58,659</td>
<td>53,981</td>
<td>4,678</td>
</tr>
<tr>
<td>NH\textsubscript{3}</td>
<td>6,237</td>
<td>0</td>
<td>6,237</td>
</tr>
</tbody>
</table>
5. SB-288 Major Modification

The purpose of Major Modification calculations is to determine the following:

A. If Best Available Control Technology (BACT) is triggered for a new or modified emission unit that results in a Major Modification (District Rule 2201, §4.1.3); and

B. If a public notification is triggered (District Rule 2201, §5.4.1).

Per section VII.D.3 of this document, this facility is a Major Source for NO, CO and VOC emissions. Thus, analysis is required to determine if this project triggers an SB-288 Major Modification. Note that the San Joaquin Valley air basin is in attainment for CO; therefore, no CO significance threshold value is listed in Rule 2201. This analysis will be limited to NO and VOC emissions.

To determine if the proposed project triggers an SB-288 major modification, net emission increase (NEI) is calculated by determining the sum of the difference of PE2 and historical emissions (HE) of all the units involved in the project. This NEI value is then compared with the SB 288 major modification thresholds of 50,000 lb-NOx/yr and 50,000 lb-VOC/yr.

\[
\text{NEI} = \sum (\text{PE2} - \text{HE})
\]

NEI would be highest if HE is set equal zero. Thus,

\[
\text{NEI}_{\text{NOx}} = \sum \text{PE2} = \text{PE2}_{N-238-41} + \text{PE2}_{N-238-42} + \text{PE2}_{N-238-44} + \text{PE2}_{N-238-45}
\]

\[
= 12,474 \text{ lb-NOx/yr} < 50,000 \text{ lb-NOx/yr}
\]

\[
\text{NEI}_{\text{VOC}} = \sum \text{PE2} = \text{PE2}_{N-238-41} + \text{PE2}_{N-238-42} + \text{PE2}_{N-238-44} + \text{PE2}_{N-238-45}
\]

\[
= 6,237 \text{ lb-VOC/yr} < 50,000 \text{ lb-VOC/yr}
\]

NEI for NO and VOC emissions are less than the SB 288 major modification thresholds. Therefore, this project will not trigger an SB 288 major modification.

6. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.
For existing emissions units, the increase in emissions is calculated as follows.

Emission Increase = PAE - BAE - UBC

Where:  
PAE = Projected Actual Emissions, and
BAE = Baseline Actual Emissions
UBC = Unused baseline capacity

If there is no increase in design capacity or potential to emit, the PAE is equal to the annual emission rate at which the unit is projected to emit in any one year, selected by the operator, within 5 years after the unit resumes normal operation (10 years for existing units with an increase in design capacity or potential to emit). If detailed PAE are not provided, the PAE is equal to the PE2 for each permit unit.

PAE = PE2\textsubscript{N-238-41} = 12,474 lb-NO\textsubscript{x}/yr and 6,237 lb-VOC/yr

The BAE is calculated based on historical emissions and operating records for any 24 month period, selected by the operator, within the previous 10 year period (5 years for electric utility steam generating units). The BAE must be adjusted to exclude any non-compliant operation emissions and emissions that are no longer allowed due to lower applicable emission limits that were in effect when this application was deemed complete. BAE are determined using the emissions inventory data for the past two years 2012 and 2013. The average of these two year data is used to estimate the BAE for this unit.

BAE = BAE\textsubscript{N-238-41} = 8,224 lb-NO\textsubscript{x}/yr and 1,028 lb-VOC/yr

UBC: UBC is the portion of PAE that the emission units could have accommodated during the baseline period. The proposed changes will not result in an increase in utilization rate or potential to emit for NO\textsubscript{x} emissions. Therefore,

UBC = 4,250 lb-NO\textsubscript{x}/yr

Emissions Increase = PAE - BAE - UBC
= 12,474 lb-NO\textsubscript{x}/yr - 8,224 lb-NO\textsubscript{x}/yr - 4,250 lb-NO\textsubscript{x}/yr
= 0 lb-NO\textsubscript{x}/yr

\textsuperscript{5}The emissions inventory data is deemed confidential; therefore, detailed calculations are not presented here.
Note that the proposed changes will result in an increase in VOC emissions. Therefore, UBC will be zero for VOC emissions.

UBC = 0 lb-VOC/yr

Emissions Increase = PAE – BAE – UBC
= 6,237 lb-VOC/yr – 1,028 lb-VOC/yr – 0 lb-VOC/yr
= 5,209 lb-VOC/yr

N-238-42-1
The unit is new to the facility for which the permit was issued in June 2014. BAE and UBC are assumed zero for this unit. Therefore,

Emissions Increase = 2,018 lb-NOx/yr >0 lb-NOx/yr
= 1,009 lb-VOC/yr > 0 lb-VOC/yr

N-238-44-0, ’-45-0
For each new unit, the increase in emissions is equal to the PE2 for each new unit included in this project.

Emissions Increase = 6,139 lb-NOx/yr >0 lb-NOx/yr
= 3,500 lb-VOC/yr > 0 lb-VOC/yr

**Summary:**
The project’s emission increase exceeds 0 lb/yr thresholds for Federal Major Modification for NOx and VOC emissions. Therefore, this project is a Federal Major Modification.

**VIII. COMPLIANCE**

**Rule 2201 New and Modified Stationary Source Review Rule**

**A. Best Available Control Technology (BACT)**

BACT requirements shall be triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless exempted pursuant to Section 4.2, BACT shall be required for the following actions:

- Any new emissions unit or relocation from one Stationary Source to another of an existing emissions unit with a Potential to Emit (PE2) exceeding 2.0 pounds in any one day;

---

6Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO
• Modifications to an existing emissions unit with a valid Permit to Operate resulting in an Adjusted Increase in Permitted Emissions (AIPE) exceeding 2.0 pounds in any one day;

• Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined in this rule.

N-238-41-2:
Per section VII.C.4 of this document, AIPE from the proposed modifications is greater than 2.0 lb/day for VOC emissions. Therefore, this unit triggers BACT for VOC emissions.

Based on the project specific BACT analysis in Appendix II of this document, BACT standard is to use PUC quality natural gas to reduce VOC emissions. The applicant is proposing to use natural gas fuel. Therefore, BACT requirements are satisfied.

N-238-42-1:
Per section VII.C.4 of this document, AIPE is not greater than 2.0 lb/day for any pollutant. However, NOx and VOC emissions increase calculated under section VII.D.6 is greater than 0 lb/yr threshold for Federal Major Modification. Thus, BACT is triggered for these pollutants.

BACT for units greater than 20 MMBtu/hr operating in a steady-state mode is as follows:

\[ \text{NO}_x: \quad 7 \text{ ppmvd} \, @ \, 3\% \, \text{O}_2 \, (\text{or less}) \quad \text{— Achieved-in-practice} \]
\[ \quad 5 \text{ ppmvd} \, @ \, 3\% \, \text{O}_2 \, (\text{or less}) \quad \text{— Technologically feasible} \]

\[ \text{VOC:} \quad \text{Use of PUC quality natural gas} \]

Based on the "Top-Down BACT Analysis" in Appendix II of this document, the applicant's proposal to comply with 7 ppmvd NO\textsubscript{x} @ 3% O\textsubscript{2} (or less) and use of PUC quality natural gas would satisfy the BACT for NO\textsubscript{x} and VOC emissions.

N-238-44-0 and '-45-0:
Per section VII.C.2 of this document, PE2 is greater than 2.0 lb/day for NO\textsubscript{x}, SO\textsubscript{2}, PM\textsubscript{10}, CO and VOC emissions. Thus, BACT is triggered for these pollutants.
The District conducts project-specific analyses for boilers similar to the ones proposed in this project. BACT for units greater than 20 MMBtu/hr operating in a steady-state mode is as follows:

NO\textsubscript{x}: 7 ppmvd @ 3% O\textsubscript{2} (or less) – Achieved-in-practice
5 ppmvd @ 3% O\textsubscript{2} (or less) – Technologically feasible

SO\textsubscript{x}, PM\textsubscript{10}, CO, VOC: Use of PUC quality natural gas

Based on the "Top-Down BACT Analysis" in Appendix II of this document, the applicant’s proposal to comply with 5 ppmvd NO\textsubscript{x} @ 3% O\textsubscript{2} (or less) with the use of an SCR system and use of PUC quality natural gas would satisfy the BACT for SO\textsubscript{x}, PM\textsubscript{10}, CO and VOC emissions.

B. Offsets

Offsets are examined on pollutant-by-pollutant basis. The following table summarizes SSPE2, offset thresholds, and whether or not offsets are triggered.

<table>
<thead>
<tr>
<th>Category</th>
<th>NO\textsubscript{x}</th>
<th>SO\textsubscript{x}</th>
<th>PM\textsubscript{10}</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSPE2 (lb/yr)</td>
<td>45,872</td>
<td>23,969</td>
<td>73,000</td>
<td>212,563</td>
<td>58,659</td>
</tr>
<tr>
<td>Offset Thresholds</td>
<td>20,000</td>
<td>54,750</td>
<td>29,200</td>
<td>200,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Offsets Triggered?</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Section 4.7.1 of Rule 2201 states that for pollutants with SSPE1 greater than the emission offset threshold levels, emission offsets shall be provided for all increases in Stationary Source emissions, calculated as the differences of post-project Potential to Emit (PE2) and the Baseline Emissions (BE) of all new and modified emissions units, plus all increases in Cargo Carrier emissions. Thus,

\[ EOQ = \sum(PE2 - BE) + ICCE, \]

\[ PE2 = \text{Post-Project Potential to Emit (lb/yr)} \]
\[ BE = \text{Baseline Emissions (lb/yr)} \]
\[ ICCE = \text{Increase in Cargo Carrier emissions (lb/yr)} \]

There is no increase in Cargo Carrier emissions from this project. Thus,

\[ EOQ = \sum(PE2 - BE) \]
BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

Otherwise,

BE = Historical Actual Emissions

**NOₓ:**
The boiler under permit N-238-41 is a Clean Emission Unit (defined in 3.13 of Rule 2201) as it is operating below the achieved-in-practice BACT level of 7 ppmvd @ 3% O₂ based on the latest source test results of December 2011. Therefore, BE is set equal to PE1 for this unit.

There is no increase in Cargo Carrier emissions from this project. Thus,

\[
\begin{align*}
\text{EOQ} & = \sum (\text{PE2} - \text{BE}) \\
 & = (\text{PE2} - \text{PE1})_{N-238-41} + (\text{PE2} - \text{HAE})_{N-238-42} + (\text{PE2} - \text{HAE})_{N-238-44} + \\
 & \quad (\text{PE2} - \text{HAE})_{N-238-45}
\end{align*}
\]

Re-arranging the above equation,

\[
\begin{align*}
\text{EOQ} & = (\text{PE2}_{N-238-41} + \text{PE2}_{N-238-42} + \text{PE2}_{N-238-44} + \text{PE2}_{N-238-45}) - (\text{PE1}_{N-238-41} + \\
& \quad \text{HAE}_{N-238-42} + \text{HAE}_{N-238-44} + \text{HAE}_{N-238-45})
\end{align*}
\]

The applicant has proposed to establish a specific limiting condition (SLC) of 12,474 lb-NOₓ/yr for the units under permits N-238-41, '-42, '-44 and '-45. Therefore,

\[
\begin{align*}
\text{PE2}_{N-238-41} + \text{PE2}_{N-238-42} + \text{PE2}_{N-238-44} + \text{PE2}_{N-238-45} & = 12,474 \text{ lb-NOₓ/yr} \\
\text{PE1}_{N-238-41} & = 12,474 \text{ lb-NOₓ/yr} \\
\text{HAE}_{N-238-42} + \text{HAE}_{N-238-44} + \text{HAE}_{N-238-45} & = 0 \text{ lb-NOₓ/yr, new units}
\end{align*}
\]

\[
\begin{align*}
\text{EOQ} & = (12,474 \text{ lb-NOₓ/yr}) - (12,474 \text{ lb-NOₓ/yr} + 0 \text{ lb-NOₓ/yr}) \\
& = 0 \text{ lb-NOₓ/yr}
\end{align*}
\]

**PM₁₀:**
This facility is not a major source for PM₁₀ emissions. Therefore, BE is set equal to PE1.

\[
\begin{align*}
\text{EOQ} & = \sum (\text{PE2} - \text{BE})
\end{align*}
\]
\[
E_0Q = (P_2 - B)_{N-238-41} + (P_2 - B)_{N-238-42} + (P_2 - B)_{N-238-44} + (P_2 - B)_{N-238-45}
\]

Re-arranging the above equation,

\[
E_0Q = (P_{2N-238-41} + P_{2N-238-42} + P_{2N-238-44} + P_{2N-238-45}) - (P_{1N-238-41} + P_{1N-238-42} + P_{1N-238-44} + P_{1N-238-45})
\]

Where,

\[
P_{2N-238-41} + P_{2N-238-42} + P_{2N-238-44} + P_{2N-238-45} = 11,851 \text{ lb-PM}_{10}/\text{yr}
\]

\[
P_{1N-238-41} = 11,851 \text{ lb-PM}_{10}/\text{yr}
\]

\[
P_{1N-238-42} + P_{1N-238-44} + P_{1N-238-45} = 0 \text{ lb-PM}_{10}/\text{yr}, \text{ new units}
\]

\[
E_0Q = (11,851 \text{ lb-PM}_{10}/\text{yr}) - (11,851 \text{ lb-PM}_{10}/\text{yr} + 0 \text{ lb-PM}_{10}/\text{yr})
\]

\[
= 0 \text{ lb-PM}_{10}/\text{yr}
\]

CO:
The boilers under permits N-238-41 and -42 are Clean Emission Units (defined in 3.13 of Rule 2201) as they are complying with achieved-in-practice BACT to utilize natural gas fuel. Therefore, \( B \) is set equal to \( P_1 \) for these units.

\[
E_0Q = \Sigma(P_2 - B)
\]

\[
= (P_2 - B)_{N-238-41} + (P_2 - B)_{N-238-42} + (P_2 - B)_{N-238-44} + (P_2 - B)_{N-238-45}
\]

Re-arranging the above equation,

\[
E_0Q = (P_{2N-238-41} + P_{2N-238-42} + P_{2N-238-44} + P_{2N-238-45}) - (P_{1N-238-41} + \text{HAE}_{N-238-42} + \text{HAE}_{N-238-44} + \text{HAE}_{N-238-45})
\]

Where,

\[
P_{2N-238-41} + P_{2N-238-42} + P_{2N-238-44} + P_{2N-238-45} = 57,693 \text{ lb-CO}/\text{yr}
\]

\[
P_{1N-238-41} + P_{2N-238-42} = 57,693 \text{ lb-CO}/\text{yr}
\]

\[
\text{HAE}_{N-238-42} + \text{HAE}_{N-238-44} + \text{HAE}_{N-238-45} = 0 \text{ lb-CO}/\text{yr}, \text{ new units}
\]

\[
E_0Q = (57,693 \text{ lb-CO}/\text{yr}) - (57,693 \text{ lb-CO}/\text{yr} + 0 \text{ lb-CO}/\text{yr})
\]

\[
= 0 \text{ lb-CO}/\text{yr}
\]
VOC:
The boilers under permits N-238-41 and '-42 are Clean Emission Units (defined in 3.13 of Rule 2201) as they are complying with achieved-in-practice BACT to utilize natural gas fuel. Therefore, BE is set equal to PE1 for these units.

\[ \text{EOQ} = \Sigma (P E_2 - B E) \]
\[ = (P E_2 - B E)_{N-238-41} + (P E_2 - B E)_{N-238-42} + (P E_2 - B E)_{N-238-44} + (P E_2 - B E)_{N-238-45} \]
\[ = (P E_2 - P E_1)_{N-238-41} + (P E_2 - P E_1)_{N-238-42} + (P E_2 - B E)_{N-238-44} + (P E_2 - B E)_{N-238-45} \]

Re-arranging the above equation,

\[ \text{EOQ} = (P E_2_{N-238-41} + P E_2_{N-238-42} + P E_2_{N-238-44} + P E_2_{N-238-45}) - (P E_1_{N-238-41} + P E_1_{N-238-42} + H A E_{N-238-44} + H A E_{N-238-45}) \]

Where,

\[ P E_2_{N-238-41} + P E_2_{N-238-42} + P E_2_{N-238-44} + P E_2_{N-238-45} = 6,237 \text{ lb-VOC/yr} \]
\[ P E_1_{N-238-41} + P E_1_{N-238-42} = 1,559 \text{ lb-VOC/yr} \]
\[ H A E_{N-238-44} + H A E_{N-238-45} = 0 \text{ lb-VOC/yr, new units} \]

\[ \text{EOQ} = (6,237 \text{ lb-VOC/yr}) - (1,559 \text{ lb-VOC/yr} + 0 \text{ lb-VOC/yr}) \]
\[ = 4,678 \text{ lb-VOC/yr} \]

Per section 4.8.1 of Rule 2201, for NOx and VOC offsets for new Major Sources and Federal Major Modifications, the distance offset ratio shall be 1.5. This project triggers a Federal Major Modification. Therefore, the amount of offset would be 7,017 pounds per year (4,678 lb-VOC/yr \( \times 1.5 \)).

Ingredion has proposed to use ERC S-4359-1 to offset the VOC increase from this project. This certificate has sufficient credits to offset VOC emissions increase from this project.

C. Public Notification

District Rule 2201, section 5.4, requires a public notification for the affected pollutants from the following types of projects:

- New Major Sources
- Major Modifications (SB-288 or Federal)
- New emission units with a PE>100 lb/day of any one pollutant
• Modifications with SSPE1 below an Offset threshold and SSPE2 above an Offset threshold on a pollutant-by-pollutant basis
• New stationary sources with SSPE2 exceeding Offset thresholds
• Any permitting action with a SSIPE exceeding 20,000 lb/yr for any one pollutant

Per section VII.D.6 of this document, this project is a Federal Major Modification. Thus, public notice is required for this project.

D. Daily Emission Limits (DELs)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.17 to restrict a unit's maximum daily emissions. The following DELs will be included in the permits:

N-238-41-2:
• NO\textsubscript{x} emissions shall not exceed 7 ppmvd @ 3% O\textsubscript{2} (0.008 lb/MMBtu) referenced as NO\textsubscript{2}. [District Rules 2201, 4301, 4305, 4306 and 4320]
• SO\textsubscript{x} emissions shall not exceed 0.0029 lb/MMBtu. [District Rule 2201]
• PM\textsubscript{10} emissions shall not exceed 0.0076 lb/MMBtu. [District Rule 2201]
• CO emissions shall not exceed 50 ppmvd @ 3% O\textsubscript{2} (0.037 lb/MMBtu). [District Rule 2201]
• VOC emissions shall not exceed 10 ppmvd @ 3% O\textsubscript{2} (0.004 lb/MMBtu) referenced as methane. [District Rule 2201]
• The total heat input rate to the boilers under permit units N-238-41, '42, '44 and '45 shall not exceed 4,272 MMBtu during any one day. [District Rule 2201]

N-238-42-1:
• NO\textsubscript{x} emissions shall not exceed 7 ppmvd @ 3% O\textsubscript{2} (0.008 lb/MMBtu) referenced as NO\textsubscript{2}. [District Rules 2201, 4301, 4305, 4306 and 4320]
• SO\textsubscript{x} emissions shall not exceed 0.0029 lb/MMBtu. [District Rule 2201]
• PM\textsubscript{10} emissions shall not exceed 0.0076 lb/MMBtu. [District Rule 2201]
• CO emissions shall not exceed 50 ppmvd @ 3% O\textsubscript{2} (0.037 lb/MMBtu). [District Rule 2201]
• VOC emissions shall not exceed 10 ppmvd @ 3% O2 (0.004 lb/MMBtu) referenced as methane. [District Rule 2201]

• The total heat input rate to the boilers under permit units N-238-41, '-42, '-44 and '-45 shall not exceed 4,272 MMBtu during any one day. [District Rule 2201]

N-238-44-0 or '-45-0:
Startup/shutdown:
• During start-up or shutdown, the emissions control systems shall be in operation, and emissions shall be minimized insofar as technologically possible. [District Rules 2201, 4305, 4306 and 4320]

• Startup/shutdown shall not exceed any of the following items: startup - 2.0 hours/event, 2.0 hours/day and 200 hours/year; shutdown - 1.0 hour/event, 1.0 hour/day and 100 hours/year. [District Rules 2201, 4306 and 4320]

• During startup and shutdown, NOx emissions shall not exceed 25 ppmvd @ 3% O2 or 0.030 lb/MMBtu. [District Rule 2201]

Steady state:
• Except during startup and shutdown, NOx emissions shall not exceed 5 ppmvd @ 3% O2 or 0.0062 lb/MMBtu, referenced as NO2. [District Rules 2201, 4305, 4306 and 4320]

Startup/shutdown/steady state:
• SOx emissions shall not exceed 0.00285 lb/MMBtu. [District Rule 2201]

• PM10 emissions shall not exceed 0.0076 lb/MMBtu. [District Rule 2201]

• CO emissions shall not exceed 50 ppmvd @ 3% O2 or 0.037 lb/MMBtu. [District Rules 2201, 4305, 4306 and 4320]

• VOC emissions shall not exceed 10 ppmvd @ 3% O2 (0.004 lb/MMBtu) referenced as methane. [District Rule 2201]

• NH3 emissions from the SCR system shall not exceed 10 ppmvd @ 3% O2. [District Rule 2201]

• The total heat input rate to the boilers under permit units N-238-41, '-42, '-44 and '-45 shall not exceed 4,272 MMBtu during any one day. [District Rule 2201]
E. Compliance Assurance

1. Source Testing

N-238-41-2:
NOx, SOx, PM_{10}, CO
Ingredion is not proposing any changes to the existing emission factors. Therefore, initial testing is not required. Note that the permit will require annual testing for NOx and CO emissions since this testing is required by rules 4305, 4306 and 4320.

VOC
Ingredion has proposed to establish a VOC emission factor of 0.004 lb/MMBtu. This factor is below the generally accepted emission factor of 0.0055 lb/MMBtu (EPA's AP-42 Table 1.4.2). Therefore, Ingredion will be required to conduct a source test to verify compliance with the proposed emission factor.

N-238-42-1:
NOx, SOx, PM_{10}, CO, VOC
Ingredion is not proposing any changes to the existing emission factors. Therefore, initial testing is not required. Note that the permit will require annual testing for NOx and CO emissions since this testing is required by rules 4305, 4306 and 4320.

N-238-44-0 and -45-0:
To verify the proposed NOx, VOC, CO and NH₃ emissions, Ingredion will be required to conduct initial source test within 60-days of startup of the unit.

Source testing to measure NOx, CO and NH₃ emissions is required to be conducted at least once every twelve months. Successful compliance demonstration on two consecutive twelve-month periodic tests may defer the following source test up to thirty-six months. This testing frequency is consistent with the requirements in the boiler rules 4305, 43066 and 4320 and other permitted boilers equipped with SCR systems.

2. Monitoring

N-238-41-2, -42-1:
The applicant is not proposing any changes to the existing monitoring requirements. Therefore, the existing requirements will be replicated in the ATC being issued under this project.
N-238-44-0 and '-45-0:

Ingredion has proposed to monitor NOx, CO and O2 concentrations using portable analyzer on a monthly basis. NH3 emissions will be required to be measured using gas detection tubes such as Draeger brand or other District approved equivalent method at the time of measurements of NOx, CO and O2 concentrations.

3. Recordkeeping

N-238-41-2, '-42-1, '-44-0 and '-45-0:

Ingredion will be required to maintain all records to verify compliance with the permitted limits. The records are required to be kept for a period of at least 5 years from the date such record is entered in a logbook.

4. Reporting

N-238-41-2, '-42-1, '-44-0 and '-45-0:

Ingredion will be required to submit source test reports within 60 days after completing each source test.

F. Ambient Air Quality Analysis (AAQA)

Pursuant to Section 4.14 of Rule 2201, an AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. The following table shows the summary of AAQA:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>1 Hour</th>
<th>3 Hours</th>
<th>8 Hours</th>
<th>24 Hours</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>Pass</td>
<td>X</td>
<td>Pass</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>NOx</td>
<td>Pass</td>
<td>X</td>
<td>X</td>
<td>Pass</td>
<td>Pass</td>
</tr>
<tr>
<td>SOx</td>
<td>Pass</td>
<td>Pass</td>
<td>X</td>
<td>Pass</td>
<td>Pass</td>
</tr>
<tr>
<td>PM10</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Pass</td>
<td>Pass</td>
</tr>
</tbody>
</table>

1The project was compared to the 1-hour NO2 National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.

2The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165(b)(2).

The criteria modeling runs for the proposed new units indicate that the emissions will not cause or contribute significantly to a violation of the State and National Ambient Air Quality Standards.
G. Compliance Certification

Per Section 4.15 of Rule 2201, "Compliance Certification" and "Alternative Siting Analysis" is required for any project, which constitutes a New Major Source or a Federal Major Modification.

Compliance Certification
The owner of a new Major Source or a source undergoing a Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. The compliance certification from the facility is included in Appendix IV of this document.

Alternative Siting Analysis
The current project occurs at an existing facility. Since the units will provide steam at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Compliance is expected with this Rule.

Rule 2410 Prevention of Significant Deterioration

Rule 2410 applies to pollutants for which the District is in attainment or for unclassified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM, PM\textsubscript{10}

Step 1: 
The first step of this PSD evaluation consists of determining whether the facility is an existing PSD Major Source or not. Per section VII.D.3 of this document, this facility is an existing PSD Major Source.

Step 2:
I. Project Emissions Increase - New Major Source Determination

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements. Note that the equipment evaluated
Under this project is listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore, the PSD Major Source threshold is 100 tpy for each regulated NSR pollutant.

<table>
<thead>
<tr>
<th>Category</th>
<th>NO₂</th>
<th>VOC</th>
<th>SO₂</th>
<th>CO</th>
<th>PM</th>
<th>PM₁₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total PE from N-238-41-2, '-42-1, '-44-0 and '-45-0</td>
<td>6.2</td>
<td>3.1</td>
<td>2.3</td>
<td>28.8</td>
<td>5.9</td>
<td>5.9</td>
</tr>
<tr>
<td>PSD Major Source threshold</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>New PSD Major Source?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

As shown above, the facility is not a new PSD major source. Thus, Rule 2410 does not apply.

**Rule 2520 Federally Mandated Operating Permits**

This facility is a Major Source for NOₓ, CO and VOC emissions. Therefore, this facility is subject to the requirements of this rule. The proposed project is a "Significant Modification" to the Title V permit since the project is a Federal Major Modification per section VII.D.6 of this document. The facility has proposed to process this project with COC. The following conditions will be included in the permits:

- This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201]

- Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4]

In accordance with Rule 2520, the application meets the procedural requirements of section 11.4 by including:

- A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs and

- The source's suggested draft permit (Appendix I of this document) and
Certification by a responsible official that the proposed modification meets the criteria for use of major permit modification procedures and a request that such procedures be used (Appendix IV of this document).

Section 5.3.4 of this rule requires the permittee shall file an application for administrative permit amendments prior to implementing the requested change except when allowed by the operational flexibility provisions of section 6.4 of this rule. The facility is expected to notify the District by filing TV Form-008 upon implementing the ATCs. The District Compliance Division is expected to submit a change order to implement the ATCs into Permits to Operate (PTOs).

Compliance is expected with this Rule.

Rule 4001  New Source Performance Standards

40 CFR Part 60, Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
The requirements of the Code of Federal Regulations, Chapter 40 (40 CFR), Part 60, Subpart Db applies to any steam generating unit with a maximum heat input of greater than 100 MMBtu/hr that has commenced construction, modification, or reconstruction after June 19, 1984.

N-238-41-2:
The applicant is not proposing any increase in fuel use; therefore, the proposed changes are not expected to result in an increase in hazardous air pollutants from this unit. Therefore, no further evaluation is required.

N-238-42-1, '-44-0 and '-45-0:
Since the heat input rate to each unit is not greater than 100 MMBtu/hr. Therefore, none of these units is subject to the requirements of this subpart.

40 CFR Part 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
This subpart applies to steam generating units that are constructed, reconstructed, or modified after 6/9/89 and have a maximum design heat input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr. Subpart Dc has standards for SOx and PM10 emissions.

This subpart applies to the boilers under permits N-238-42-1, '-44-0 and '-45-0.

60.42c – Standards for Sulfur Dioxide
Since coal is not combusted in the proposed boilers, the requirements of this section are not applicable.
60.43c – Standards for Particulate Matter

The boilers are not fired on coal, combusts mixtures of coal with other fuels, combusts wood, combusts mixtures of wood with other fuels, or oil; therefore, they will not be subject to the requirements of this section.

60.44c – Compliance and Performance Tests Methods and Procedures for Sulfur Dioxide

The proposed boilers are not subject to the sulfur dioxide requirements of this subpart. Therefore, this section is not applicable to these units.

60.45c – Compliance and Performance Test Methods and Procedures for Particulate Matter

The proposed boilers are not subject to the particulate matter requirements of this subpart. Therefore, this section is not applicable to these units.

60.46c – Emission Monitoring for Sulfur Dioxide

The proposed boilers are not subject to the sulfur dioxide requirements of this subpart. Therefore, this section is not applicable to these units.

60.47c – Emission Monitoring for Particulate Matter

The proposed boilers are not subject to the particulate matter requirements of this subpart. Therefore, this section is not applicable to these units.

60.48c – Reporting and Recordingkeeping Requirements

Section 60.48c (a) states that the owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by §60.7 of this part. This notification shall include:

1. The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

   The design heat input capacity and type of fuel combusted will be listed on the permit. No conditions are required to show compliance with this requirement.
(2) If applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel mixture of fuels under §60.42c or §40.43c.

This requirement is not applicable since the units are not subject to §60.42c or §60.43c.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

The facility is not proposing to establish an annual capacity factor for any unit under this project.

(4) Notification if an emerging technology will be used for controlling SO₂ emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of §60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

This requirement is not applicable since the units will not be equipped with emerging technology used to control SO₂ emissions.

Section 60.48c(g) states that the owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day. The following conditions will be listed in permits N-238-42-1, '-44-0 and '-45-0 to assure compliance with this section.

- A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rule 2201 and 40 CFR 60.48c(g)]

- The owner or operator shall maintain daily and monthly records of the type and quantity of the fuel combusted by the boiler. [District Rules 2201 and 4351, and 40 CFR 60.48c(g)]

Section 60.48c(i) states that all records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record. The following condition will ensure compliance with this section:
• All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4305, 4306 and 4320, and 40 CFR 60.48c(i)]

Compliance is expected with this regulation.

**Rule 4002 National Emission Standards for Hazardous Air Pollutants**


This subpart is applicable to boilers and process heaters located at Major Sources of HAP emissions.

Per project N-1141447, this facility is an Area Source of HAP emissions. Therefore, the requirements of Subpart DDDDD are not applicable to the proposed boiler.

40 CFR Part 63 Subpart JJJJJJJ National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources

Pursuant to Section 63.1195(e) a gas-fired boiler, as defined in Subpart JJJJJ, is not subject to any requirement of this Subpart. Pursuant to the definition in the subpart, a gas-fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel.

The boilers under this project meet the definition of a "gas-fired boiler" as they are required to use natural gas fuel. Therefore, Subpart JJJJJJJ requirements are not applicable.

**Rule 4101 Visible Emissions**

Section 5.0, indicates that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour, which is dark or darker than Ringlemann 1 or equivalent to 20% opacity. The following condition will be included in each permit:

• No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringlemann 1 or 20% opacity. [District Rule 4101]

Compliance is expected with this Rule.
Rule 4102 Nuisance

Section 4.0 prohibits discharge of air contaminants, which could cause injury, detriment, nuisance or annoyance to the public. The following condition will be included in each permit:

- No air contaminant shall be released into the atmosphere, which causes a public nuisance. [District Rule 4102]

California Health & Safety Code 41700 - Health Risk Assessment

District Policy APR 1905 - Risk Management Policy for Permitting New and Modified Sources specifies that for an increase in emissions associated with a proposed new source or modification, the District performs an analysis to determine the possible impact to the nearest resident or worksite. RMR results are as follows:

<table>
<thead>
<tr>
<th>Categories</th>
<th>Two New Natural Gas Boilers (Units 44-0 &amp; 45-0)</th>
<th>Project Totals</th>
<th>Facility Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prioritization Score</td>
<td>0.35</td>
<td>0.35</td>
<td>&gt;1</td>
</tr>
<tr>
<td>Acute Hazard Index</td>
<td>0.00</td>
<td>0.00</td>
<td>0.12</td>
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<tr>
<td>Chronic Hazard Index</td>
<td>0.00</td>
<td>0.00</td>
<td>0.05</td>
</tr>
<tr>
<td>Maximum Individual Cancer Risk</td>
<td>1.71E-07</td>
<td>1.71E-07</td>
<td>2.11E-07</td>
</tr>
<tr>
<td>T-BACT Required?</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Permit Conditions?</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*The prioritization score was less than one, however, the total facility score is greater than one.

The acute and chronic indices were below 1.0; and the cancer risk was less than one in a million. In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

- N-238-44-0 and -45-0:
  - The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]

Compliance is expected with this Rule.
Rule 4201  Particulate Matter Concentration

Section 3.0 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

N-238-41-2:
The proposed modifications will not result in an increase in particulate matter emissions; therefore, continued compliance is expected.

N-238-42-1:
PM₁₀ emissions  =  0.219 lb-PM₁₀/hr (0.0076 lb/MMBtu x 28.8 MMBtu/hr)
Fraction (lb-PM₁₀/lb-PM)  =  100 %
Exhaust Temperature  =  450°F
Exhaust flow rate  =  13,267 acfm
Moisture in exhaust  =  7% (assumed)

\[
\text{PM}\left(\frac{\text{gr}}{\text{dscf}}\right) = \frac{\left(0.219 \text{ lb-PM/hr}\right) \left(7,000 \frac{\text{gr-PM}}{\text{lb-PM}}\right) \left(\frac{\text{hr}}{60 \text{ min}}\right)}{\left(13,267 \frac{\text{ft}^3}{\text{min}}\right) \left(459.67 + 60\right) \left(459.67 + 450\right) \left(1 - 0.07\right)} = 0.004 \frac{\text{gr-PM}}{\text{dscf}}
\]

N-238-44-0 or '-45-0:
PM₁₀ emissions  =  0.759 lb-PM₁₀/hr (0.0076 lb/MMBtu x 99.9 MMBtu/hr)
Fraction (lb-PM₁₀/lb-PM)  =  100 %
Exhaust Temperature  =  350°F
Exhaust flow rate  =  31,198 acfm
Moisture in exhaust  =  7% (assumed)

\[
\text{PM}\left(\frac{\text{gr}}{\text{dscf}}\right) = \frac{\left(0.759 \text{ lb-PM/hr}\right) \left(7,000 \frac{\text{gr-PM}}{\text{lb-PM}}\right) \left(\frac{\text{hr}}{60 \text{ min}}\right)}{\left(31,198 \frac{\text{ft}^3}{\text{min}}\right) \left(1 \frac{\text{lb-PM}}{\text{lb-PM}}\right) \left(459.67 + 60\right) \left(459.67 + 350\right) \left(1 - 0.07\right)} = 0.005 \frac{\text{gr-PM}}{\text{dscf}}
\]

The following condition will be listed in permits N-238-41, '-42, '-44 and '-45:

- Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration.
  [District Rule 4201]

Compliance is expected with this Rule.
Rule 4301  Fuel Burning Equipment

The requirements of section 5.0 are as follows:

- Combustion contaminates (TSP) - Not to exceed 0.1 gr/dscf @ 12% CO$_2$ and 10 lb/hr.
- SO$_x$ emissions - Not to exceed 200 lb/hr
- NO$_x$ emissions - Not to exceed 140 lb/hr

N-238-41-2:
The proposed modifications will not result in an increase in NO$_x$, SO$_x$ or particulate matter emissions; therefore, continued compliance is expected.

N-238-42-1:
\[
\text{NO}_x \text{ (lb/hr)} = (0.008 \text{ lb/MBtu})(28.8 \text{ MMBtu/hr})
\]
\[
= 0.2 \text{ lb/hr}
\]

\[
\text{SO}_x \text{ (lb/hr)} = (0.00285 \text{ lb/MBtu})(28.8 \text{ MMBtu/hr})
\]
\[
= 0.1 \text{ lb/hr}
\]

\[
\text{PM (gr dscf)} = \frac{\text{PM Emissions}}{\text{MMBtu}} \times 7,000 \frac{\text{gr PM}}{\text{lb PM}}
\]
\[
\times F_{\text{factor CO}_2} \left( \frac{\text{dscf}}{\text{MMBtu}} \right) \times \left( \frac{100\%}{12\%} \right)
\]
\[
= \left( 0.0076 \frac{\text{lb PM}}{\text{MMBtu}} \right) \left( 7,000 \frac{\text{gr PM}}{\text{lb PM}} \right)
\]
\[
\times \left( 1,024.2 \frac{\text{dscf}}{\text{MMBtu}} \right) \left( \frac{100\%}{12\%} \right)
\]
\[
= 0.006 \frac{\text{gr PM}}{\text{dscf}}
\]

N-238-44-0 or '-45-0:
\[
\text{NO}_x \text{ (lb/hr)} = (0.030 \text{ lb/MBtu})(99.9 \text{ MMBtu/hr})
\]
\[
= 3.0 \text{ lb/hr}
\]

Note that the maximum NO$_x$ emissions during startup and shutdown period are used in the above calculations.

\[
\text{SO}_x \text{ (lb/hr)} = (0.00285 \text{ lb/MBtu})(99.9 \text{ MMBtu/hr})
\]
\[
= 0.3 \text{ lb/hr}
\]
PM \left( \frac{\text{gr}}{\text{dscf}} \right) = \frac{\text{PM Emissions} \times 7,000 \text{ gr - PM}}{\text{lb - PM}} \times \frac{\text{co}_2 \text{ dscf}}{\text{MMBtu}} \times \frac{100\%}{12\%} \times \left( \frac{0.0076 \text{ lb - PM}}{\text{MMBtu}} \times \frac{7,000 \text{ gr - PM}}{\text{lb - PM}} \right) \times \left( \frac{1,024.2 \text{ dscf}}{\text{MMBtu}} \times \frac{100\%}{12\%} \right) \times 0.006 \text{ gr - PM} \text{ dscf}

The proposed emissions are below the limits of this Rule; therefore, compliance is expected.

**Rule 4304   Equipment Tuning Procedure for Boilers, Steam Generators and Process Heaters**

Pursuant to District Rules 4305 and 4306, Section 6.3.1, boilers are required to be tested at least once every 12-months. Gaseous fuel fired units demonstrating compliance on two consecutive 12-month source tests may defer the following source test for up to 36 months. During 36-month source testing interval, the operator shall tune the boiler according to section 5.2.1 (tune up at least once each calendar year by qualified technician in accordance with Rule 4304). Tune-ups required by Sections 5.2.1 and 6.3.1 do not need to be performed for units that operate and maintain an APCO approved CEMS or an APCO approved Alternate Monitoring System where the applicable emission limits are periodically monitored.

**N-238-41-2:**
The existing permit to operate includes the requirements of this rule. These requirements will be replicated into the permit being issued under this project. Therefore, continued compliance is expected.

**N-238-42-1, '-44-0 and '-45-0:**
NOx, CO and O2 concentrations from the boiler will be measured using a portable analyzer monitor on a monthly basis. This monitoring scheme was previously approved under District Policy SSP-1105; therefore, boiler tune-ups are not required.
Rule 4305  Boilers, Steam Generators and Process Heaters – Phase 2

Since the emission limits of District Rule 4306 and all other requirements are equivalent or more stringent than District Rule 4305 requirements, compliance with District Rule 4306 requirements will satisfy requirements of District Rule 4305.

Rule 4306  Boilers, Steam Generators and Process Heaters – Phase 3

Section 2.0 - Applicability
This rule applies to any gaseous fuel or liquid fuel fired boiler, steam generator, or process heater with a total rated heat input greater than 5 million Btu per hour.

The heat input rate to the boilers is greater than 5 MMBtu/hr. Therefore, these units are subject to the requirements of this rule.

Note that permit N-238-41-1 and -42-0 includes all applicable requirements from this rule. These requirements will be replicated into the permits being issued under this project. Therefore, no further discussion is required.

The following discussion is limited to the new boilers under permit N-238-44-0 and -45-0.

Section 5.0 - Requirements
Section 5.1.1 limits NO\textsubscript{x} and CO emissions to 9 ppmvd @ 3% \textsubscript{O2} and 400 ppmvd @ 3% \textsubscript{O2} respectively.

The applicant has proposed to achieve 5 ppmvd NO\textsubscript{x} @ 3% \textsubscript{O2} (or less) and 50 ppmvd CO @ 3% \textsubscript{O2} (or less) for each boiler. Since the proposed limits are below the rule limits, compliance is expected with this section.

Section 5.2 lists the requirements for boilers limited to a heat input rate of less than 9 billion Btu per calendar year. The boilers will not be limited to a heat input rate of less than 9 billion Btu per calendar year. Therefore, this section is not applicable.

Section 5.3 states that the NO\textsubscript{x} and CO emission limits shall not apply to this unit during start-up and shutdown period provided that the duration of each start-up or each shutdown is not greater than 2.0 hours, and the emission control system is utilized during these periods. An operator may submit a request to allow more than two hours for each startup or each shutdown provided the operator meets all of the conditions specified in sections 5.3.3.1 to 5.3.3.3. The following condition(s) will be included in the permits:
• Startup/shutdown shall not exceed any of the following items: startup - 2.0 hours/event, 2.0 hours/day and 200 hours/year; shutdown - 1.0 hour/event, 1.0 hour/day and 100 hours/year. [District Rules 2201, 4306 and 4320]

Section 5.4.1 requires the operator to install and maintain a non-resettable, totalizing mass or volumetric flow meter for the units, which simultaneously use gaseous and liquid fuels and are subject to the requirements of Section 5.1. The applicant has proposed to use gaseous fuel only. Therefore, they are not required to install and maintain a fuel flow meter due to this section.

Section 5.4.2 requires that the units subject to District Rule 4306, Section 5.1 emissions limits, shall either install and maintain Continuous Emission Monitoring (CEM) equipment for NOx, CO and O2, or install and maintain APCO-approved alternate monitoring. In order to satisfy the requirements of District Rule 4306, the applicant has proposed to use pre-approved alternate monitoring scheme H of District Policy SSP-1105 (4/28/08), which requires periodic monitoring of NOx, CO, O2 and ammonia concentrations. The following condition(s) will be included in the permits:

• The permittee shall monitor and record the stack concentration of NOx, CO, NH3 and O2 at least once during each month in which source testing is not performed. NOx, CO and O2 monitoring shall be conducted utilizing a portable analyzer that meets District specifications. NH3 monitoring shall be conducted utilizing gas detection tubes (Draeger brand or District approved equivalent). Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless it has been performed within the last month. [District Rules 4305, 4306 and 4320]

• If either the NOx, CO or NH3 concentrations, as measured by the portable analyzer or the District approved ammonia monitoring equipment, exceed the permitted levels the permittee shall return the emissions to compliant levels as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer or the ammonia monitoring equipment continue to show emission limit violations after 1 hour of operation following detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation that is subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320]
• All NOx, CO, O2 and ammonia emission readings shall be taken with the unit operating at conditions representative of normal operation or under the conditions specified in the Permit to Operate. The NOx, CO and O2 analyzer as well as the NH3 emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Analyzer readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306 and 4320]

• Ammonia emissions readings shall be conducted at the time the NOx, CO and O2 readings are taken. The readings shall be converted to ppmvd @ 3% O2. [District Rules 4305, 4306 and 4320]

• The permittee shall maintain records of: (1) the date and time of NOx, CO, NH3 and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx, CO and NH3 concentrations corrected to 3% O2, (3) make and model of the portable analyzer, (4) portable analyzer calibration records, (5) the method of determining the NH3 emission concentration, and (6) a description of any corrective action taken to maintain the emissions at or below the acceptable levels. [District Rules 4305, 4306 and 4320]

Section 5.5.1 states the operator of any unit have the option of complying with either the applicable heat input (lb/MMBtu) emission limits or the concentration (ppmv) emission limit. The following condition(s) will be included in the permits:

• The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320]

Section 5.5.2 requires all emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0. The following condition(s) will be included in the permits:

• All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut
Section 5.5.3 requires that all CEMS data shall be averaged over a period of 15-consecutive minutes to demonstrate compliance with the applicable emission limits in this rule. Emissions from the boilers will not be measured using CEMS system; therefore, this section is not applicable.

Section 5.5.4 requires emissions monitoring pursuant to Sections 5.4.2, 5.4.2.1, and 6.3.1 using a portable NOx analyzer as part of an APCO approved Alternate Emissions Monitoring System, emission readings shall be averaged over a 15-consecutive-minute period by either taking a cumulative 15-consecutive-minute sample reading or by taking at least five readings evenly spaced out over the 15-consecutive-minute period. The following condition(s) will be included in the permits:

- All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15-consecutive-minute period by either taking a cumulative 15-consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15-consecutive-minute period. [District Rules 4305, 4306 and 4320]

Section 5.5.5 requires that for emissions source testing performed pursuant to Section 6.3.1 for the purpose of determining compliance with an applicable standard or numerical limitation of this rule, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. The following condition(s) will be included in the permits:

- For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320]

Section 6.0 – Administrative Requirements
Section 6.1 requires that the records required by Sections 6.1.1 through 6.1.3 shall be maintained for five calendar years and shall be made available to the APCO upon request. Failure to maintain records or information contained in the records that demonstrate noncompliance with the applicable requirements of this
rule shall constitute a violation of this rule. The following condition(s) will be included in the permits:

- All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4305, 4306 and 4320, and 40 CFR 60.48c(i)]

Section 6.2 identifies the test methods for determining higher heating value of fuel, NO\textsubscript{x}, CO, O\textsubscript{2}, stack gas velocities, and stack gas moisture content. The following conditions will be listed on each permit. The following condition(s) will be included in the permits:

- Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]

- NO\textsubscript{x} emissions for source test purposes shall be determined using EPA Method 7E or CARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320]

- CO emissions for source test purposes shall be determined using EPA Method 10 or CARB Method 100. [District Rules 4305, 4306 and 4320]

- Stack gas oxygen (O\textsubscript{2}) shall be determined using EPA Method 3 or 3A or CARB Method 100. [District Rules 4305, 4306 and 4320]

Section 6.3.1 requires that this unit be tested to determine compliance with the applicable requirements of section 5.1 and 5.2.3 not less than once every 12 months. Units that demonstrate compliance on two consecutive 12-month source tests may defer the following 12-month source test for up to 36 months (no more than 30 days before or after the required 36-month source test date). During the 36-month source testing interval, the operator shall tune the unit in accordance with the provisions of Section 5.2.1, and shall monitor, on a monthly basis, the unit's operational characteristics recommended by the manufacturer to ensure compliance with the applicable emission limits specified in Sections 5.1 or 5.2.3. Tune-ups required by Sections 5.2.1 and 6.3.1 do not need to be performed for units that operate and maintain an APCO approved CEMS or an APCO approved Alternate Monitoring System where the applicable emission limits are periodically monitored.

NO\textsubscript{x}, CO and O\textsubscript{2} concentrations will be measured on monthly basis using portable analyzer. Therefore, no periodic tune-ups are required. The following condition(s) will be included in the permits:
- Source testing to measure steady state \( \text{NO}_x \), CO, VOC and \( \text{NH}_3 \) emissions shall be conducted within 60-days of the initial startup. [District Rules 2201, 4305, 4306 and 4320]

- Source testing to measure \( \text{NO}_x \), CO and \( \text{NH}_3 \) emissions during steady state operation shall be conducted at least once every 12 months. After demonstrating compliance on 2 consecutive annual source tests, the unit shall be tested not less than once every 36 months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every 12 months. [District Rules 4305, 4306 and 4320]

Section 6.3.2 lists compliance testing procedure for units that represent a group of units. The heat input rate of the boilers at this site significantly varies from one boiler to another; therefore, group testing cannot be considered.

Section 6.4 discusses emission control plan (ECP). The permit application for the boilers satisfies the requirements of the Emission Control Plan, as listed in Section 6.4 of District Rule 4306. No further discussion is necessary.

Section 7.0 – Compliance Schedule
The boilers are expected to be operated in compliance with the requirements of this rule. Therefore, no further discussion is required.

Compliance is expected with this Rule.

**Rule 4320** Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters greater than 5.0 MMBtu/hr

**Section 2.0 - Applicability**
Section 2.0 states that this rule applies to any gaseous fuel or liquid fuel fired boiler, steam generator, or process heater with a total rated heat input greater than 5 million Btu per hour.

The heat input rate to the boiler is greater than 5 MMBtu/hr. Therefore, this unit is subject to the requirements of this rule.

**Section 5.0 – Requirements**
Section 5.1 states that an operator of a unit(s) subject to this rule shall comply with all applicable requirements of the rule and one of the following, on a unit-by-unit basis:

- Operate the unit to comply with the emission limits specified in Sections 5.2 and 5.4; or
• Pay an annual emissions fee to the District as specified in Section 5.3 and comply with the control requirements specified in Section 5.4; or

• Comply with the applicable Low-use Unit requirements of Section 5.5.

Note that permit N-238-41-1 and '42-0 includes all applicable requirements from this rule. These requirements will be replicated into the permits being issued under this project. Therefore, no further discussion is required.

The following discussion is limited to the new boilers under permit N-238-44-0 and '45-0.

The facility had chosen to comply with the emission limits specified in Section 5.2 and 5.4. These limits are summarized below:

NOx: 7 ppmvd @ 3% O2
CO: 400 ppmvd @ 3% O2
Particulate Matter: Use PUC-quality natural gas, commercial propane, butane, or LPG, or combination of such gases with fuel sulfur content of 5 grains/100 scf or less.

The applicant has proposed the following limits:

NOx: 5 ppmvd @ 3% O2 (or less);
CO: 50 ppmvd @ 3% O2 (or less);
Particulate Matter: Use PUC-quality natural gas.

Therefore, compliance is expected with this section.

Section 5.3 states that the NOx and CO emission limits shall not apply to this unit during start-up and shutdown period provided that the duration of each start-up or each shutdown is not greater than 2.0 hours, and the emission control system is utilized during these periods. The following condition(s) will be included in the permits:

• Startup/shutdown shall not exceed any of the following items: startup - 2.0 hours/event, 2.0 hours/day and 200 hours/year; shutdown - 1.0 hour/event, 1.0 hour/day and 100 hours/year. [District Rules 2201, 4306 and 4320]

Section 5.7 discusses monitoring provisions to comply with NOx and CO limits. These provisions are similar to the provisions in Rule 4306 (discussed previously).
Section 5.7.6 requires the operator to provide annual fuel sulfur content analysis. The following conditions will satisfy the requirements of this section:

- Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rule 4320]

- Fuel sulfur content shall be determined using EPA Method 11 or EPA Method 15 or District, CARB and EPA approved alternative methods. [District Rule 4320]

Section 5.8 discusses compliance determination. The requirements in this section are similar to the requirements in Rule 4306 (discussed previously).

Section 6.0 — Administrative Requirements
Recordkeeping requirements of this Rule are similar to that of the Rule 4306. Please refer to section 6.0 of Rule 4306.

Section 7.0 — Compliance Schedule
This section refers to "Authority to Construct" and "Compliance Deadline" dates for existing units. The proposed boilers are new emission units. Therefore, no further discussion is required.

Compliance is expected with this Rule.

**Rule 4351  Boilers, Steam Generators, and Process Heaters – Phase 1**

Except for the recordkeeping requirement in Section 6.1.1 of Rule 4351 (described below), the emission limits of District Rule 4306 and 4320 and all other requirements are equivalent or more stringent than this Rule; therefore, compliance with District Rule 4306 and 4320 requirements will satisfy requirements of District Rule 4351.

Section 6.1.1 of this rule requires that the owner of each unit shall monitor and record for each unit the higher heating value (hhv) and cumulative annual use of each fuel. The following condition(s) will be included in permits N-238-41, '42, '44 and '45:

- The owner or operator shall monitor and record the higher heating value (HHV) of the fuel combusted in this unit. The HHV shall be certified by thirty party fuel supplier or determined annually using ASTM D 1826-88 or D 1945-81 in conjunction with ASTM D 3588-89 for gaseous fuels. [District Rule 4351]
• The owner or operator shall maintain daily and monthly records of the type and quantity of the fuel combusted by the boiler. [District Rules 2201 and 4351, and 40 CFR 60.48c(g)]

Compliance is expected with this Rule.

Rule 4801 Sulfur Compounds

Section 3.1 states that a person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding a concentration of two-tenths (0.2) percent by volume calculated as sulfur dioxide (SO₂) at the point of discharge on a dry basis averaged over 15 consecutive minutes.

N-238-41-2, '42-1, '-'44-0 and '45-0:
For the proposed gaseous fuel combustion at a reference state of 60 °F, the Rule 4801 limit of 2,000 ppmvd is equivalent to:

\[
\frac{(2000 \text{ ppmvd})(8,578 \text{ dscf/MMBtu})(64 \text{ lb SO}_2 \text{ MMBtu})}{379.5 \text{ lb mol}} \approx 2.9 \text{ lb SO}_2 \text{ MMBtu}
\]

SO₂ emissions from each boiler are based on 1.0 gr-S/100 scf, equivalent to 0.0029 lb/MMBtu. Since these emissions are less than 2.9 lb/MMBtu, it is expected that these units will operate in compliance with this Rule.

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its Environmental Review Guidelines (ERG) in 2001. The basic purposes of CEQA are to:

• Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
• Identify the ways that environmental damage can be avoided or significantly reduced.
• Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

It is determined that no other agency has prepared or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

On December 17, 2009, the District's Governing Board adopted a policy, APR 2005, Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency, for addressing GHG emission impacts when the District is Lead Agency under CEQA and approved the District's guidance document for use by other agencies when addressing GHG impacts as lead agencies under CEQA. Under this policy, the District's determination of significance of project-specific GHG emissions is founded on the principal that projects with GHG emission reductions consistent with AB 32 emission reduction targets are considered to have a less than significant impact on global climate change. Consistent with District Policy 2005, projects complying with an approved GHG emission reduction plan or GHG mitigation program, which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, would be determined to have a less than significant individual and cumulative impact for GHG emission.

The California Air Resources Board (ARB) adopted a Cap-and-Trade regulation as part one of the strategies identified for AB 32. This Cap-and-Trade regulation is a statewide plan, supported by a CEQA compliant environmental review document, aimed at reducing or mitigating GHG emissions from targeted industries. Facilities subject to the Cap-and-Trade regulation are subject to an industry-wide cap on overall GHG emissions. Any growth in emissions must be accounted for under that cap such that a corresponding and equivalent reduction in emissions must occur to allow any increase. Further, the cap decreases over time, resulting in an overall decrease in GHG emissions.

Under District policy APR 2025, CEQA Determinations of Significance for Projects Subject to ARB’s GHG Cap-and-Trade Regulation, the District finds that the Cap-and-Trade is a regulation plan approved by ARB, consistent with AB32 emission reduction targets, and supported by a CEQA compliant environmental review document. As such, consistent with District Policy 2005, projects complying with project complying with Cap-and-Trade requirements are determined to have a less than significant individual and cumulative impact for GHG emissions.

The GHG emissions increases associated with this project result from the combustion of fossil fuel(s), other than jet fuel, delivered from suppliers subject to
the Cap-and-Trade regulation. Therefore, as discussed above, consistent with District Policies APR 2005 and APR 2025, the District concludes that the GHG emissions increases associated with this project would have a less than significant individual and cumulative impact on global climate change.

District CEQA Findings

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the project will occur at an existing facility and the project involves negligible or no expansion of the existing use. Furthermore, the District determined that the project will not have a significant effect on the environment. The District finds that the project is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline §15301 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. RECOMMENDATION

Issue the ATC upon addressing comments from the EPA, CARB, the public and the applicant.

X. BILLING INFORMATION

<table>
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<tr>
<th>Permit #</th>
<th>Fee Schedule</th>
<th>Fee Description</th>
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<td>3020-02 H</td>
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</table>

APPENDICES

Appendix I: Draft Authority to Construct Permits
Appendix II: Top-Down BACT Analysis
Appendix III: RMR and AAQA Summary
Appendix IV: Compliance Certification
Appendix I
Draft Authority to Construct Permits
AUTHORITY TO CONSTRUCT

PERMIT NO: N-238-41-2

LEGAL OWNER OR OPERATOR: INGREDION INCORPORATED

MAILING ADDRESS: P O BOX 6129

LOCATION: STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
MODIFICATION OF 185 MMBTU/HR ZURN MODEL 22M KEYSTONE AUXILIARY BOILER WITH A TODD MODEL RMB ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION (FGR) SYSTEM: TO INCREASE VOC EMISSION FACTOR TO 0.004 LB/MMBTU AND ESTABLISH COMBINED DAILY AND ANNUAL HEAT INPUT LIMITS FOR PERMIT UNITS N-238-41, '-42, '-44 AND '-45

CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
3. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
5. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, or 0.1 grain/dscf calculated to 12% CO2 or 10 lb/hr. [District Rules 4201 and 4301] Federally Enforceable Through Title V Permit
6. All equipment, facilities, and systems installed or used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible so as to minimize air pollutant emissions. [District Rule 2201] Federally Enforceable Through Title V Permit

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director
7. A fuel flow meter dedicated to this boiler shall be utilized to monitor the quantity of natural gas fuel burned by the boiler on an hourly basis whenever the boiler is operating. Monitoring shall not be required if the unit is not in operation. [District Rule 2201] Federally Enforceable Through Title V Permit

8. This boiler shall be fired exclusively on PUC-regulated natural gas fuel. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

9. The heat input rate to this unit shall not exceed 178 MMBtu during any one-hour period. [District Rule 2201] Federally Enforceable Through Title V Permit

10. The total heat input rate to boilers under permit units N-238-41, '-42, '-44 and '-45 shall not exceed 4,272 MMBtu during any one day. [District Rule 2201] Federally Enforceable Through Title V Permit

11. The total heat input rate to boilers under permit units N-238-41, '-42, '-44 and '-45 shall not exceed 1,559,280 MMBtu during any 12 consecutive month period. [District Rule 2201] Federally Enforceable Through Title V Permit

12. The total NOx emissions from the boilers under permits N-238-41, '-42, '-44 and '-45 shall not exceed 12,474 pounds during any 12 consecutive month period. [District Rule 2201] Federally Enforceable Through Title V Permit

13. NOx emissions shall not exceed 7 ppmvd @ 3% O2 (0.008 lb/MMBtu) referenced as NO2. [District Rules 2201, 4301, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

14. CO emissions shall not exceed 50 ppmvd @ 3% O2 (0.037 lb/MMBtu). [District Rule 2201] Federally Enforceable Through Title V Permit

15. VOC emissions shall not exceed 10 ppmvd @ 3% O2 (0.004 lb/MMBtu) referenced as methane. [District Rule 2201] Federally Enforceable Through Title V Permit

16. PM10 emissions shall not exceed 0.0076 lb/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

17. SOx emissions shall not exceed 0.0029 lb/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

18. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

19. All emission measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306, 4320 and 4351] Federally Enforceable Through Title V Permit

20. Operator shall ensure that all required source testing conforms with the compliance testing procedures described in District Rule 1081. [District Rule 1081] Federally Enforceable Through Title V Permit

21. Source testing to measure NOx and CO emissions during steady state operation shall be conducted at least once every 12 months. After demonstrating compliance on 2 consecutive annual source tests, the unit shall be tested not less than once every 36 months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every 12 months. [District Rules 4305, 4306, 4320 and 4351] Federally Enforceable Through Title V Permit

22. During the 36-month source testing interval, the owner or operator shall have this unit tuned at least twice each calendar year, from four to eight months apart, in which it operates, by a technician that is qualified, to the satisfaction of the APCO, in accordance with the procedure described in Rule 4304 (Equipment Tuning Procedure for Boilers, Steam Generators, and Process Heaters). [District Rules 4306 and 4320] Federally Enforceable Through Title V Permit

23. If the unit does not operate throughout a continuous six-month period within a calendar year, only one tune-up is required for that calendar year. No tune-up is required for any unit that is not operated during that calendar year. This unit may be test fired to verify availability of the unit for its intended use, but once the test firing is completed the unit shall be shutdown. [District Rules 4306 and 4320] Federally Enforceable Through Title V Permit

24. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
25. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

27. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

28. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

29. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

30. The permittee shall either: a.) perform fuel analysis to determine the following parameters: methane content (%), heating value (Btu/dscf), and sulfur content (gr/S/100 dscf); or b.) obtain and maintain a copy of valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts that contains methane content (%), heating value (Btu/dscf), and sulfur content (gr-S/100 dscf) to verify compliance with the SOx emission limits in this permit. If the permittee decide to conduct fuel analysis, the fuel sample shall be collected within 60 days of startup under this permit and weekly thereafter. Upon successful compliance demonstration on eight consecutive weeks testing, the monitoring frequency shall be every quarter. If the result of any quarterly monitoring fails to demonstrate compliance with SOx emissions, weekly monitoring shall resume until compliance is demonstrated for eight consecutive weeks. [District Rules 2201 and 4320, 40 CFR 60.45b] Federally Enforceable Through Title V Permit

31. The flue gas recirculation rate shall be determined at least on an hourly basis by measuring the stack 02% by volume (Ow), and windbox 02% by volume (Ow) using the following equation: FGR rate = (Ow - 20.9)/(Oo - 20.9) x 100%. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rules 4305, 4306 and 4320 and 40 CFR 64] Federally Enforceable Through Title V Permit

32. The minimum flue gas recirculation rate shall be established by source testing this unit or other representative units per Rule 4305 and as approved by the District. The normal range/level shall be no lower than the minimum flue gas recirculation rate with which compliance with applicable NOx and CO emission limits has been demonstrated through source testing at a similar firing rate. [District Rules 4305, 4306 and 4320 and 40 CFR 64] Federally Enforceable Through Title V Permit

33. If the flue gas recirculation rate is less than the normal range/level, the permittee shall return the flue gas recirculation rate to the normal range/level as soon as possible, but no longer than 1 hour of operation after detection. If the flue gas recirculation rate is not returned to the normal range/level within 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a source test within 60 days of the first exceedance, to demonstrate compliance with the applicable emission limits at the new flue gas recirculation rate. A District-approved portable analyzer may be used in lieu of a source test to demonstrate compliance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320 and 40 CFR 64] Federally Enforceable Through Title V Permit

34. The permittee shall maintain records of the date and time of oxygen concentration measurements, the measured oxygen concentrations, the calculated flue gas recirculation rate, and the firing rate at the time of the oxygen concentration measurements. The records shall also include a description of any corrective action taken to maintain the flue gas recirculation rate within the acceptable range. [District Rules 4305, 4306 and 4320 and 40 CFR 64] Federally Enforceable Through Title V Permit

35. The FGR rate shall be maintained at a level equal to or greater than 0.1% FGR. [District Rule 2520, 9.3.2 and 40 CFR 64] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
36. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR 64] Federally Enforceable Through Title V Permit

37. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR part 64.9. [40 CFR 64] Federally Enforceable Through Title V Permit

38. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR part 64.8. [40 CFR 64] Federally Enforceable Through Title V Permit

39. The owner or operator shall keep records of hourly heat input rate (MMBtu) to this unit. [District Rule 2201] Federally Enforceable Through Title V Permit

40. The owner or operator shall monitor and record the higher heating value (HHV) of the fuel combusted in this unit. The HHV shall be certified by third party fuel supplier or determined annually using ASTM D 1826-88 or D 1945-81 in conjunction with ASTM D 3588-89 for gaseous fuels. [District Rule 4351] Federally Enforceable Through Title V Permit

41. The owner or operator shall keep records of the total heat input (MMBtu) for the boilers under permits N-238-41, '42, '44 and '45 on a daily basis. [District Rule 2201] Federally Enforceable Through Title V Permit

42. The owner or operator shall keep records of the cumulative annual use of the fuel combusted in this unit. [District Rule 4351] Federally Enforceable Through Title V Permit

43. The owner or operator shall keep monthly records of the total heat input (MMBtu) for the boilers under permits N-238-41, '42, '44 and '45. These records shall be used to determine the total heat input (MMBtu) during 12 consecutive month period on a rolling basis. [District Rule 2201] Federally Enforceable Through Title V Permit

44. The owner or operator shall keep monthly records of the total NOx emissions (pounds) for the boilers under permits N-238-41, '42, '44 and '45. These records shall be used to determine the total NOx emissions (pounds) during 12 consecutive month period on a rolling basis. [District Rule 2201] Federally Enforceable Through Title V Permit

45. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070; 2520, 9.4.2; 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

46. This boiler shall be in compliance with Title 40, Code of Federal Regulations, Part 60, Subparts A and Db. The owner or operator shall comply with the terms of the plan submitted under the provisions of section 60.48b(g)(2); specifically: i.) The owner or operator shall demonstrate compliance with the applicable standard for nitrogen oxides by hourly monitoring the flue gas recirculation rate as established by this unit's source test, and ii.) The owner or operator shall maintain records of the auxiliary boiler's fuel usage for at least five years and make these records available to EPA upon request. [40 CFR Part 60, Subpart Db] Federally Enforceable Through Title V Permit

47. Prior to operating under ATCs N-238-41-2, '42-1, '44-0 or '45-0, the owner or operator shall mitigate the following quantities of VOC: 1st quarter: 1,754 lb, 2nd quarter: 1,754 lb, 3rd quarter: 1,754 lb, and 4th quarter: 1,755 lb. These quarterly amounts already include the applicable distance offset ratio per section 4.8.1 of Rule 2201 (4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit

48. VOC ERC S-4359-1 (or a certificate split from this certificate) shall be used to supply the required VOC offsets, unless a revised offsetting proposal is received and approved by the District. Following the revisions, this Authority to Construct permit shall be re-issued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to re-issuance of this Authority to Construct permit. [District Rule 2201] Federally Enforceable Through Title V Permit

49. Authority to Construct N-238-41-1 and '42-0 shall be implemented prior to, or concurrently with the implementation of this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-238-42-1
LEGAL OWNER OR OPERATOR: INGREDION INCORPORATED
MAILING ADDRESS: P O BOX 6129
STOCKTON, CA 95206
LOCATION: 1021 INDUSTRIAL DR
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
MODIFICATION OF 28.8 MMBTU/HR HURST MODEL S2X-G-650-250 (OR EQUIVALENT MANUFACTURER AND
MODEL) BOILER WITH ALZETA MODEL CSB 22-25O-30/30 (OR EQUIVALENT MANUFACTURER OR MODEL)
BURNER SYSTEM: ESTABLISH COMBINED DAILY AND ANNUAL HEAT INPUT LIMITS FOR PERMIT UNITS N-238-41,
'-42, '-44 AND '-45

CONDITIONS

1. {1829} The facility shall submit an application to modify the Title V permit in accordance with the timeframes and
procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit
2. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40
CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally
Enforceable Through Title V Permit
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three
minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
Federally Enforceable Through Title V Permit
5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally
Enforceable Through Title V Permit
6. The unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320] Federally Enforceable Through
Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 567-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO
OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE.
Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the
approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all
Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this
Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with
all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

Arnaud Marjollet, Director of Permit Services
Northern Regional Office • 4800 Enterprise Way • Modesto, CA 95356-8718 • (209) 557-6400 • Fax (209) 557-6475
7. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the unit shall be installed, utilized and maintained. [District Rule 2201 and 40 CFR 60.48e(g)] Federally Enforceable Through Title V Permit

8. The total heat input rate to boilers under permit units N-238-41, '-42, '-44 and '-45 shall not exceed 4,272 MMBtu during any one day. [District Rule 2201] Federally Enforceable Through Title V Permit

9. The total heat input rate to boilers under permit units N-238-41, '-42, '-44 and '-45 shall not exceed 1,559,280 MMBtu during any 12 consecutive month period. [District Rule 2201] Federally Enforceable Through Title V Permit

10. The total NOx emissions from the boilers under permits N-238-41, '-42, '-44 and '-45 shall not exceed 12,474 pounds during any 12 consecutive month period. [District Rule 2201] Federally Enforceable Through Title V Permit

11. NOx emissions shall not exceed 7 ppmvd @ 3% O2 (0.008 lb/MMBtu) referenced as NO2. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

12. CO emissions shall not exceed 50 ppmvd @ 3% O2 (0.037 lb/MMBtu). [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

13. SOx emissions shall not exceed 0.00285 lb/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

14. PM10 emissions shall not exceed 0.0076 lb/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

15. VOC emissions shall not exceed 10 ppmvd @ 3% O2 (0.004 lb/MMBtu) referenced as methane. [District Rule 2201] Federally Enforceable Through Title V Permit

16. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

17. Source testing to measure NOx and CO emissions from this unit while fired on natural gas shall be conducted within 60 days of initial start-up. The results of the initial test conducted under permit N-238-42-0 may be substituted instead of conducting a separate initial source test. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

18. Source testing to measure NOx and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

19. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

20. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

21. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

22. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit

23. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

24. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.6 of District Rule 4320. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
25. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

27. The permitting shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

28. If either the NOx or CO concentrations corrected to 3% O2, as measured by the portable analyzer, exceed the allowable emissions concentration, the permitting shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permitting shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permitting may stipulate a violation has occurred, subject to enforcement action. The permitting must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permitting may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

29. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

30. The permitting shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

31. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320] Federally Enforceable Through Title V Permit

32. The owner or operator shall maintain daily and monthly records of the type and quantity of the fuel combusted by the boiler. [District Rules 2201 and 4351, and 40 CFR 60.48c(g)] Federally Enforceable Through Title V Permit

33. The owner or operator shall monitor and record the higher heating value (HHV) of the fuel combusted in this unit. The HHV shall be certified by thirty party fuel supplier or determined annually using ASTM D 1826-88 or D 1945-81 in conjunction with ASTM D 3588-89 for gaseous fuels. [District Rule 4351] Federally Enforceable Through Title V Permit

34. The owner or operator shall keep records of the total heat input (MMBtu) for the boilers under permits N-238-41, '42, '44 and '45 on a daily basis. [District Rule 2201] Federally Enforceable Through Title V Permit

35. The owner or operator shall keep monthly records of the total heat input (MMBtu) for the boilers under permits N-238-41, '42, '44 and '45. These records shall be used to determine the total heat input (MMBtu) during 12 consecutive month period on a rolling basis. [District Rule 2201] Federally Enforceable Through Title V Permit

36. The owner or operator shall keep monthly records of the total NOx emissions (pounds) for the boilers under permits N-238-41, '42, '44 and '45. These records shall be used to determine the total NOx emissions (pounds) during 12 consecutive month period on a rolling basis. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
37. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4305, 4306 and 4320, and 40 CFR 60.48e(i)] Federally Enforceable Through Title V Permit

38. Prior to operating under ATCs N-238-41-2, '42-1, '44-0 or '45-0, the owner or operator shall mitigate the following quantities of VOC: 1st quarter: 1,754 lb, 2nd quarter: 1,754 lb, 3rd quarter: 1,754 lb, and 4th quarter: 1,755 lb. These quarterly amounts already include the applicable distance offset ratio per section 4.8.1 of Rule 2201 (4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit

39. VOC ERC S-4359-1 (or a certificate split from this certificate) shall be used to supply the required VOC offsets, unless a revised offsetting proposal is received and approved by the District. Following the revisions, this Authority to Construct permit shall be re-issued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to re-issuance of this Authority to Construct permit. [District Rule 2201] Federally Enforceable Through Title V Permit

40. Authority to Construct N-238-41-1 and '42-0 shall be implemented prior to, or concurrently with the implementation of this permit. [District Rule 2201] Federally Enforceable Through Title V Permit

41. The permittee shall obtain APCO approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of an equivalent equipment equipment shall only be made after the APCO's determination that the submitted design and performance data for the proposed alternate equipment are equivalent to the approved equipment. [District Rule 2201] Federally Enforceable Through Title V Permit

42. The permittee's request for approval of an equivalent equipment shall include, at minimum, the following information: burner manufacturer and model number, maximum heat input rating, and manufacturer's guaranteed NOx and CO emission concentrations. [District Rule 2201] Federally Enforceable Through Title V Permit

43. The permittee's request for approval of an equivalent equipment shall be submitted to the District at least 30 days prior to the planned installation date. The permittee shall also notify the District at least 15 days prior to the actual installation of the District approved equivalent equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-238-44-0

LEGAL OWNER OR OPERATOR: INGREDION INCORPORATED
MAILING ADDRESS: P O BOX 6129
STOCKTON, CA 95206

LOCATION: 1021 INDUSTRIAL DR
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
99.9 MMBTU/HR NEBRASKA MODEL NOS-2A/S-64 (OR EQUIVALENT MANUFACTURER AND MODEL) BOILER WITH TCOOD OR JOHN ZINK VARIFLAME (OR EQUIVALENT MANUFACTURER AND MODEL) LOW-NOX BURNER SYSTEM WITH A CADASTACK (OR EQUIVALENT MANUFACTURER) SELECTIVE CATALYTIC REDUCTION SYSTEM

CONDITIONS

1. (1829) The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit

2. (1830) This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(o). [District Rule 2201] Federally Enforceable Through Title V Permit

3. (98) No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

4. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringemann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit

5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit

6. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]

7. The unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCCO

Arnaud Marjollel, Director of Permit Services
Northern Regional Office • 4800 Enterprise Way • Modesto, CA 95356-8718 • (209) 557-6400 • Fax (209) 557-6475
1. Stack gas oxygen (O2) shall be determined by the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 2201] Federally Enforceable Through Title V Permit

2. The total heat input rate to boilers under permit units N-238-41, '42, '44 and '45 shall not exceed 4,272 MMBtu during any one day. [District Rule 2201] Federally Enforceable Through Title V Permit

3. The total heat input rate to boilers under permit units N-238-41, '42, '44 and '45 shall not exceed 1,559,280 MMBtu during any 12 consecutive month period. [District Rule 2201] Federally Enforceable Through Title V Permit

4. The total NOx emissions from the boilers under permits N-238-41, '42, '44 and '45 shall not exceed 12,474 pounds during any 12 consecutive month period. [District Rule 2201] Federally Enforceable Through Title V Permit

5. During start-up or shutdown, the emissions control systems shall be in operation, and emissions shall be minimized insofar as technologically possible. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

6. Startup/shutdown shall not exceed any of the following items: startup - 2.0 hours/event, 2.0 hours/day and 200 hours/year; shutdown - 1.0 hour/event, 1.0 hour/day and 100 hours/year. [District Rules 2201, 4306 and 4320] Federally Enforceable Through Title V Permit

7. During startup and shutdown, NOx emissions shall not exceed 25 ppmvd @ 3% O2 or 0.030 lb/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

8. Except during startup and shutdown, NOx emissions shall not exceed 5 ppmvd @ 3% O2 or 0.0062 lb/MMBtu, referenced as NO2. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

9. CO emissions shall not exceed 50 ppmvd @ 3% O2 (0.037 lb/MMBtu). [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

10. SOx emissions shall not exceed 0.00285 lb/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

11. PM10 emissions shall not exceed 0.0076 lb/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

12. VOC emissions shall not exceed 10 ppmvd @ 3% O2 (0.004 lb/MMBtu) referenced as methane. [District Rule 2201] Federally Enforceable Through Title V Permit

13. NH3 emissions from the SCR shall not exceed 10.0 ppmvd @ 3% O2. [District Rule 2201] Federally Enforceable Through Title V Permit

14. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

15. Source testing to measure steady state NOx, CO, VOC and NH3 emissions shall be conducted within 60-days of the initial startup. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

16. Source testing to measure NOx, CO and NH3 emissions during steady state operation shall be conducted at least once every 12 months. After demonstrating compliance on 2 consecutive annual source tests, the unit shall be tested not less than once every 36 months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every 12 months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

17. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

18. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

19. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
27. VOC emissions for source test purpose shall be determined using EPA Method 18, 25A, or other District approved alternative method. [District Rule 2201] Federally Enforceable Through Title V Permit

28. Source testing for ammonia slip shall be conducted utilizing BAAQMD Method ST-1B. [District Rule 1081] Federally Enforceable Through Title V Permit

29. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit

30. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

32. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

33. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

34. The permittee shall monitor and record the stack concentration of NOx, CO, NH3 and O2 at least once during each month in which source testing is not performed. NOx, CO and O2 monitoring shall be conducted utilizing a portable analyzer that meets District specifications. NH3 monitoring shall be conducted utilizing gas detection tubes (Draeger brand or District approved equivalent). Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless it has been performed within the last month. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

35. If either the NOx, CO or NH3 concentrations, as measured by the portable analyzer or the District approved ammonia monitoring equipment, exceed the permitted levels the permittee shall return the emissions to compliant levels as soon as possible, but no longer than 1 hour after detection. If the portable analyzer or the ammonia monitoring equipment continue to show emission limit violations after 1 hour of operation following detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation that is subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

36. All NOx, CO, O2 and ammonia emission readings shall be taken with the unit operating at conditions representative of normal operation or under the conditions specified in the Permit to Operate. The NOx, CO and O2 analyzer as well as the NH3 emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Analyzer readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

37. Ammonia emissions readings shall be conducted at the time the NOx, CO and O2 readings are taken. The readings shall be converted to ppmvd @ 3% O2. [District Rules 2201, 4305 and 4306] Federally Enforceable Through Title V Permit

38. The permittee shall maintain records of: (1) the date and time of NOx, CO, NH3 and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx, CO and NH3 concentrations corrected to 3% O2, (3) make and model of the portable analyzer, (4) portable analyzer calibration records, (5) the method of determining the NH3 emission concentration, and (6) a description of any corrective action taken to maintain the emissions at or below the acceptable levels. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
39. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320] Federally Enforceable Through Title V Permit

40. The owner or operator shall maintain daily and monthly records of the type and quantity of the fuel combusted by the boiler. [District Rules 2201 and 4351, and 40 CFR 60.48c(g)] Federally Enforceable Through Title V Permit

41. The owner or operator shall monitor and record the higher heating value (HHV) of the fuel combusted in this unit. The HHV shall be certified by third party fuel supplier or determined annually using ASTM D 1826-88 or D 1945-81 in conjunction with ASTM D 3588-89 for gaseous fuels. [District Rule 4351] Federally Enforceable Through Title V Permit

42. The owner or operator shall keep records of the total heat input (MMBtu) for the boilers under permits N-238-41, N-42, N-44 and N-45 on a daily basis. [District Rule 2201] Federally Enforceable Through Title V Permit

43. The owner or operator shall keep monthly records of the total heat input (MMBtu) for the boilers under permits N-238-41, N-42, N-44 and N-45. These records shall be used to determine the total heat input (MMBtu) during 12 consecutive month period on a rolling basis. [District Rule 2201] Federally Enforceable Through Title V Permit

44. The owner or operator shall keep monthly records of the total NOx emissions (pounds) for the boilers under permits N-238-41, N-42, N-44 and N-45. These records shall be used to determine the total NOx emissions (pounds) during 12 consecutive month period on a rolling basis. [District Rule 2201] Federally Enforceable Through Title V Permit

45. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4305, 4306 and 4320, and 40 CFR 60.48c(i)] Federally Enforceable Through Title V Permit

46. Prior to operating under ATCs N-238-41, N-42, N-44 or N-45, the owner or operator shall mitigate the following quantities of VOC: 1st quarter: 1,754 lb, 2nd quarter: 1,754 lb, 3rd quarter: 1,754 lb, and 4th quarter: 1,755 lb. These quarterly amounts already include the applicable distance offset ratio per section 4.8.1 of Rule 2201 (4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit

47. VOC ERC S-4359-1 (or a certificate split from this certificate) shall be used to supply the required VOC offsets, unless a revised offsetting proposal is received and approved by the District. Following the revisions, this Authority to Construct permit shall be re-issued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to re-issuance of this Authority to Construct permit. [District Rule 2201] Federally Enforceable Through Title V Permit

48. The permittee shall obtain APCO approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of an equivalent equipment shall only be made after the APCO's determination that the submitted design and performance data for the proposed alternate equipment are equivalent to the approved equipment. [District Rule 2201] Federally Enforceable Through Title V Permit

49. The permittee's request for approval of an equivalent equipment shall include, at minimum, the following information: burner manufacturer and model number, maximum heat input rating, and manufacturer's guaranteed NOx and CO emission concentrations. [District Rule 2201] Federally Enforceable Through Title V Permit

50. The permittee's request for approval of an equivalent equipment shall be submitted to the District at least 30 days prior to the planned installation date. The permittee shall also notify the District at least 15 days prior to the actual installation of the District approved equivalent equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
AUTHORITY TO CONSTRUCT

PERMIT NO: N-238-45-0

LEGAL OWNER OR OPERATOR: INGREDION INCORPORATED
MAILING ADDRESS: P O BOX 6129
STOCKTON, CA 95206

LOCATION: 1021 INDUSTRIAL DR
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
99.9 MMBTU/HR NEBRASKA MODEL NOS-2A/S-64 (OR EQUIVALENT MANUFACTURER AND MODEL) BOILER WITH TODD OR JOHN ZINK VARIFLAME (OR EQUIVALENT MANUFACTURER AND MODEL) LOW-NOX BURNER SYSTEM WITH A CADASTACK (OR EQUIVALENT MANUFACTURER) SELECTIVE CATALYTIC REDUCTION SYSTEM

CONDITIONS

1. The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520] Federally Enforceable Through Title V Permit

2. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit

3. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

4. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit

5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit

6. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]

7. The unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

Arnaud Mariolle, Director of Permit Services
Northern Regional Office • 4800 Enterprise Way • Modesto, CA 95356-8718 • (209) 557-6400 • Fax (209) 557-6475
8. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rule 2201 and 40 CFR 60.48(e)] Federally Enforceable Through Title V Permit

9. The total heat input rate to boilers under permit units N-238-41, '-42, '-44 and '-45 shall not exceed 4,272 MMBtu during any one day. [District Rule 2201] Federally Enforceable Through Title V Permit

10. The total heat input rate to boilers under permit units N-238-41, '-42, '-44 and '-45 shall not exceed 1,559,280 MMBtu during any 12 consecutive month period. [District Rule 2201] Federally Enforceable Through Title V Permit

11. The total NOx emissions from the boilers under permits N-238-41, '-42, '-44 and '-45 shall not exceed 12,474 pounds during any 12 consecutive month period. [District Rule 2201] Federally Enforceable Through Title V Permit

12. During start-up or shutdown, the emissions control systems shall be in operation, and emissions shall be minimized insofar as technologically possible. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

13. Startup/shutdown shall not exceed any of the following items: startup - 2.0 hours/event, 2.0 hours/day and 200 hours/year; shutdown - 1.0 hour/event, 1.0 hour/day and 100 hours/year. [District Rules 2201, 4306 and 4320] Federally Enforceable Through Title V Permit

14. During startup and shutdown, NOx emissions shall not exceed 25 ppmv @ 3% O2 or 0.030 lb/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Except during startup and shutdown, NOx emissions shall not exceed 5 ppmv @ 3% O2 or 0.0062 lb/MMBtu, referenced as NO2 [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

16. CO emissions shall not exceed 50 ppmv @ 3% O2 (0.037 lb/MMBtu). [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

17. SOx emissions shall not exceed 0.00285 lb/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

18. PM10 emissions shall not exceed 0.0076 lb/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit

19. VOC emissions shall not exceed 10 ppmv @ 3% O2 (0.004 lb/MMBtu) referenced as methane. [District Rule 2201] Federally Enforceable Through Title V Permit

20. NH3 emissions from the SCR shall not exceed 10.0 ppmv @ 3% O2. [District Rule 2201] Federally Enforceable Through Title V Permit

21. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

22. Source testing to measure steady state NOx, CO, VOC and NH3 emissions shall be conducted within 60-days of the initial startup. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

23. Source testing to measure NOx, CO and NH3 emissions during steady state operation shall be conducted at least once every 12 months. After demonstrating compliance on 2 consecutive annual source tests, the unit shall be tested not less than once every 36 months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every 12 months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

24. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

25. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

26. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
27. VOC emissions for source test purpose shall be determined using EPA Method 18, 25A, or other District approved alternative method. [District Rule 2201] Federally Enforceable Through Title V Permit

28. Source testing for ammonia slip shall be conducted utilizing BAAQMD Method ST-1B. [District Rule 1081] Federally Enforceable Through Title V Permit

29. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit

30. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

31. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

32. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

33. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

34. The permittee shall monitor and record the stack concentration of NOx, CO, NH3 and O2 at least once during each month in which source testing is not performed. NOx, CO and O2 monitoring shall be conducted utilizing a portable analyzer that meets District specifications. NH3 monitoring shall be conducted utilizing gas detection tubes (Draeger brand or District approved equivalent). Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless it has been performed within the last month. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

35. If either the NOx, CO or NH3 concentrations, as measured by the portable analyzer or the District approved ammonia monitoring equipment, exceed the permitted levels the permittee shall return the emissions to compliant levels as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer or the ammonia monitoring equipment continue to show emission limit violations after 1 hour of operation following detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation that is subject to enforcement action has occurred. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

36. All NOx, CO, O2 and ammonia emission readings shall be taken with the unit operating at conditions representative of normal operation or under the conditions specified in the Permit to Operate. The NOx, CO and O2 analyzer as well as the NH3 emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Analyzer readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

37. Ammonia emissions readings shall be conducted at the time the NOx, CO and O2 readings are taken. The readings shall be converted to ppmvd @ 3% O2. [District Rules 2201, 4305 and 4306] Federally Enforceable Through Title V Permit

38. The permittee shall maintain records of: (1) the date and time of NOx, CO, NH3 and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOx, CO and NH3 concentrations corrected to 3% O2, (3) make and model of the portable analyzer, (4) portable analyzer calibration records, (5) the method of determining the NH3 emission concentration, and (6) a description of any corrective action taken to maintain the emissions at or below the acceptable levels. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE
39. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320] Federally Enforceable Through Title V Permit

40. The owner or operator shall maintain daily and monthly records of the type and quantity of the fuel combusted by the boiler. [District Rules 2201 and 4351, and 40 CFR 60.48c(g)] Federally Enforceable Through Title V Permit

41. The owner or operator shall monitor and record the higher heating value (HHV) of the fuel combusted in this unit. The HHV shall be certified by thirty party fuel supplier or determined annually using ASTM D 1826-88 or D 1945-81 in conjunction with ASTM D 3588-89 for gaseous fuels. [District Rule 4351] Federally Enforceable Through Title V Permit

42. The owner or operator shall keep records of the total heat input (MMBtu) for the boilers under permits N-238-41, '42, '44 and '45 on a daily basis. [District Rule 2201] Federally Enforceable Through Title V Permit

43. The owner or operator shall keep monthly records of the total heat input (MMBtu) for the boilers under permits N-238-41, '42, '44 and '45. These records shall be used to determine the total heat input (MMBtu) during 12 consecutive month period on a rolling basis. [District Rule 2201] Federally Enforceable Through Title V Permit

44. The owner or operator shall keep monthly records of the total NOx emissions (pounds) for the boilers under permits N-238-41, '42, '44 and '45. These records shall be used to determine the total NOx emissions (pounds) during 12 consecutive month period on a rolling basis. [District Rule 2201] Federally Enforceable Through Title V Permit

45. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070, 2201, 4305, 4306 and 4320, and 40 CFR 60.48c(i)] Federally Enforceable Through Title V Permit

46. Prior to operating under ATCs N-238-41-2, 42-1, '44-0 or '45-0, the owner or operator shall mitigate the following quantities of VOC: 1st quarter: 1,754 lb, 2nd quarter: 1,754 lb, 3rd quarter: 1,754 lb, and 4th quarter: 1,755 lb. These quarterly amounts already include the applicable distance offset ratio per section 4.8.1 of Rule 2201 (4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit

47. VOC ERC S-4359-1 (or a certificate split from this certificate) shall be used to supply the required VOC offsets, unless a revised offsetting proposal is received and approved by the District. Following the revisions, this Authority to Construct permit shall be re-issued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to re-issuance of this Authority to Construct permit. [District Rule 2201] Federally Enforceable Through Title V Permit

48. The permittee shall obtain APCO approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of an equivalent equipment equipment shall only be made after the APCO's determination that the submitted design and performance data for the proposed alternate equipment are equivalent to the approved equipment. [District Rule 2201] Federally Enforceable Through Title V Permit

49. The permittee's request for approval of an equivalent equipment shall include, at minimum, the following information: burner manufacturer and model number, maximum heat input rating, and manufacturer's guaranteed NOx and CO emission concentrations. [District Rule 2201] Federally Enforceable Through Title V Permit

50. The permittee's request for approval of an equivalent equipment shall be submitted to the District at least 30 days prior to the planned installation date. The permittee shall also notify the District at least 15 days prior to the actual installation of the District approved equivalent equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
Appendix II
Top-Down BACT Analysis
N-238-41-2
185 MMBTU/HR ZURN MODEL 22M KEYSTONE AUXILIARY BOILER WITH A
TODD MODEL RMB ULTRA LOW NOX BURNER AND A FLUE GAS
RECIRCULATION (FGR) SYSTEM
Top-Down BACT Analysis for VOC Emissions

Step 1: Identify All Possible Control Technologies

The District considers the following BACT standards to reduce VOC emissions:

Achieved-in-Practice:
Use natural gas, or LPG fuel

Technologically Feasible:
None

Alternate Basic Equipment:
None

Step 2: Eliminate Technologically Infeasible Options

All control options listed in step 1 are technologically feasible.

Step 3: Rank Remaining Control Technologies by Control Effectiveness

1. Use of natural gas or LPG fuel

Step 4: Cost Effectiveness Analysis

There is no technologically feasible option in Step 3 for which cost-effectiveness analysis is required.

Step 5: Select BACT

BACT requirement is to use natural gas or LPG fuels. The applicant has proposed to use natural gas in the boiler. Thus, the BACT requirements are satisfied.
N-238-42-1
28.8 MMBTU/HR HURST MODEL S2X-G-650-250 (OR EQUIVALENT MANUFACTURER AND MODEL) BOILER WITH ALZETA MODEL CSB 22-2SO-30/30 (OR EQUIVALENT MANUFACTURER OR MODEL) BURNER SYSTEM
Top-Down BACT Analysis for NOx Emissions

Step 1: Identify All Possible Control Technologies

The District considers the following NOx emissions limits for boilers with heat input rate of greater than 20 MMBtu/hr:

**Achieved-in-Practice:**
7 ppmvd @ 3% O₂ (0.008 lb/MMBtu)

**Technologically Feasible:**
5 ppmvd @ 3% O₂ (0.006 lb/MMBtu)

**Alternate Basic Equipment:**
None

Step 2: Eliminate Technologically Infeasible Options

All control options listed in step 1 are technologically feasible.

Step 3: Rank Remaining Control Technologies by Control Effectiveness

1. 5 ppmvd @ 3% O₂ (0.006 lb/MMBtu) - Technologically Feasible
2. 7 ppmvd @ 3% O₂ (0.008 lb/MMBtu) - Achieved-in-Practice

Step 4: Cost Effectiveness Analysis

**Option 1:** 5 ppmvd @ 3% O₂ (0.006 lb/MMBtu)
Under project N-1141447 (deemed complete on April 14, 2014, Yorke Engineering, LLC, estimated that the capital cost to install an SCR system for a 28.8 MMBtu/hr natural gas-fired unit would be $280,000. The annualized cost would be:

\[
A = \left(\frac{0.1(1+0.1)^{10}}{(1+0.1)^{10} - 1}\right) \times \frac{\$280,000}{\text{year}} = \frac{\$45,569}{\text{yr}}
\]

In determining the cost of reduction, typically the District uses the emission reduction that can be achieved from the current "industry standard". Rule 4320 limit of 7 ppmvd @ 19% O₂ (0.008 lb/MMBtu) is assumed to be the "industry standard". Therefore, the reduction from the "industry standard" would be 505 lb-NOx/yr \([(0.008-0.006 \text{ lb/MMBtu})(28.8 \text{ MMBtu/hr})(8,760 \text{ hr/yr})]\).

Cost of Reduction ($/ton):

\[
\frac{\left(\frac{\$45,569}{\text{year}}\right)(2,000 \text{ lb/ton})}{505 \text{ lb-NOx/year}} = \frac{\$180,471}{\text{ton}}
\]
The cost of reduction of NO\textsubscript{x} emissions is greater than the threshold limit of $24,500/ton; therefore, it is not cost effective to achieve this limit, and is not required at this time.

Option 2: 7 ppmvd @ 3\% O\textsubscript{2} (0.008 lb/MMBtu)
This option is an achieved-in-practice option. Therefore, cost-effectiveness analysis is not performed.

Step 5: Select BACT

BACT requirement is to achieve 7 ppmvd NO\textsubscript{x} @ 3\% O\textsubscript{2} (or less) concentrations. The applicant has proposed to comply with the BACT requirement.
Top-Down BACT Analysis for VOC Emissions

Step 1: Identify All Possible Control Technologies

The District considers the following BACT standards to reduce VOC emissions:

**Achieved-in-Practice:**
Use natural gas, or LPG fuel

**Technologically Feasible:**
None

**Alternate Basic Equipment:**
None

Step 2: Eliminate Technologically Infeasible Options

All control options listed in step 1 are technologically feasible.

Step 3: Rank Remaining Control Technologies by Control Effectiveness

1. Use of natural gas or LPG fuel

Step 4: Cost Effectiveness Analysis

There is no technologically feasible option in Step 3 for which cost-effectiveness analysis is required.

Step 5: Select BACT

BACT requirement is to use natural gas or LPG fuels. The applicant has proposed to use natural gas in the boiler. Thus, the BACT requirements are satisfied.
N-238-44-0 or '45-0 (identical units)
99.9 MMBTU/HR NEBRASKA MODEL NOS-2A/S-64 (OR EQUIVALENT MANUFACTURER AND MODEL) BOILER WITH TODD OR JOHN ZINK VARIFLAME (OR EQUIVALENT MANUFACTURER AND MODEL) LOW-NOX BURNER SYSTEM WITH A CADASTACK (OR EQUIVALENT MANUFACTURER) SELECTIVE CATALYTIC REDUCTION SYSTEM
Top-Down BACT Analysis for NOx Emissions

Step 1: Identify All Possible Control Technologies

The District considers the following BACT standards for NOx for boilers greater than 20.0 MMBtu/hr:

Achieved-in-Practice:
7 ppmvd @ 3% O₂ (0.008 lb/MBtu)

Technologically Feasible:
5 ppmvd @ 3% O₂ (0.0062 lb/MBtu)

Alternate Basic Equipment:
None

Step 2: Eliminate Technologically Infeasible Options

All control options listed in step 1 are technologically feasible.

Step 3: Rank Remaining Control Technologies by Control Effectiveness

3. 5 ppmvd @ 3% O₂ (0.007 lb/MBtu) - Technologically Feasible
4. 7 ppmvd @ 3% O₂ (0.011 lb/MBtu) - Achieved-in-Practice

Step 4: Cost Effectiveness Analysis

The applicant has proposed to achieve 5 ppmvd NOx @ 3% O₂ (or less), which is the most stringent NOx BACT standard listed in Step 3. Therefore, cost-effectiveness analysis is not required.

Step 5: Select BACT

The applicant has proposed to achieve 5 ppmvd NOx @ 3% O₂ (or less). This standard satisfies the District BACT requirements for NOx emissions.
**Top-Down BACT Analysis for SOx, PM10, CO, and VOC Emissions**

**Step 1: Identify All Possible Control Technologies**

The following techniques are considered to reduce SOx, PM10, Co and VOC emissions.

**Achieved-in-Practice:**
Use natural gas, or LPG fuel

**Technologically Feasible:**
None

**Alternate Basic Equipment:**
None

**Step 2: Eliminate Technologically Infeasible Options**

All control options listed in step 1 are technologically feasible.

**Step 3: Rank Remaining Control Technologies by Control Effectiveness**

1. use of natural gas or LPG fuel

**Step 4: Cost Effectiveness Analysis**

There is no technologically feasible option in Step 3. Therefore, cost-effectiveness analysis is not required.

**Step 5: Select BACT**

BACT requirement is to use natural gas or LPG fuels to reduce SOx, PM10, CO and VOC emissions. The applicant has proposed to use natural gas in the boilers. Thus, the BACT requirements are satisfied.
Appendix III
RMR and AAQA Summary
San Joaquin Valley Air Pollution Control District
Risk Management Review

To:        Jag Kahlon – Permit Services
From:      Cheryl Lawler – Technical Services
Date:      November 19, 2014
Facility Name:  Ingredion Inc.
Location:   1021 Industrial Drive, Stockton
Application #(s):  N-238-41-2, 42-1, 44-0, & 45-0
Project #:   N-1143155

A. RMR SUMMARY

<table>
<thead>
<tr>
<th>Categories</th>
<th>Two New Natural Gas Boilers (Units 44-0 &amp; 45-0)</th>
<th>Project Totals</th>
<th>Facility Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prioritization Score</td>
<td>0.35</td>
<td>0.35</td>
<td>&gt;1</td>
</tr>
<tr>
<td>Acute Hazard Index</td>
<td>0.00</td>
<td>0.00</td>
<td>0.12</td>
</tr>
<tr>
<td>Chronic Hazard Index</td>
<td>0.00</td>
<td>0.00</td>
<td>0.05</td>
</tr>
<tr>
<td>Maximum Individual Cancer Risk</td>
<td>1.71E-7</td>
<td>1.71E-7</td>
<td>2.11E-07</td>
</tr>
<tr>
<td>T-BACT Required?</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Permit Conditions?</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Proposed Permit Conditions

To ensure that human health risks will not exceed District allowable levels, the following permit conditions must be included for:

Units 44-0 & 45-0

1. (1898) The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] N

I. Project Description

Technical Services received a request on November 12, 2014, to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for four natural gas boilers. For Units 41-2 and 42-1, the hourly and annual limits, as well as boiler ratings are not changing; and a RMR and AAQA were previously run for these units (N-1141447). Therefore, no further analysis was required for these two units. This RMR and AAQA project will only address Units 44-0 and 45-0 (the two new natural gas boilers).
II. Analysis

Toxic emissions from the boilers were calculated using Ventura County emission factors for external combustion of natural gas. In accordance with the District’s Risk Management Policy for Permitting New and Modified Sources (APR 1905-1, March 2, 2001), risks from the proposed project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District’s HEART’s database. The prioritization score for the proposed project was less than 1.0 (see RMR Summary Table). However, the facility total prioritizations were greater than one; therefore, a refined Health Risk Assessment was required and performed for the project. AERMOD was used with point source parameters outlined below and concatenated 5-year meteorological data from Stockton to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk for the project using a worksite adjustment.

The following parameters were used for the review:

<table>
<thead>
<tr>
<th>Analysis Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Type</td>
</tr>
<tr>
<td>Stack Height (m)</td>
</tr>
<tr>
<td>Stack Diameter (m)</td>
</tr>
<tr>
<td>Stack Gas Temperature (K)</td>
</tr>
<tr>
<td>Stack Gas Velocity (m/sec)</td>
</tr>
</tbody>
</table>

Technical Services also performed modeling for criteria pollutants CO, NOx, SOx and PM10, as well as a RMR. For each boiler, the emission rates used for criteria pollutant modeling were 3.696 lb/hr CO, 3.0 lb/hr NOx, 0.285 lb/hr SOx, and 0.759 lb/hr PM10.

The results from the Criteria Pollutant Modeling are as follows:

<table>
<thead>
<tr>
<th>Criteria Pollutant Modeling Results*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas Boilers</td>
</tr>
<tr>
<td>CO</td>
</tr>
<tr>
<td>NOx</td>
</tr>
<tr>
<td>SOx</td>
</tr>
<tr>
<td>PM10</td>
</tr>
</tbody>
</table>

*Results were taken from the attached PSD spreadsheet
†The project was compared to the 1-hour NO2 National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.
‡The criteria pollutants are below EPA’s level of significance as found in 40 CFR Part 51.165 (b)(2).
III. Conclusions

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

The acute and chronic indices were below 1.0; and the Cancer Risk was less than one in a million. In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on Page 1 of this report must be included for the proposed units.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

Attachments

RMR Request Form
Facility Photo
Boiler Stack Parameters Calculations
Prioritization
Risk Results
AAQA Results
Facility Summary
December 18, 2014

Mr. Nick Peirce
Permit Services Manager
San Joaquin Valley Air Pollution Control District
4800 Enterprise Way
Modesto CA 95356-8718

Subject: Compliance Statement for Ingredion Incorporated

Dear Mr. Peirce:

In accordance with Rule 2201, Section 4.15, "Additional Requirements for New Major Sources and Federal Major Modifications," Ingredion Incorporated is pleased to provide this compliance statement regarding its proposed boilers project N-1143155.

All major stationary sources in California owned or operated by Ingredion Incorporated, or by any entity controlling, controlled by, or under common control with Ingredion Incorporated, and which are subject to emission limitations, are in compliance or on a schedule for compliance with all applicable emission limitations and standards. These sources include one or more of the following facilities:

Facility #1: Ingredion Incorporated, 1021 Industrial Drive, Stockton, CA (N-238)

Based on the information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Please contact me if you have any questions regarding this certification.

Sincerely,

Matt Landry
Stockton Plant Operations Manager
Ingredion Incorporated
(209) 982-1920
San Joaquin Valley
Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

[ ] SIGNIFICANT PERMIT MODIFICATION [ ] ADMINISTRATIVE AMENDMENT
[ ] MINOR PERMIT MODIFICATION

COMPANY NAME: Ingredion Incorporated

FACILITY ID: N-238

1. Type of Organization:
   [ ] Corporation
   [ ] Sole Ownership
   [ ] Government
   [ ] Partnership
   [ ] Utility

2. Owner's Name:

3. Agent to the Owner:

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all circles for confirmation):

Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).

Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.

Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.

Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

Signature of Responsible Official

Juan Carlos Casillas
Name of Responsible Official (please print)

Stockton Plant Manager
Title of Responsible Official (please print)

Date 09-12-2014